Psychological Health: Exploring the Relationships Between Psychological Flexibility, Basic Psychological Needs Satisfaction, Goal Pursuits and Resilience

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Abstract

The core constructs of Acceptance and Commitment Therapy (ACT, Hayes, Strosahl and Wilson, 2012) (including psychological flexibility) and Self-Determination Theory (SDT, Ryan and Deci, 2000) (including type of goal pursuits, basic psychological needs satisfaction and resilience) are contextual process-orientated components and there is research to support their affiliation with psychological health. These criteria are significant to counselling psychology's objective to cultivate current knowledge on fostering psychological health according to its humanistic ethos as well as being relevant to psychology more broadly (Gelso and Fassinger, 1992; Gelso and Woodhouse, 2003; BPS, 2009). To date, minimal research has specifically investigated the relationships between the constructs of ACT and SDT and the current research aimed to address this by asking a community sample of 191 participants (m= 69, f= 122) to complete an online survey. It was hypothesised that psychological flexibility (AAQII-10 item version), basic psychological needs satisfaction (Basic Psychological Needs Scale), goal pursuits (AI), and resilience (CDRISC) would be positively associated with each other and outcomes of psychological health; fewer symptoms (GHQ-12), vitality (SVS) and life satisfaction (SWLS). Then, simple mediation analysis was used to test the hypothesis that basic psychological needs satisfaction, type of goal pursuits and resilience mediate the relationship between psychological flexibility and outcomes of psychological health. Overall, the research findings support the hypotheses, however, multi-collinearity between some of the constructs indicate that psychological flexibility and the SDT components are conceptually similar. The implications these findings have for further research are suggested and the limitations of the current research are highlighted.

1. Introduction

Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl and Wilson, 2012) and Self Determination Theory (SDT) (Ryan and Deci, 2001) are two contemporary approaches of human behaviour that postulate contextualised facilitative processes and components that are affiliated with psychological health and optimal functioning. Psychological flexibility, the core component of ACT, is a psychological process that is defined by the ability to commit to valued action despite experiencing uncomfortable internal experiences (Hayes et al, 2012). SDT proposes that satisfying the basic psychological needs for autonomy, competence and relatedness and engaging in meaningful intrinsic goals are related yet independent determinants of psychological health (Ryan and Deci, 2000). The components from both approaches offer a pragmatic perspective of psychological health that is relevant to applied professions such as counselling psychology (Lent, 2004). Furthermore, the examination of the literature shows evidence to suggest that the ACT and SDT components are affiliated with optimal functioning and psychological health (Niemiec, Ryan and Deci, 2009; Hayes, Strosahl and Wilson et al, 2004; Ruiz, 2010).

To expand upon the related literature, the current thesis aims to address two beneficial lines of enquiry. Firstly, within SDT, Vansteenkiste and Ryan (2013) argue that when the basic psychological needs for autonomy, competence and relatedness are satisfied and when people engage in intrinsic goals, they are also likely to have resilience to aversive life events. This research aims to investigate whether people who have their basic psychological needs met and whether people engage in meaningful pursuits will also report having a capacity for resilience (Ntoumanis, Edmunds and Duda, 2009; Lightsey, 2006). Secondly, to date, minimal research has

explored the relationships between ACT and SDT components. Therefore, this research aims to investigate whether people who have a capacity for psychological flexibility are also likely to have their basic psychological needs satisfied, engage in intrinsic and extrinsic goal pursuits and perceive themselves to have resilience (Wei, Shaffer, Young and Zakalik, 2005).

To explore the relationships between ACT and SDT components could elucidate the extent to which psychological flexibility is an adaptive emotional regulation process that is related to the extent to which a) people's basic psychological needs for autonomy, competence and relatedness are perceived to be satisfied within their socio-environmental context, b) they engage in intrinsic and extrinsic goal pursuits and c) they perceive themselves to be resilient. Furthermore, to investigate whether the aforementioned components are independently associated with psychological health outcomes including, the absence of psychological symptoms, vitality and life satisfaction. Moreover, the current research aims to investigate whether psychological flexibility has an indirect influence on psychological health outcomes through the satisfaction of the basic psychological needs, intrinsic and extrinsic goal pursuits and resilience. To investigate this may highlight whether satisfying the basic psychological needs, engaging in different types of goal pursuits and resilience act as mediating variables to explain how psychological flexibility operates to influence psychological health outcomes.

Drawing upon such pragmatic approaches is pertinent to the central objective of counselling psychology and other applied psychology disciplines: To understand how to promote psychological health and optimal functioning (Joseph and Wood, 2010; Lent et al, 2005). The need to understand the processes and components affiliated with psychological health from a psychosocial perspective, is consistent with the

recent shift in paradigm within psychology, which emphasises the need to adopt a competence enhancement model of psychological health (Kinderman, 2009; BPS, 2009). That is, to seek to cultivate psychological health and optimal functioning beyond the remediation of psychological symptoms (Orlans and Van Scoyoc, 2009; Rizq, 2013; Kinderman, 2009, Fledderus et al, 2010).

Although relevant to other applied professions, adopting a pragmatic approach and philosophical orientation to optimise psychological health is fundamental to counselling psychology's ethos (James, 2010; Walsh, 2003; Gelso and Woodhouse, 2003; Lent, 2004). Gelso and Woodhouse (2003) argue that "over the years counselling psychologists have seldom addressed how this philosophical stance is to be translated into counselling treatments, and in fact have done little empirically or theoretically to advance knowledge of well-functioning" (p. 171). Gelso and Woodhouse (2003) amongst other authors, highlight that given the topics of psychological health and personal growth are intimately related to the profession's identity, it is necessary to research contemporary theoretical approaches to better understand how to promote healthy and meaningful living (Gelso and Fretz, 2001; Larsson, Lowenthal and Brooks, 2012)

To address the topic of psychological health within the context of counselling psychology, Van Deurzen-Smith (1990) urges the need to consider the implications of adopting different philosophical points of view, specifically given that the profession is founded upon a humanistic-existential ethos. This ethos necessitates a person's subjective experience should be understood holistically, in the context of their interaction within social and cultural life domains, and with a view to optimising

processes affiliated with personal growth and self-actualization (BPS, 2006; Cooper, 2009; Walsh, 2003).

Accordingly, as suggested by a number of authors, the review of the literature examines theoretical and research advances that have been developed within associated fields, that adopt two independent yet overlapping philosophical perspectives of psychological health (Goldstein, 2009; Cooper, 2009; Harris and Thorensen, 2007). From a hedonic approach, theory and research is examined from the first wave of positive psychology (Seligman and Csikentmihalyi, 2000; Held, 2004). From a eudaimonic perspective, theory and research is examined from the second wave of positive psychology (Wong, 2011). The advantages and limitations of postulated theoretical constructs are considered with regard to their empirical research support and the extent to which they account for the multiple facets of psychological health (Herman, Saxena and Moodie, 2005). This is in addition to the extent to which they uphold counselling psychology's ethos by adopting a holistic and contextualised view of psychological health (Held, 2004; Lazarus, 2003; Lent, 2004; Cooper, 2009).

Following the review of the literature it is argued that ACT and SDT components uphold the aforementioned criteria. In view of the minimal research that has explored the relationships between these components, preliminary correlational analyses are conducted to test whether psychological flexibility is associated with basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits and resilience and whether these constructs are affiliated with psychological health outcomes. Following this, a series of simple mediation analyses are conducted to test whether psychological flexibility operates to influence psychological health outcomes through the basic psychological needs, intrinsic and extrinsic goals and resilience. The

findings are discussed, the limitations of the current research are highlighted and suggestions for further research are presented to further the line of enquiry between ACT and SDT components, with a view to better understand their role in facilitating psychological health.

2. Literature review

2.1 A Critique of Hedonic Approaches of Psychological Health

Developing an understanding of the facilitative processes and components affiliated with psychological health and optimal functioning is fundamental to the aims of applied psychology professions (Lent, 2004; Joseph and Wood, 2010). As previously described, this objective is also fundamental to counselling psychology, within which there is a need to cultivate theory and research that explains psychological health beyond the absence of disease model (Cooper, 2009; Kinderman, 2009). Specifically, by accounting for the role of psychosocial environmental factors that represent the person in interaction within their environment (Walsh, 2003). Accordingly, the following review first presents definitions of psychological health. Following this, theory and research affiliated with hedonic and eudaimonic conceptualisations of wellbeing are examined based on the empirical research support and their applicability to the context of counselling psychology.

Defining psychological health has proven to be a difficult task, however, it is widely agreed to be a multi-dimensional construct (Dodge, Daly, Huyton and Sanders 2012; Robitschek and Keyes, 2009; Ryan and Deci, 2002; Walsh, 2003). The World Health Organization (WHO) (2005) define mental health with respect to three facets that include the individual's well-being, effective individual functioning and effective

social functioning (Herrman et al, 2005). Fledderus, Bohlmeijer, Smit and Westerhof (2010) rephrase the WHO definition by proposing psychological health includes a) emotional well-being, that is the subjective feelings of well-being such as, life satisfaction and vitality, b) psychological well-being, which is regarded as fulfilling one's potential in accordance with one's values, goals and capacities and c) social well-being, which refers to having meaningful and relationships and a sense of belonging within society (Fledderus et al, 2010; 2372).

The WHO further define 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 fruitfully, and is able to make a contribution to his or her community' (WHO, 1946, 2003, 2005, p.2). Similarly, Dodge et al (2012) recommend that perspectives of psychological health should include an adaptive capacity, to negotiate life stressors and maintain effective functioning.

Fledderus et al (2010) argue that adopting this framework provides a foundation from which to shift public mental health promotion from an absence of disease model that emphasises the reduction of psychological dysfunction, towards a competence enhancement model, which focuses on enhancing opportunities to live and function well. This paradigm shift is reflective of a broader transition in the understanding of psychological health within psychology that is also fundamental to counselling psychology's ethos and agenda (Kinderman, 2009; See BPS A new ethos for mental health, 2009).

Researchers and philosophers spanning centuries have endeavored to understand the nature of optimal experience and living, with the ambition to uncover the best ways to attain it (Ryan and Deci, 2001). One philosophical perspective termed

Hedonism, refers to the view that optimal wellbeing involves the attainment of an abundance of pleasurable experiences and minimizing experiences of pain (Ryan and Deci, 2001; Diener, Oishi and Lucas, 2002). The Greek Philosopher, Aristippus and more recently Utilitarian philosopher, Jeremy Bentham (1789) argued that optimizing pleasure is the highest attainable good in the endeavor towards a "good life" (Diener, Lucas & Scollon, 2006; Ryan and Deci, 2001).

More recently, Martin Seligman, the founder of the positive psychology movement, has become well known for his pledge to conduct scientific study on topics such as positive emotions, character strengths and virtues, and flourishing (Seligman and Csikszentmihalyi, 2000; Peterson and Seligman, 2004). Seligman's intention was to re-orientate the focus within mainstream psychology from pathology to the positive aspects of human experience and to apply the findings to elevate feelings of happiness within the masses (Seligman and Csikszentmihalyi, 2000; Duckworth, Steen and Seligman 2005; Park, Peterson and Brunwasser, 2009). As a result, positive psychology has become widely known for adopting a hedonic approach (Miller, 2008; Ryan and Deci, 2002). Wong (2011) and Held (2004) have argued that the view that positive experiences are distinct and unrelated to negative experiences and the objective to directly alter the content of emotional experiences to elevate them, falls within what they define as the first wave of positive psychology.

Although the use of the term "happiness" can refer to an abundance of different meanings associated with positive affect, within the literature it is often used to refer to a person's evaluative outcome of their emotional state through an assessment of positive emotional experiences minus negative emotional experiences, which is termed 'subjective well-being' (SWB) (or emotional wellbeing) (Diener et al, 2002:

Ryan, Huta and Deci, 2008). Diener and Diener (1995) have defined this as "a person's evaluative reactions to his or her life – either in terms of life satisfaction (cognitive evaluations) or affect (ongoing emotional reactions)" (p.653).

One approach that aimed to increase SWB is Seligman's (1991) Theory of Learned Optmism. Influenced by his earlier work on learned hopelessness and Ellis' cognitive model, Seligman (1991) argued that the way events are interpreted influences the following emotional experience. Therefore, to increase positive emotional experiences following a troubling event, Seligman (1991) suggests challenging pessimistic or negative beliefs to obtain alternative optimistic conclusions, to in turn experience associated positive emotional experiences. Having an optimistic outlook on life has been found to be associated with fewer signs of depression and increased life satisfaction because it is associated with positive emotions (Chang and Sanna, 2001).

Another contribution from the first wave of positive psychology comes from Fredrickson's (1998) Broaden and Build Theory of positive emotions. It is argued that cultivating positive emotions such as joy, contentment and love are evolutionarily advantageous because they enhance a person's functionality within their environment which increases chances of survival. Positive emotions are considered to broaden behavioural repertoires to enable resourcefulness, playfulness and curiosity, which are suggested to enhance relationships and resilience. It is argued that positive emotions counteract inflexible behaviours and repair the physiological damage that results from negative emotions such as anxiety and anger (Fredrickson, 2001, 2004).

To test whether positive emotions replace and counteract the impact of negative emotions, Fredrickson and Levenson (1998) conducted a laboratory study. All

participants were shown a clip of a fear-inducing scene, which was followed by a clip to induce contentment, amusement, or neutrality and sadness. Cardiovascular activity reduced to a greater extent when the second film induced positive emotions compared to the neutral or sad film clip. Fredrickson and Levenson (1998) suggest that cultivating positive emotional experiences repairs the physiological impact of negative emotions.

However, Fredrickson, Mancuso, Branigan and Tugade (2000) replicated Fredrickson and Levenson's (1998) study. Firstly, participants were asked to give an anxiety inducing speech and then they were asked to watch emotionally laden film clips. Whilst viewing the positive film clips was associated with increased self-reported emotional wellbeing, no changes to cardiovascular activity were evident. This finding challenges the idea that positive emotions undo the physiological impact of negative emotions. Fredrickson and Manusco (2000) highlight that their study lacks ecological validity given that the emotional stimuli had no personal meaning to the participants.

In contrast to Fredrickson's (1998) theory, authors from the ACT approach (e.g. Hayes et al, 2012) argue that negative beliefs or emotions (such as anxiety and anger) are evolutionarily advantageous because they act as an internal cue to protect and defend the self when there is a threat of danger. Hayes et al (2012) argue that eradicating such beliefs or emotions despite of contextual advantages would therefore be detrimental to one's survival. Additionally, Hayes et al (2012) have suggested that the intention to replace negative internal experiences (i.e. emotions, thoughts, physical sensations) with positive internal experiences implicates the use of emotional control, manipulation or avoidance strategies.

Blacklegde and Hayes (2001) argue that using control strategies (e.g. distraction, repression, emotional avoidance or suppression) to eradicate or minimise negative emotional experiences may result in temporary relief. However, it is argued that in the long term, control strategies can have a detrimental effect on psychological health and functioning by maintaining a narrow focus of attention, inflexible behavioural patterns, as well as, maintaining avoided internal experiences (see Hayes et al, 2004 and Hayes, Luoma, Bond, Masuda and Lillis, 2006).

For example, Campbell-Sills, Barlow, Brown and Hoffman (2006) found that when participants diagnosed with anxiety or mood disorder were instructed to suppress their feelings following a film clip of a traumatic event, they reported a greater level of negative affect and physiological distress compared with those who were instructed to accept their emotional response. Similarly, Gerearts, Merckelbach, Jelicic and Smeets (2005) found that compared to people reporting low, moderate and high levels of anxiety, those with a tendency to repress anxious autobiographical thoughts reported a higher number of intrusive thoughts at a one week follow up.

This research suggests that the control and avoidance strategies that are implicated in the process of changing the content of emotional experiences can have a detrimental effect on psychological health. Moreover, Stanton and Watson (2014) highlight that the aim to increase positive affect adopts an oversimplified view of positive emotional experiences. For example, their research, based on a number of measures of SWB, suggests that positive emotionality has a two-factor structure; Whilst joviality is argued to be an adaptive facet of positive affect based on the finding that it was positively associated with well-being and negatively associated with psychological distress, experience seeking was positively associated with

psychopathological symptoms such as mania and externalising symptoms. As such, Stanton and Watson (2014) argue that facets of positive experience, such as experience seeking can be maladaptive.

In line with this, Brickman and Campbell's (1971) Hedonic Treadmill Theory proposes that humans have a baseline level of SWB and an adaptive emotional reaction to pleasurable or unpleasurable events. For example, seeking pleasure and satisfying desires through external means, such as buying a brand new car, having the latest fashion accessory or even indulging in chocolate, may increase the level of SWB through a sense of excitement or comfort but is only short lived. Brickman and Campbell (1971) suggest that due to hedonic adaptation, once the pleasurable event has passed or becomes the norm, a person will return to their baseline level of SWB. As previously heightened feelings dip, a pleasure seeking craving or need ensues in order to return to a peak of pleasurable feelings and this cycle of the hedonic treadmill continues.

Harris (2007) argues that given the implications of hedonic adaptation (e.g. SWB is temporary), pursuing increased states of SWB can be problematic. Harris (2007) refers to this as "the happiness trap." For example, research by Janoff-Bulman Brickman and Coates (1978) found that lottery winners did not report greater happiness compared with a control group over an eighteen-month period. Moreover, behaviours enacted to increase pleasurable experiences and avoid those that are unpleasant or intolerable, has been found to explain the maintenance of dysfunctional emotional regulation and behavioural patterns evident in substance abuse, marijuana smoking and obsessive-compulsive tendencies, which can become an obstacle to

every day functioning (Levin, Lillis, Seeley, Hayes, Pisterello and Biglan, 2012; Twohig, Shoenberger and Hayes, 2007; Twohig, Hayes and Masuda, 2006).

The maintenance dysfunctional behavioural patterns and psychological distress is a pertinent issue within applied social sciences, given that this is the reason that clients frequently seek support. However, authors such as Shmotkin (2005) and Held (2004) criticize the objective of the first wave of positive psychology to pursue happiness as an outcome, by altering the content of experiences (to increase SWB and decrease symptoms of distress) to be flawed on the basis that this objective also explains the maintenance of psychological dysfunction.

For example, Held (2004) warns against eradicating negative emotions because this neglects useful information regarding their function and meaning. As pertained by Rogers (1959), negative emotions arise when the self-actualizing tendency is thwarted and a person is unable to live according to their values (i.e. organising valuing process). Bond and Bunce (2003) highlight that being in touch with feelings such as anger can assist in taking valued actions, such as asserting one's perspective or needs. Like Rogers' (1959), Hayes et al (2012) argue that taking part in activities for the purpose of elevating positive feelings can be problematic when this overrides important emotional information or taking valued action.

Similarly, Huta (2013) proposes that taking part in activities to experience pleasure is an important part of living well, when this is regulated in a healthy way. As such, Veenhoven (1994) and Lent (2005) argue that the first wave of positive psychology neglects the significance of contextual factors and conditions in determining psychological health outcomes. For example, Ehrenreich (2009) argues that Seligman's (1991) Theory of Learned Optimism is problematic because it

dismisses the significance of the context in which a person is optimistic or pessimistic. Ehrenreich (2009) argues that in certain contexts optimism is unrealistic and can be a symptom of denial or delusion, such as the gamblers belief he or she will win against the odds. Furthermore, Held (2004) suggests that having an optimistic outlook without foundation can inhibit seeing the reality of situations, which may prevent taking beneficial action. Held (2004) argues that it is necessary to account for the context and function of behaviours in order to determine whether they are of psychological benefit (Hayes et al, 2012; Held, 2004; Friedman and Robbins, 2012).

Moreover, in view of the conceptualization of psychological health to include healthy individual and social functioning, increasing SWB from a hedonic perspective alone is limited in the context of counselling psychology (Herrman et al, 2005; Fledderus et al, 2010; Lent, 2005). Authors such as Ryan and Deci (2001) argue that eudaimonic approaches are important to consider, particularly given that they have received substantially less attention within the literature.

2.2 A Critique of Eudaimonic Approaches of Psychology Health

Aristotle viewed eudaimonic wellbeing differently from the hedonic perspective on happiness or SWB which pertained to it being an outcome affective state (Ryan et al, 2008). Eudaimonia is defined by the process of having meaning in life and living in accord with one's values, abilities and aspirations, in a way that contributes to personal growth (Ryan et al, 2008; Ryff and Singer, 2008; Ryan and Deci, 2001). Accordingly, engagement in eudaimonic activities also affects affective experience. A definition of Eudaimonia, as interpreted by Waterman (1984) suggests it involves "the feelings that accompany behaviour in the direction of, and consistent with one's true potential" (p.16). Living congruently to one's values and engaging in

activities that are held as meaningful is argued to reap feelings associated with vitality, achievement and satisfaction (Ryan, et al 2008; Deci and Ryan, 2008; Ryan and Frederick, 1997). This approach to psychological health is referred to within the literature as psychological wellbeing (PWB) (Ryff, 1989).

Leaders of the Humanistic movement such as Carl Rogers, Abraham Maslow and Rollo May, to name only a few adopted a eudaimonic philosophy (Ryan and Deci, 2002). Their focus was to develop theory that accounted for the processes and conditions that foster optimal functioning and psychological health (Strawbridge and Woolfe, 2003). Maslow's (1943) "Hierarchy of Needs" and the concept of "Self-actualization" were revolutionary and promoted ideas such as personal agency, potential, and free will over the future when internal and external conditions are in harmony (Baard, Ryan and Deci, 2004). Rogers (1961) notion of the fully functioning person proposed that cultivating qualities such as openness to experience, existing within each moment, trusting in one's own judgment, acting with integrity and freedom of personal choice, would enhance the process of self-actualization to foster self-fulfilment and enrich living (Rogers, 1961). Whilst Frankl (1959) emphasised the importance of cultivating meaning in life as a means to experience freedom and withstand the most insufferable circumstances and the inevitability of human suffering (Frankl, 1959; Melton and Schulenberg, 2008).

However, the theoretical work of the Humanistic psychologists has been criticised for lacking empirical support and omitting the development of assessment tools and empirical support (Duckworth et al, 2005; Melton and Schulenburg, 2008; Friedman and Robbins, 2006). It can be argued that the second wave of positive psychology has intended to bridge this gap by assuming a focus on understanding and

quantifying eudaimonic wellbeing or PWB, by adopting an orientation towards meaning in life and personal growth and by developing measures and conducting research to better understand the role such dimensions have in psychological health (Wong, 2011).

Inspired by the work of the Humanistic psychologists, Ryff (1989) put forward a model of PWB that incorporates theoretically informed dimensions of wellbeing that include; self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. Ryff (1989) found that the aforementioned constructs were associated with each other (r=.32- 7.6), as well as with outcomes of psychological health (i.e. life satisfaction, affect balance, self-esteem and morale (r=2.5-7.5)), whilst showing a negative relationship with negative aspects of functioning (i.e. powerful others, chance control and depression). Given the high interrelations between some of the dimensions (i.e. self-acceptance, purpose in life and environmental mastery), Ryff (1989) suggests that this may be measuring the same underlying construct. Ryff (1989) disputes this on the basis of their differential relations to outcomes of positive functioning and variation across age groups to argue that the theory-guided dimensions are interrelated and distinctive features of PWB, that addresses facets of individual functioning and emotional wellbeing.

However, in line with the WHO (2005) definition of positive mental health Keyes (1998) goes beyond Ryff's (1989) model by highlighting the importance of social wellbeing as a key component of optimal functioning that pertains to emotional wellbeing and individual functioning. As such, Keyes (2002) argues that social coherence, social actualization, social integration, social acceptance and social

contribution are of equal importance to attain facets of PWB that are presented by Ryff (1989).

Keyes (2002) conducted a large-scale study to the prevalence of flourishing and languishing within a sample of 3032 participants. Keyes (2002) proposed that flourishing was reflected by having one measure of SWB (e.g. positive affect, life satisfaction), and six of eleven components of either PWB (e.g. Ryff, 1989) or social wellbeing (Keyes, 2002). Keyes (2002) also measured the level of depression within participants. Keyes (2002) found that within participants' who were not depressed, 20% were flourishing and 14.1% were languishing, whilst 65.9% reported moderate mental health. Interestingly, within participants who were depressed, 6.3% were flourishing and 33.3% were languishing, whilst 60.45% showed an indication of moderate mental health.

Significantly, this finding challenges the assumptions of the first wave of positive psychology, to suggest that mental health is more complex than a dichotomy of positive and negative emotional experiences (Keyes, 2002). Keyes (2002) findings highlight that mental health is better viewed as existing on a continuum from flourishing to languishing and as independent components that can overlap with mental health issues such as depression. From a competence enhancement model that views psychological health beyond the absence of disease, Keyes (2002) highlights that people can function well despite experiencing psychological symptoms, when emotional, psychological and social aspects of wellbeing are fulfilled.

However, Ryan and Deci (2001) highlight that although Ryff (1989) provides a description of the components that define PWB, the model does not account for the processes and components that foster them. Similarly, although Keyes' (2002) model

accounts for emotional, individual and social facets of psychological health, and, highlights a view of mental health that exists on a continuum, it remains to be a prescriptive and descriptive approach that does not elucidate the processes and conditions that determine their attainment. Furthermore, Ryff (1989) and Keyes (2002) models apply a syndromal approach to psychological health that mirrors that of the DSM of psychological disorders. For these reasons, these models of psychological health have limited scope in their application to counselling psychology practice, given that its ethos encourages working from the client's subjective experience, by accounting for the wider social and historical context, with the objective to foster personal growth (Joseph and Wood, 2010; Cooper, 2009). This highlights a need to adopt a pragmatic approach, to understand the facilitative components and processes that enhance psychological health, from the perspective that it is an outcome of meaningful interactions within the environment, pertaining to emotional, individual and social wellbeing (Joseph and Wood, 2010; Lent, 2005).

In view of this, the following literature review aims to introduce and examine two approaches. First is Hayes et al's (2012) Acceptance and Commitment Therapy model which is classified as falling within the third wave of Cognitive-Behavioural Therapy. Second, is Ryan and Deci's (2000) Self-Determination Theory, which is classified as being part of the second wave of positive psychology. Both SDT and ACT represent eudaimonic perspectives that aim to increase life satisfaction and vitality and alleviate psychological symptoms by fostering opportunities to live meaningfully, resiliently and efficaciously (Hayes, 2013). Moreover, these approaches offer holistic, contextual and facilitative (rather than prescriptive) approach to psychological health which adopts a competence enhancement

perspective, as opposed to an absence of disease model or hedonic wellbeing perspective of psychological health (Ryan and Deci, 2001; Hayes et al, 2012).

Accordingly, the aim of the following review is to a) expand upon the theoretical components and process from the ACT and SDT approaches, b) to assess how the constructs relate to each other and c) review the research regarding their theoretical processes and components in relation to psychological health. Following this, the potential to expand both ACT and SDT is discussed and it is proposed that exploring the relationships between ACT and SDT components to be beneficial way to understand and promote psychological health. Furthermore, some considerations are presented regarding the benefit that ACT and SDT hold in the context of counselling psychology, both in terms of counselling psychology's philosophical foundations and objective to uphold a competence enhancement model that addresses emotional, psychological and social aspects of psychological health (Kinderman, 2009; Flederrus et al, 2010).

2.3 Acceptance and Commitment Therapy: Psychological Flexibility

Over recent years ACT has emerged as a popular third-wave cognitive behavioural therapy approach. The overarching objective of ACT is to facilitate clients to overcome inhibiting psychological experiences in order to live meaningful and valued lives (Hayes et al, 2012). For this reason, the ACT model of psychological health warrants attention here. Before presenting the core theoretical constructs, it is useful to highlight some important foundational features of ACT because it offers an alternative perspective to the models of SWB and PWB that have been discussed in the preceding section.

Firstly, ACT is founded upon a philosophy termed functional contextualism which views the function of behaviours as related to, rather than independent from, the specific historical and situational context in which they arise (Biglan, Hayes and Pisterello, 2008). Hayes et al (2012) refer to this as the act-in-context. From this philosophical approach, truth can only be evaluated by its pragmatic success, that is, whether behaviours are functionally successful with their context. Rather than breaking down the concept of psychological health into definitional elements or focusing on the content of emotional experiences (e.g. Ryff, 1989 and Keyes, 2002 theories of PWB), Hayes et al (1997) are interested in the contextual influences on behaviours that can be applied to alter problematic patterns of functioning, to cultivate adaptive functioning, meaningful living and psychological health (Steger, Sheline, Merriman and Kashdan, 2013).

It can be seen that the ACT approach contrasts with the first wave of positive psychology which tended to focus on directly altering the content of cognitive or emotional internal experiences (e.g. Seligman, 1991, Theory of Learned Optimism; Fredrickson, 1998, Broaden and Build Theory). From the ACT perspective, positive and negative internal experiences (i.e. thoughts, emotions, physical sensations) can only be understood in terms of their function within the contexts in which they arise (Hayes et al, 2012). This overcomes the problem of attributing labels to emotional experiences, which was a criticism of the first wave of positive psychology (Miller, 2008; Lazarus, 2003; Held, 2004).

ACT is also uniquely founded upon Relational Frame Theory (RFT). Although it is beyond the scope of the thesis to cover RFT in depth, in brief, RFT is a behavioural theory of language and cognition that explains how based on learning principles arbitrary relations are built in a variation of ways between internal and

external events, which are termed relational frames (See Hayes, 2004; Hayes and Gifford, 1997; Hayes et al, 2006). Relational framing refers to the influence that relational frames have over behavioural responses. Due to the relational learning that occurs from historical events and the human capacity for imagination, events can be perceived, experienced and responded to, even when they are not occurring in real life (Hayes et al, 2012). This explains human suffering as well as the human capacity for innovation (Hayes and Gifford, 1997; Hayes, 2004; Hayes et al, 2006; Garland and Fredrickson, 2013).

In terms of human suffering, Hayes et al (2012) identify that psychological events are not problematic in themselves but the meaning that is attributed to an experience can be. For example, if psychological events are perceived to be a threat, whereby thoughts, images, bodily sensations, memories and emotions are triggered and cannot be tolerated, the use of internal avoidance strategies or problem solving techniques may be employed with the intention to minimise or eradicate the unpleasant experience.

Avoidance strategies are advantageous when there is a threat of danger (Hayes et al, 2012). However, avoidance strategies can become problematic when no real threat exists but is perceived and when this prevents taking value-congruent actions (Wilson and Murrell, 2003). When this is the case, Hayes et al (2012) argue that attempting to control, manipulate or avoid unwanted experiences narrows the attentional focus to such events and results in fixed and rigid behaviours, which paradoxically maintain and exacerbate the unwanted experience (Hayes, 2002).

The perpetual effort expended on avoiding unwanted experiences, although may reap temporary relief, takes the person further away from engaging in actions

that reflect what is of true value and can result in longer-term problems, which impede a person's functionality and wellbeing (i.e. inhibited social engagement, inability to engage in meaningful activities) (Biglan et al, 2008; Hayes, 2002; Hayes et al, 2012). Hayes et al (2012) term this process psychological inflexibility and is defined by six core interrelated processes which include; past or future focused attention, cognitive fusion (i.e. attachment to the content of internal experiences), self-as-content (i.e. ascribed means of defining the self), experiential avoidance (i.e. unwillingness to tend to internal experiences), confused or unclear values and an inability to commit to valued action (Hayes et al, 2012).

Flaxman, Blackledge and Bond (2011) argue that the internal or behavioural methods of control or avoidance that are reflective of psychological inflexibility exist on a continuum from subtle (e.g. repression, nail biting) to more self-destructive ways of avoiding intolerable experiences (e.g. alcohol abuse, self-harm, suicide). Although ACT research is relatively new, the evidence suggests that psychological inflexibility underlies a range of psychological disorders including anxiety and depression (within clinical and non-clinical samples) (Flaxman et al 2011; Hayes, Wilson, Strosahl, Follette and Gifford, 1996; Hayes et al, 2004; Tull, Gratz, Salters and Roemer, 2004; Bond & Bunce, 2000) and different types of phobias (e.g. social phobia, agoraphobia, blood phobia, and a fear of intimacy in both clinical and non-clinical samples) (Toarmino, Pistorello, & Hayes, 1997; Polusny, 1998; Stewart, Zvolensky, & Eifert, 2002; Dykstra & Follette, 1998), in addition to substance abuse, obsessive-compulsive disorder, panic disorder, general anxiety disorder and PTSD symptoms (Roemer, Salters, Raffa and Orsillo, 2005; Forsyth Parker and Finlay, 2003, Andrew and Dulin, 2007; Hayes et al, 2004). Psychological inflexibility has also been found to be associated with reduced immune system functioning and the manifestation of

physical symptoms (Hayes and Gifford, 1997), as well as within alexithymic samples (Karvonen, Veljola, Kokkonen, Läksy, Miettunen and Joukamaa, 2005; Porcelli, Bagby, Taylor, De Carne, Leandro and Todarello, 2003; Hayes et al, 2006, Monsen and Havik, 2001). The research findings suggest that psychological inflexibility is an important mechanism in the formation and maintenance of a range of psychological and physical health symptoms.

Rather than attempting to alter the content of difficult internal experiences, Hayes et al (2012) propose that if the context of experiencing difficult private experiences is altered, the function will also change (Hayes et al, 2012). As such, Hayes et al (2012) propose the antidote for psychological inflexibility is psychological flexibility. Psychological flexibility is defined as the capacity to be in contact with the present moment, to willingly experience unpleasant internal experiences (i.e. thoughts, feelings, bodily sensations, images, memories) and commitment to valued action.

Psychological flexibility is defined by six core interrelated processes that include: 1) cognitive de-fusion, that is the detachment from the literal meaning of thought contents in a way that removes their influence on subsequent behaviour, 2) self-as-process, which refers to the ability to observe and notice internal experiences whilst self-as-context refers to the ability to do the former by adopting the perspective of the observing self or "I" position, 3) experiential acceptance, refers to the capacity to willingly tend to uncomfortable internal experiences 4) contact with the present moment, 5) to have clear values and, 6) commitment to valued action (Ciarrochi and Bailey, 2008). Hayes et al (2012) argue that the first four mindfulness processes of psychological flexibility offer a way of altering the context from which unwanted

internal events are experienced, thereby altering the relationship to them. This undermines the avoidance tendency and permits a person to act in valued ways, despite experiencing difficult internal experiences.

It is notable that mindfulness is central to third wave behaviour therapy models (e.g. Dialectical Behaviour Therapy, Linehan, 1993; Mindfulness Based Stress Reduction, Kabat-Zinn, 2003; Funtional Analytic Psychotherapy, Kohlenburg and Tsai, 1991) (Hayes, 2002). Accordingly, psychological flexibility has been found to correlate with mindfulness (r=.53) (McCracken and Zhao-O'Brien, 2010). However, the definition of psychological flexibility extends the definition of mindfulness with regard to the extent to which a person is able to take valued action despite uncomfortable internal experiences. Notably, McCracken and Zhao-O'Brien's (2010) study showed that after controlling for mindfulness, psychological flexibility predicted psychological health outcomes to suggest that although the two constructs are related, they are also independent constructs.

Psychological flexibility is measured using the Avoidance and Action Questionnaire (AAQ), of which there are a number of revised versions (Hayes et al, 2012). The AAQ is an assessment tool designed to measure the extent to which a person is able to willingly experience unwanted private experiences and commit to valued action (Fledderus et al, 2010). Scored negatively, the AAQ measures psychological inflexibility, scored positively the AAQ measures psychological flexibility. The AAQ has been used to assess psychological flexibility in relation to treatment outcomes for a number of clinical problems, experimental studies, as well as correlation research of related theoretical constructs (i.e. thought suppression,

cognitive de-fusion) and psychological health outcomes (Hayes et al, 2012; Hayes et al, 2004; Hayes et al, 2006).

Given the aim of the present thesis is to explore processes that promote psychological health and affiliated constructs, the following review aims to highlight the empirical findings regarding the role of psychological flexibility in promoting psychological health. In a review of randomised control trials, Hayes et al (2006) reported 21 studies that utilised ACT interventions for a range of psychological problems. On average the effect size (Cohen's *d*) was medium at the end of ACT treatment (*d*= .66) and remained medium at the follow up which happened on average five months later) (*d*= .65). Notably in comparison to control groups (i.e. participants on a waiting list, receiving placebo treatment or treatment as usual) receiving ACT treatment revealed a large effect size at the end of ACT treatment (d= .99) and a medium effect size at the follow up (*d*= .71).

Similarly, Powers, Zum Vorde Sive Vording, and Emmelkamp (2009) conducted a meta-analysis of 18 RCTs and found that ACT treatment was better than waiting list and placebo (.68) and treatment as usual (.42) but not more effective than well established treatments (.18). Although following a re-analysis of the data, Levin and Hayes (2009) found that that comparative to established treatments the effect size ranged between .27 and .49, indicating the ACT approach to be advantageous. Although their has been debate regarding the efficacy of ACT comparative to well established treatments, such as CBT, the research suggests overall that the ACT model of psychological flexibility yields promising results indicated by improvements to psychological health, both at the end of treatment, as well as in the long term (Öst, 2008; Gaudiano, 2009; Hayes et al, 2006).

Gaudiano and Herbert (2006) conducted a brief ACT intervention to cultivate psychological flexibility in a sample of clients experiencing schizophrenic symptoms. The findings indicated that compared to the control, the ACT group had fewer readmissions to hospital. Although this difference was not significant, only the ACT group reported a reduction in believability of private experiences such as the content of hallucinations, beliefs, images, and emotions. When the change in frequency of hallucinations was controlled for, the reduction in believability was associated with a reduction in psychological distress.

Similarly, research by Twohig et al (2006) found that following an ACT intervention, individuals with Obsessive Compulsive Disorder (OCD) all showed a significant decrease in the believability of obsessions, psychological inflexibility, compulsive behaviours and symptoms of anxiety and depression at the end of the treatment and at a three month follow up. The research suggests that cultivating psychological flexibility reduces the influence that distressing psychological events have on associated maladaptive behaviours which subsequently reduces symptoms of distress (Ruiz, 2010).

Furthermore, in a study of patients seeking treatment for chronic pain, McCracken and Zhao-O'Brien (2010) found that psychological flexibility was the greatest predictor of emotional, physical and social functioning over and above the extent a person was experiencing pain, the extent pain could be willingly experienced and the to which extent a person had a capacity for mindfulness. McCracken and Zhao-O'Brien (2010) suggest that this finding can be explained on the basis that psychological flexibility has a positive influence on functioning across life domains, by targeting triggering events and the secondary implications of psychological

inflexibility, such as social isolation and inactivity to increase value-based action, as well as targeting physical pain specifically. Biglan et al (2008) argue that as well as treating psychological and behavioural issues, psychological flexibility offers a preventative framework that can be applied to facilitate people to live more meaningfully to increase emotional, social and individual wellbeing.

For example, in a longitudinal study of a non-clinical sample based in an organizational context, Bond and Bunce (2003) found that psychological flexibility was associated with perceived job control. Similarly at a one-year follow up, psychological flexibility was found to be the greatest predictor of job performance and fewer psychological symptoms of distress, when negative affectivity, locus of control and job performance were controlled for. Pertinently, Bond and Bunce (2003) highlight that psychological flexibility also predicted a reduction in symptoms of distress and increased job performance at a one-year follow up, whilst the reverse relationship was not supported. Bond and Bunce (2003) suggest that psychological flexibility is an important antecedent process that influences functioning and emotional wellbeing.

In line with Ciarrochi, Billich and Godsel's (2010) proposition, the research evidence from longitudinal studies suggests that psychological flexibility is an important antecedent capacity that when cultivated is associated with adaptive functioning and psychological health. Research by Wilson, Sandoz, Kitchens and Roberts (2010) further shows that the extent to which people report value-congruent living across a range of life domains is associated with psychological health outcomes including social functioning, vitality, mental health and the ability to take action despite emotional or physical problems (r= .13 – r= .27). Valued living was also

found to be negatively associated with psychological inflexibility and outcomes of psychological distress (r=-.14 – r=-.20) (i.e. anxiety, depression, general mental health). However, Wilson et al (2010) highlight that although these relationships support the hypotheses, the correlations were smaller than expected; they suggest that there are other variables that account for the variation in psychological distress and psychological health outcomes, indicating a niche for future research to develop.

Block-Lerner, Wulfert and Moses (2009) amongst other authors highlight that the idea that acceptance enhances psychological health is not new and is pivotal to a number of traditional Humanistic-Existential therapy models, as well as, recent Third Wave Cognitive Behavioural Therapy models. For example, Rogers (1951) argued that acceptance could occur through empathic, non-judgemental and congruent conditions of a therapeutic relationship. Research has explored acceptance as an outcome of the therapeutic relationship and has been extensively theorised by traditional approaches (Kirschenbaum and Jourdan, 2005; Friedman and Robbins, 2006; Melton and Schulenburg, 2008).

However, the development of empirical measures directly related to acceptance processes and associated research, such as that which has been addressed by ACT authors, is relatively recent (Block-Lerner et al, 2009). Moreover, Block-Lerner et al (2009) highlight that the ACT model of psychological flexibility is grounded within the science of RFT and functional contextualism and places the greatest emphasis on developing a scientific understanding of the process of acceptance compared to recent and traditional approaches.

The significance of behaving in ways that are congruent to a person's values echoes the key principle of eudaimonic perspectives such as that of Rogers (1961)

who proposed humans have an organismic valuing tendency. Similarly, it is proposed by Hayes et al (2012) that living according to values positions the person closer to their ideal self and life which furthers the process of self-actualization, thus increasing self-fulfilment and well-being. Whilst a limitation of the humanistic approach is the lack of scientific rigour in which these concepts have been studied, the empirical advances within ACT have gone some way to address such overlapping principles (Melton and Schulenburg; Friedman and Robbins, 2006).

In view of this, it can be seen that there is accumulating evidence which supports that psychological flexibility is associated with emotional wellbeing and effective individual and social functioning across a range of presenting issues (Ruiz, 2010). However, as suggested by Plumb, Stewart, Dahl and Lundgren (2009) and Wilson et al (2010) there exists a gap in the literature to explore psychological flexibility in relation to other compatible theoretical components affiliated with psychological health. It is argued here that exploring psychological flexibility in relation to the components of Ryan and Deci's (2000) Self-Determination Theory (e.g. basic psychological needs satisfaction, goal pursuits and resilience) could further the understanding of whether psychological flexibility is associated with such psychosocial facilitators of psychological health, and whether these relationships influence psychological health outcomes.

In view of this, the following literature review aims to elucidate the theoretical components of SDT and research evidence regarding their relationship to psychological health. Following this, the compatibility of the ACT and SDT models are examined and opportunities to expand upon both approaches in the promotion of psychological health are highlighted. Additionally, further considerations are

presented regarding the consistency these models have in the context of counselling psychology.

2.4 Self-Determination Theory

Enhancing client's self-determination to live meaningful, healthy and satisfying lives is an important objective for counselling psychologists, amongst other applied professions. This objective is in line with counselling psychology's competence enhancement approach and that of the BPS (2009), who argue that psychological health should be viewed beyond the elimination of psychological symptoms to account for psychosocial factors and facilitators (Gelso and Fretz, 2001; Strawbridge and Woolfe, 2003).

Accordingly, the following literature review examines the research evidence for the core theoretical components of Ryan and Deci's (2001) psychosocial meta-theory of psychological health, termed Self Determination Theory (SDT). These components include; basic psychological needs satisfaction, type of goal pursuits (i.e. intrinsic and extrinsic) and resilience. First, the extent to which satisfying the basic psychological needs (i.e. autonomy, competence and relatedness), engaging in different types of goal pursuits (i.e. intrinsic and extrinsic) and having a capacity for resilience are associated with outcomes of psychological health, as well as being related components is addressed. Following this, psychological flexibility (e.g. Hayes et al, 2012) is explored in relation to the aforementioned components, with a view to considering how these may be associated with psychological health.

Expanding upon previous models of psychological and social wellbeing (e.g. Ryff, 1989; Keyes, 2002) SDT is centred on understanding how contextual facilitative conditions act as motivational influences that drive meaning-orientated interactions

which are of benefit to personal growth and psychological health (Held, 2004; Hayes, 2013). From a Humanistic position, SDT is founded on the assumption that humans have an innate self-organizing capacity towards self-actualization that is dependent on the availability of facilitative resources within the environment and the person's interaction within it (Ryan and Deci, 2002; Deci and Vansteenkiste, 2004). In view of this, SDT can be considered as part of the second wave of positive psychology as it offers a contextual model of functioning and psychological health that is grounded within a eudaimonic philosophy.

2.4. 1 Basic Psychological Needs Satisfaction

According to Ryan and Deci (2000) there are three innate and universal basic psychological needs for autonomy, competence and relatedness. Ryan, Lynch, Vansteenkiste and Deci (2011) describe the need for autonomy as "actions that are self-endorsed and volitional rather than controlled or compelled" (p. 38). Competence has been defined as " the psychological need to experience confidence in one's capacity to affect outcomes" (Ryan et al, 2001; 38). Deci, Ryan, Gagné, Leone, Usunov and Kornazheva (2001) suggest that competence refers to feelings associated with ability to achieve aspired outcomes of demanding and developmental activities through mastering one's environment. Ryan and Deci (2002) emphasise that, "Competence is not, then an attained skill or capability, but rather a felt sense of confidence and effectance in action" (p. 7). Finally, Deci et al (2001) define relatedness as the reciprocated sense of respect, intimacy, love and belonging that is experienced in relationships with others.

Ryan and Deci (2002) suggest that when a person feels autonomous, competent and related to others within global or specific life domains, they are better able to develop self-knowledge, self-integration and the motivation to interact meaningfully within the environment (Ryan and Deci, 2008). Resultantly, a person is more likely to experience self-fulfilment, vitality and fewer psychological symptoms of distress (Ryan and Deci, 2002; Ryan and Frederick, 1997; Ryan and Deci, 2008). Notably, Deci and Vansteenkiste (2004) argue that the basic psychological needs are innate and universal, therefore being applicable across cultures and life domains.

In a cross cultural study, Deci et al (2001) studied samples of employees working in a privately-owned state company in the USA and a state-owned company in Bulgaria. They aimed to explore the relationship between perceived autonomy support within managerial relationships, basic psychological needs satisfaction, engagement at work and psychological health outcomes. Lending support to Ryan and Deci's (2000) theory, the findings were comparable across the two samples to suggest that perceived autonomy support within managerial relationships is associated with the perceived satisfaction of autonomy, competence and relatedness. Additionally, basic psychological needs satisfaction was associated with employee motivation, work-task engagement and outcomes of psychological health, including self-esteem and lower levels of anxiety (Deci et al, 2001). Research by Baard et al (2004) also found in a work context that perceived autonomy support was associated with basic psychological needs satisfaction, which in turn was associated with positive work performance evaluations, fewer symptoms of psychological distress (i.e. anxiety, depression and somatization) and greater feelings of vitality.

Fluctuations in perceived basic psychological needs satisfaction has also been found to correlate with emotional wellbeing over the course of daily activities (Reis, Sheldon, Gable and Ryan, 2000). Reis et al (2000) asked participants to keep a dairy, to describe social events, rate the extent their basic psychological needs were satisfied, as well as report their emotional well-being. The results showed that when daily events were conducive to feelings of autonomy, competence and relatedness, people also experienced positive emotions, vitality and fewer physical health symptoms.

Similarly, Ryan, Bernstein and Brown (2010) found as well as predicting psychological health outcomes (i.e. vitality, reduced psychological symptoms and emotional wellbeing), the satisfaction of the basic psychological needs partially and fully mediated the relationship between work and leisure time activities respectively and psychological health outcomes. Notably, work time activities were less conducive to feelings of autonomy and relatedness compared to leisure time activities. Overall, these findings suggest that environmental contexts influence the extent to which the basic psychological needs are satisfied. When the basic psychological needs are satisfied, the research suggests this is associated with improved functioning and positive psychological health outcomes.

Evidence that the basic psychological needs are related to wellbeing within interpersonal relationships has also been supported. Research by La Guardia, Ryan, Couchman and Deci (2000) found that people who reported that the basic psychological needs for autonomy, competence and relatedness were satisfied within interpersonal relationships (i.e. parental, romantic and friendships) also reported having a secure attachment (i.e. positive perceptions of the self, others and the world).

Notably, basic psychological needs satisfaction was associated with a lower risk of depression, reduced anxiety and heightened feelings of vitality. Moreover, La Guardia et al (2000) found that basic psychological needs satisfaction explained the relationship between attachment security and wellbeing.

In contrast, Wei, Shaffer, Young and Zakalik (2005) found that basic psychological needs frustration explained how insecure attachment styles (i.e. anxious and avoidant) are associated with psychological distress symptoms, including depression, shame and loneliness. Notably, the thwarting of the basic psychological needs was evident to a greater extent within anxious attachment styles, compared with avoidant attachment styles. Wei et al (2005) argue that the extent the basic psychological needs are satisfied within early relationships influences a persons internal working model, which subsequently influences the extent to which a person can have healthy engagement with relationships.

2.4.2 Intrinsic and Extrinsic Goal Pursuits

It can be seen that across cultures, life domains (e.g. work and leisure) and interpersonal relationships, there is support for Ryan and Deci's (2000) theory that the basic psychological needs for autonomy, competence and relatedness are important facilitative conditions that enhance emotional, psychological and social wellbeing (Wei et al, 2005; La Guardia et al, 2001; Ryan et al, 2010; Baard et al, 2004). Pertinently, Ryan and Deci (2008) propose that when social environments and interpersonal relationships are distant or controlling, a person is inhibited to make personal choices and taking volitional action (e.g. autonomy), feel confidence in one's skills and efficacy within that environment (e.g. competence), or feel connected and

supported by others (e.g. relatedness). This results in a greater level of internal conflict such as confusion, self-doubt and low self worth, which reduces the extent a person is able to take self-determined action (Deci and Vansteenkiste, 2004).

Deci and Ryan (2000) argue that when the basic psychological needs are thwarted, a person is more likely to seek out external means of substituting unmet needs to elevate affective experience and therefore are more likely to pursue materialistic or extrinsic goals. Conversely, it is suggested that when the basic psychological needs are satisfied, a person has greater motivation to take self determined action to pursue non-materialistic or intrinsic goals (Deci and Ryan, 2000). Ryan and Frederick (1997) argue that when a person is engaged with meaningful pursuits, they are fostering self-actualising growth and as a result are more likely to experience feelings of vitality, satisfaction and fewer psychological symptoms.

In contrast, it is expected that over-engagement with extrinsic pursuits is less conducive to personal growth (Deci and Ryan, 2000; Kasser and Ryan, 1993). An over reliance on extrinsic pursuits is expected to have a detrimental effect on emotional health due to the internal conflict that arises when the self-actualising tendency is thwarted, which Deci and Ryan (2000) argue can occur outside of awareness, and which perpetuates a reliance on attaining extrinsic goals and maladaptive functioning.

Similarly to Hayes et al (2012), Niemiec et al argue that projected life goals function to determine choices and action. In a longitudinal study, Niemiec et al (2009) found that goal importance, whether placed on intrinsic or extrinsic pursuits, predicted the extent that goals were attained in the future. Notably, the attainment of

intrinsic goals predicted psychological health outcomes (i.e. self esteem, positive affect and life satisfaction). Yet, the attainment of extrinsic goals predicted negative affect, physical symptoms and anxiety. As such, Niemiec et al (2009) highlight that goal attainment, irrespective of goal content is not always conducive to optimal psychological health.

Moreover, Niemiec et al (2009) found over a period of time, that changes in the extent intrinsic goals were attained influenced the extent participants reported positive psychological health, notably this relationship was mediated by changes in basic psychological needs satisfaction. Thereby, supporting Ryan and Deci's (2000) SDT, which suggests that intrinsic goals influence psychological health because they are more likely to be engaged in due to, as well as foster, the basic psychological needs. Furthermore, Niemiec et al (2009) found that extrinsic goals did not predict positive psychological health outcomes, which is attributed in part to the finding that the attainment of extrinsic goal pursuits was not associated with the satisfaction of the basic psychological needs.

Kasser and Ryan (1993) highlight that living in Westernised cultures that encourage materialism and externalised markers of success, such as wealth, fame or the attainment of materialistic possessions can have a detrimental effect on functioning and psychological health. For example, amongst a sample of college students, Kasser and Ryan (1993) found that the perceived importance and likelihood of attaining extrinsic goals (i.e. financial success) in the future was negatively associated with vitality and the perceived level of self-actualization. In contrast, Kasser and Ryan (1993) found that when importance is placed on intrinsic goals and there is a perceived likelihood these will be attained in the future (i.e. community

feeling) people are more likely to experience greater levels of vitality and self-actualization. This outcome was also found when intrinsic and extrinsic goals were ranked in order of importance, and intrinsic goals were prioritised.

Additional support for the differential relations between intrinsic and extrinsic goals and psychological health, was supported by the finding that intrinsic aspirations (i.e. self-acceptance, community feeling) were associated with fewer symptoms of anxiety and depression, whilst extrinsic aspirations were positively associated with anxiety and depression (Kasser and Ryan, 1993). Moreover, intrinsic aspirations were found to be associated with improved global functioning, social productivity and fewer behavioural problems, whilst extrinsic aspirations were found to be associated with impeded global functioning, reduced social productivity and a greater level of behavioural problems.

Similarly, research by Meyer, Enström, Hartveit, Bowles and Beevers (2007) found that in a sample of catwalk models (whose occupation is based on the extrinsic value of physical attractiveness), the basic psychological needs were less satisfied and revealed comparatively lower outcomes of psychological health (i.e. positive affect, self-actualization and life satisfaction) compared to a non-model community sample. Meyer et al (2007) also found that models reported having lower self-esteem, and connectedness to others compared to non-models. Although, in this second study the basic psychological needs were not measured explicitly, the previous findings suggest that occupations founded upon extrinsic values are less conducive to basic psychological need fulfilment and wellbeing. Moreover, Meyer et al (2007) found that compared to the community sample, models showed higher ratings of symptoms associated with personality disorders.

Ryan and Deci (2002) argue that whilst attaining extrinsic goals may reap temporary feelings of satisfaction or excitement, these often represent secondary gains associated with social recognition or approval. In contrast, intrinsic goal activities are engaged in for their inherent and direct benefit to emotional wellbeing, such as feelings of satisfaction and vitality, as well a associated feelings of accomplishment and personal growth (Ryan and Huta, 2010). McKnight and Kashdan (2009) suggest the pursuit of intrinsic goals fosters meaning and purpose in life which has been found to correlate with outcomes of psychological health.

For example, Duffy, Allen, Autin and Bott (2013) conducted a study with 553 participants who were asked to rate the extent to which they had "calling" in life, as well as, the extent to which they had actualised their calling. The findings showed that when people felt they had actualised their calling in life, they reported greater life satisfaction, which was mediated by the extent to which they felt their job was a source of meaning and satisfaction.

However, Huta and Ryan (2010) found that when people engage in a balance of activities that contribute to personal growth (i.e. eudaimonic wellbeing, intrinsic goals), as well as being a source of pleasure (i.e. hedonic wellbeing, extrinsic goals), they experienced a greater level of psychological health (i.e. positive affect, elevated experience, meaning, vitality and life satisfaction). Although in line with the previous research, when people had a greater tendency to pursue extrinsic goals over intrinsic goals, this was found to be associated with a greater level of negative affect and less positive affect.

Additionally, following an intrinsic goal or extrinsic goal engagement task, Huta and Ryan (2010) found that although engagement in extrinsic goals was

associated with positive affect and carefreeness in the short term, whereas intrinsic goal engagement was associated with increases in eudaimonic psychological health outcomes at a three month follow up. This suggests that intrinsic and extrinsic goals have differential functional relations to psychological health. Yet, alone, extrinsic goal pursuits are less conducive to long term feelings associated with personal growth (Huta and Ryan, 2010). This finding corresponds to Brickman and Campbell's (1971) Hedonic Treadmill Theory which suggests that external means of increasing positive affect occurs temporarily.

As such, the extent to which people perceive the basic psychological needs to be met within relationships, work environments and daily routines have been found to be associated with psychological health, as well as influence the types of goals and activities that people engage in, which have also been found to be independently associated with psychological health (Deci and Ryan, 2008). Wei et al (2005) highlight that it is surprising that despite its psychosocial orientation to understanding fostering conditions of personal growth, the counselling psychology literature has seldom drawn upon Ryan and Deci's (2000) SDT. Wei et al (2005) suggest that as an extension to the literature, SDT offers a clinically useful perspective that can be applied to enable clients to achieve insight into how their behavioural patterns support or inhibit opportunities to be self-determined with psychological health benefits.

However, as highlighted by a number of authors, despite theoretical proposals, research exploring the relationship between SDT components (i.e. basic psychological needs satisfaction and goal pursuit) and resilience remains sparse (Vansteenkiste and Ryan, 2013; Lightsey, 2006; Ntoumanis et al, 2009). Accordingly, the following review aims to explore the definition and research surrounding resilience, to suggest

that basic psychological needs satisfaction and intrinsic goal pursuits are important associated components.

2.4.3 The Basic Psychological Needs, Goal Pursuits and Resilience

Despite the relevance the concept of resilience has to counselling psychology's endeavour, Lopez, Magyar-Moe, Petersen, Ryder, Krieshok, O'Byrne, Lichtenberg, and Fry (2006) revealed in a review of the literature that the topic had received minimal attention. In light of the aim to reo-orientate the focus to understanding components associated with psychological health, it is argued here that resilience is a fundamental capacity that is key in the context of counselling psychology practice given that clients seek support following difficult life events. Although a variety of meanings have been attributed to resilience, all pertain to it being an adaptive ability that enables a person to manage, overcome and even flourish in the aftermath of distressing events (Luthar, Ciccehetti and Becker, 2000; Bonanno, 2004; Hayes et al, 2012; Masten, 1994; Rutter, 2006; Lightsey, 2006; Masten and Reed, 2002). Furthermore, the ability to adapt and continue to function well when faced with traumatic events is pertinent to the dynamic and multi-faceted definitions of psychological health (Dodge et al, 2012; Herrman et al, 2005).

Accordingly, the following review aims to consider the relationships between resilience, basic psychological needs satisfaction and type of goal pursuits (Vansteenkiste and Ryan, 2013). Rutter (1985) defines resilience as the capacity to return to a regular level of functioning soon after an adverse event. Masten and Reed (2002) suggest resilience is "characterised by patterns of positive adaptation in the context of significant adversity or risk" (p.75). Bonanno (2004) suggests resilience is an ability to continue to regulate emotional experiences and manage everyday tasks

and protect against extreme and lasting psychological damage when traumatic events occur (Bonanno, 2004). From this perspective, resilience does not only act as a buffer against psychological harm but it enables adaptive functioning in a way that contributes to psychological health (Bonanno, 2004).

Contrary to early proposals that resilience is an elusive and extraordinary capacity, Wong and Wong (2013) highlight that more recently, resilience has been conceptualised as a process of interaction between the person and environmental resources, against the demands of aversive contextual circumstance (Masten and Reed, 2002; Masten, 2001). Wong and Wong (2013) argue that this perspective has advantageous implications for developing theoretical approaches and interventions that focus on understanding how contextual circumstances influence the development of psychosocial resources associated with resilience.

However, from the first wave of positive psychology, research by Ong Bergman, Wallis and Bisconti (2006) provides some evidence to support Fredrickson's (2001) hypothesis that positive emotions are an important determinant of resilience. Further support for this was found by Fredrickson, Tugade, Waugh and Larkin's (2003) in participants in the aftermath of the attacks on the twin towers in New York in 2001. Similarly, findings by Mak, Ng and Wong (2011) suggest in line with Seligman's (1991) proposition, that having a positive outlook on the world, and the self, enables individuals to have a positive perspective and enact problem-solving capacities in challenging situations.

However, Lazarus (2003) argues that advocating positive over negative emotional experiences oversimplifies resilience by negating the role of the person's social context and fails to account for the function of emotions in the broader long-term context of coping and psychological health. It is for this reason that Rutter

(2008) is skeptical about the assumption that experiencing positive emotions or thinking styles promotes adaptive functioning.

Instead, Masten (2001) amongst other authors have suggested that resilience is related to normative protective factors that interact with each other to buffer against psychological harm and permit adaptation to stressful events. These include; engagement in healthy activities, the utility of social support and effective emotion regulation in response to stressful events (White, Driver and Warren, 2008; Rutter, 1987; Kent and Davis, 2010; Richardson, 2002).

In line with these facets of resilience, Vansteekiste and Ryan (2013) suggest that basic psychological needs satisfaction and engagement with intrinsic pursuits are important facilitative psychosocial components that promote adaptive functioning and the expression of resilient personality characteristics. Similarly, Yates and Masten (2004) suggest that "Resilience is not a characteristic of the individual; it is a developmental process that is fostered or thwarted by the scaffolding provided by the individual's socio-cultural and structural contexts, and ensuing transactions between the individual and multiple levels of ecological influence" (p.535).

Accordingly, it is argued that when faced with perceived threat, the satisfaction of the basic psychological needs is associated with resilient characteristics such as effective self-regulation and constructive self-determined action (Vansteenkiste and Ryan, 2013). For example, when a person is enabled to experience themselves as autonomous, meaning to act with personal volition; competent, meaning to feel a sense of self-efficacy and ability to operate within different environmental domains; and relatedness, meaning the sense of having social resources, then they are considered to have the psychological structures to persist in

meaningful activities and express resilience despite experiencing adversity related to difficult events (Ryan and Deci, 2002).

In a study of cancer patients, Scrignaro, Barni and Magrin (2011) found that when the basic psychological needs were perceived to be satisfied within patient-carer relationships, participants were more likely to experience personal growth. However, Scrignaro et al (2011) found that above social support, the greatest predictor of personal growth at a one year follow up was related to the extent participants had been supported to adopt a proactive approach to life. It is suggested that whilst need fostering relationships offer social and emotional support, more broadly, enhancing autonomy, competence and relatedness is conducive to functional aspects of psychological health such as the actualization of value-congruent activities.

As such, when the basic psychological needs are satisfied, Weinstein and Ryan (2013) argue that a person is likely to exhibit resilience through engaging in meaningful, non-materialistic goals (i.e. intrinsic goals) as opposed to goals that are materialistic or other secondary gain (i.e. extrinsic goals). This is consistent with Rutter (1985) and Kobasa's (1979) perspective that persisting in meaningful pursuits despite adverse events to be an indication of a resilient capacity.

In line with Vansteenkiste and Ryan's (2013) proposition, research by Hass and Graydon (2009) found that amongst a sample of young people who had been fostered, competence and social support were highlighted as key protective themes. Additionally, an orientation towards attaining goals and involvement with the community was associated with resilience to such difficult life transitions. Similarly, research by Damon (2008) suggests that having a sense of purpose and meaning in life is an important aspect of resilience that is conducive to maintaining a commitment to future aspirations despite experiencing challenging events.

Yates and Masten (2004) agree that personal volition and competence are protective factors associated with resilience to traumatic events. Additionally, Rutter (1985) amongst other authors highlight that relationships, both interpersonal and at the community level, function in terms of developmental influence, emotional support and autonomy-supportive motivation in times of hardship (Bernard, 1991; Luthar et al, 2000; Cohen and McKay, 1984; Vansteenkiste and Ryan, 2012).

Moreover, the research suggests that basic psychological needs fulfilment has been found to be protective resources across a range of psychological problems, including eating disorders, body image problems (Pelletier, Dion and Lévesque, 2004; Matusitz and Martin, 2013) and suicidal ideation in response to stressful life events (Burea, Mageau, Vallerand, Boudrias, Desnimaux, Brunet and Morin, 2012). The aforementioned authors suggest that cultivating self determination through the satisfaction of the needs for autonomy, competence and relatedness, strengthens a persons internal locus of causality and commitment to personally defined goals, and reduces the influence of external pressures that thwart such needs and result in maladaptive behaviours.

In addition, Ntoumanis et al (2009) further explore the theoretical relationships between Lazarus's (1991) cognitive-motivational-relational theory of coping (CMRT) and Ryan and Deci's (2001) SDT. Similarly, to Lazarus (1991) Bonanno (2004) and Herrman, Stewart, Diaz-Granados, Berger, Jackson and Yuen (2011) agree that a capacity for resilience fluctuates depending on the weight of the psychological demand of the stressful event, against the availability of protective factors. Accordingly, Ntoumanis et al (2009) propose that when the person perceives their basic psychological needs to be satisfied, a person is more likely to perceive

obstacles as challenges to be overcome, rather than as a threat. The extent to which the basic psychological needs are perceived to be satisfied influences the perceived level of control and capacity the person has to manage and take action to overcome a stressful event. This idea accords with Vansteenkiste and Ryan's (2013) proposition that the fulfilment of the three basic psychological needs protects against psychological disturbance by influencing the way aversive events are perceived and responded to.

However, as highlighted by Ntoumanis et al (2009), the relationship between SDT components and resilience is an under-researched area. Therefore, in line with Ryan and Deci's (2000) theory and the previous research findings, it is expected that basic psychological needs satisfaction would be associated with the attainment of intrinsic goal pursuits. In addition, it would be expected that basic psychological needs satisfaction and the attainment of intrinsic goal pursuits would also be associated with resilience.

Exploring these relationships may increase the understanding of how vulnerability to psychological harm or conversely a capacity for resilience to stressful situations is associated with the extent that interpersonal and social environments thwart or foster the satisfaction of the basic psychological needs, in addition to the extent to which a person is able to engage in meaningful intrinsic pursuits (Vansteenkiste and Ryan, 2013). This is advantageous over the medical model approach and that of the first wave of positive psychology because the aforementioned SDT components account for the psychosocial context from which psychological dysfunction can manifest. Conversely, SDT explains how nourishing environmental contexts and meaningful engagement within such contexts can

facilitate adaptive and optimal functioning, which leads to psychological health outcomes such as vitality, life satisfaction and fewer symptoms of distress (Vansteenkiste and Ryan, 2013; Hayes, 2013).

Accounting for the person in relation to their interpersonal and social environment is in line with counselling psychology's non-pathologizing stance and orientation to psychological health and optimal functioning, which as previously mentioned is consistent with the wider shift in paradigm that is evident within psychology (Cooper, 2009; Gelso and Fretz, 2001; BPS, 2006). Additionally, authors such as Mancini (2008) and Wei et al (2005) argue that the concepts of basic psychological needs satisfaction and engagement with intrinsic (as opposed to extrinsic) goals offers a useful framework to base assessment, formulation and intervention strategies with the intention to identify and facilitate clients who have experienced difficult life events and are in recovery from mental health issues.

2.5 Exploring the Relationships between Psychological Flexibility, Basic Psychological Needs Satisfaction, Type of Goal Pursuits, Resilience and Outcomes of Psychological Health

In view of the findings within the literature review that Ryan and Deci's (2000) SDT and Hayes et al' (2012) ACT components and processes are important factors that are associated with optimal functioning and positive psychological health outcomes, it is argued that a second valuable line of investigation to expand upon both approaches by exploring the relationships between psychological flexibility, the satisfaction of the basic psychological needs for autonomy, competence and relatedness, the engagement with intrinsic and extrinsic goal pursuits and resilience. And furthermore, is to consider how these processes and components may be related

to influence psychological health outcomes (Wei et al, 2005; Shaik and Kauppi, 2010; Vansteenkiste and Sheldon, 2006; Lent, 2004).

It can be seen that when a person is caught up in patterns of psychological inflexibility (i.e. rigid and inflexible patterns of experiential avoidance) accessing and attaining the satisfaction of the basic psychological needs from within environmental contexts (i.e. feelings of autonomy, competence and relatedness) may be impeded. It is notable that there is a lack of research that has addressed the relationship between psychological flexibility and basic psychological needs satisfaction in the context of cultivating psychological health. Notably, Deci and Ryan (2008) suggest that mindfulness skills enable a person to be aware of inner psychological experience when this holds information about what is important to direct required action to fulfil personal needs or the required action in the direction of goal or value orientated behaviour (Brown and Ryan, 2003). However, as previously described, psychological flexibility expands upon the definition of mindfulness to encompass the ability to willingly experiencing difficult internal experiences in the context of taking action that is consistent with ones values (Wilson and Murrell, 2003; Masuda and Tully, 2012).

Research by Grégoire and Bouffard and Vezeau (2012) provides some evidence to suggest that processes affiliated with psychological flexibility are associated with autonomy satisfaction, which in turn is associated with psychological health outcomes. Grégoire et al (2012) found that people who had a mindfulness capacity were more likely to be autonomously motivated, that is, aspire to goals that are self-determined. Grégoire et al (2012) also found that autonomy mediated the

relationship between mindfulness and outcomes of psychological health including, positive affect, reduced psychological symptoms and life satisfaction.

Grégoire et al's (2012) research suggests that when people have a greater awareness of their internal states, needs and values, they are better equipped to have agency over external pressures such as, social expectations to direct action towards self-congruent goals, and in turn reap psychological health benefits (Brown and Ryan, 2003). Notably, Hayes et al (2012) argue that when people take action that is congruent, despite potential internal or external constraints, they are living in alignment with their values and more closely to their aspired life and therefore, are acting with psychological flexibility. Hayes et al (2012) argue that when this is the case, this alleviates internal conflict and reaps feelings associated with satisfaction and vitality.

With regard to the relationship between psychological flexibility and competence and psychological health outcomes, Kee and Wang (2008) found that mindfulness is an important capacity that is associated with task engagement and performance amongst athletes. Although competence is not the attainment of a skill but rather a sense of efficacy and mastery over ones environment, it may be expected that because psychological flexibility is associated with improved functioning that this may be associated with feelings of competence. For example, Bond and Bunce (2003) argue that being aware of self-deprecating internal events, and relating to them with a non-judgemental attitude, creates distance from the literal meaning of fears or self-deprecating beliefs. Bond and Bunce (2003) argue that the ability to willingly experience such potentially inhibiting internal events and to persist in valued actions

permits a person to feel self-affirmation and satisfaction, as well as, enabling functional self-beliefs to develop despite of self-criticism.

Similarly, research by Bond, Lloyd and Guenole (2013) found that in a work context psychological flexibility was found to be associated with dedication, vigour, task absorption and task performance and psychological health outcomes including reduced psychological symptoms of distress. Bond et al (2013) suggest that psychological flexibility is conducive to work-related functioning and psychological health by enabling the management of experiences such as anxiety, self-doubt or boredom which could otherwise hinder a person's functional capacity. Therefore, it would be expected that psychological flexibility is conducive to feelings of competence which are suggested to be associated with satisfaction, vitality and an absence of psychological symptoms (Brown and Ryan, 2003; Ryan and Frederick, 1997).

With regard to relatedness, research by Barnes, Brown, Krusemark, Campbell and Rogge (2007) found that mindfulness was associated with romantic relationship satisfaction and improved responses to relationship distress. In an experimental study Barnes et al (2007) found that during a conflict discussion, partners with higher mindfulness were better able to express their needs and showed reduced emotional stress and a greater change in the perception of the relationship following the discussion.

Kabat-Zinn (1993) suggests that mindfulness skills enable a person to be more aware of their internal experiences as well as their needs and desires, and therefore are better able to express these to significant others. Simulatenously, Kabat-Zinn (1993) suggests that mindfulness skills also enable a person to be more aware of what is

going on for the other person, as well as being able to attend to others emotional needs and desires. As such is can be seen that mindfulness can enhance sensitivity to communication and inform a constructive outcome, thus influencing feelings of love, belongingness and support within interpersonal relationships. If having healthy relationships is held as a value to the person, but fears associated with intimacy and love arise, it can be seen that a capacity for psychological flexibility may enable a person to persist in developing deep and enduring relationships (Hayes et al, 2012). In turn, as suggested by a number of authors, it can be argued that fostering a sense of relatedness is conducive to psychological functioning and psychological health outcomes (Rutter, 1985, Vansteenkiste and Ryan, 2013; Cohen and McKay, 1984).

Brown, Ryan and Creswell (2007) suggest that mindfulness skills enable a person to willingly tend to and contain, rather that react to unwanted psychological experiences or external pressures that conflict with volitional action. This is conceptually related to the concept of psychological flexibility, which has been argued to enabling a person to respond in accordance with held values, to take self-endorsed autonomous actions, reap feelings of competence and develop healthy interpersonal relationships (Brown and Ryan, 2003). From this point of view, it can be seen that psychological flexibility and the basic psychological needs for autonomy, competence and relatedness are conceptually related. However, it can be argued that satisfying the basic psychological needs can be viewed as an outcome of a capacity for psychological flexibility, which in turn can be expected to influence psychological health outcomes.

Additionally, psychological flexibility offers a psychological mechanism that enables effective emotional regulation of internally aversive states that facilitates an

active approach orientation to pursue goals that align with personal values (Hayes et al, 2012). Values can represent qualities, such as within relationships, ways of being and aspects of living that are held to be of significance, such values act as a navigating guide to inform the trajectory of behavioural action (Hayes et al, 2012).

Hayes et al (2012) propose that psychological inflexibility narrows attention and consumes energy to maintain rigid avoidance patterns thereby inhibiting the extent to which a person is able to consider and define what is of value to them, as well as, inhibiting the extent to which value-congruent activities or goals can be engaged with and committed to. Notably, Kashdan and Breen (2007) found that psychological inflexibility to be associated with extrinsic goal pursuits, which can function as behavioural avoidance strategies, to avoid or control unwanted internal experiences.

For example, research by Wicksell, Renöfält, Olsson, Bond and Melin (2008) found that amongst patients experiencing chronic pain, higher levels psychological flexibility reduced the extent to which aversive physical experiences impinged upon day-to-day functioning, as well as, predicting physical wellbeing and psychological health. Similarly, McCracken, Vowles and Gaurlett-Gilbert (2007) found that when participants were instructed to use acceptance-based responses to unwanted internal events, they were more likely to commit to activities that had health benefits and reap greater emotional, physical and social aspects of wellbeing, when compared to participants instructed to use control-based responses. This suggests that psychological flexibility is an important mechanism that facilitates engagement with beneficial goals, which in turn reap enhanced psychological health outcomes.

It is notable that Deci and Ryan (2000) differentiate between intrinsic and extrinsic goal contents, whereas Hayes et al (2012) promote value-based action. Notably, Niemiec et al (2009) suggests that value-congruent action is not always conducive to psychological health. It is unclear given that a person can value extrinsic materialistic values, the extent that their attainment can reflect a capacity for psychological flexibility. On one hand, it can be argued that extrinsic goal pursuits, when held as a value can be reflective of psychological flexibility. On the other hand, it can be argued that psychological flexibility would be associated with the attainment of intrinsic goal pursuits, given that extrinsic goal pursuits have been found to be associated with psychological inflexibility and people with psychological flexibility are more likely to have an awareness of what is meaningful and take actions that are conducive to foster their personal development (Kashdan and Breen, 2007). In view of the research, it may be expected that a capacity for psychological flexibility is more likely to be associated with the engagement in meaningful pursuits, which in turn are conducive to feelings of vitality, life satisfaction and an absence of symptoms of distress (Ryan and Frederick, 1997; Kasser and Ryan, 1993, 1996).

Additionally, it is suggested that psychological flexibility may act as an associated psychological mechanism that enables a person to overcome internal or external aversive events to act with resilience (Garland and Frederickson, 2013). For example, Garland and Fredrickson (2013) build upon Fredrickson's (1998) Broaden and Build Theory by integrating mindfulness processes. They propose that rather than attempting to cultivate positive emotions directly, they suggest that cultivating mindfulness affords an opportunity to exit out "downward spirals". Downward spirals are defined as the pervading influence of negative affect following an unpleasant critical event. This typically leads to a narrowing of a person's perception, attention,

and behavioural responses, which creates a perpetuated downward spiral, impacting negatively on beliefs regarding the self and the world as well as the interaction within in it. Like Lazarus and Folkman (1987), Garland and Fredrickon (2013) suggests that the appraisal of a stressful event to be as important to the subsequent experience of stress or coping as the event itself.

Garland and Fredrickson (2013) argue that cultivating mindfulness enables a person to be aware of their inner experience and behaviour when they are in a downward spiral. Therefore, they suggest that mindfulness enhances the conscious awareness of the stimuli that are attended to, the appraisal of a negative events and the related emotional experience that follow. Moreover, it is argued that mindfulness can act as a buffer between thought-action reactions, whereby negative appraisals can be assessed giving an opportunity for a functional reappraisal to be made.

Therefore, mindfulness is proposed to act as a metacognitive capacity that enables the transition into an upward spiral. Garland and Fredrickson (2013) suggest that an upward spiral involves an openness of experience and a broadening of behaviours that elicits positive emotional experiences which then becomes perpetuated. Garland and Fredrickson (2013) suggest that this process facilitates the development of resilient self-beliefs. In view of this it can be expected that a capacity for psychological flexibility would be associated with resilience and adaptive functioning, through which a person is more likely to reengage with healthy pursuits and so experience fewer symptoms of distress and greater life satisfaction and vitality.

In support of the relevance that psychological flexibility has in the context of cultivating resilience to psychological suffering, Thompson, Arnkoff and Glass (2011) reveal that people who exhibit mindfulness and acceptance are more likely to

show resilience through effective psychological adjustment following a traumatic event. Conversely, avoidant psychological strategies were found to be associated with the maintenance of severe PTSD symptoms. Thompson et al (2011) suggest that acceptance and mindfulness processes are advantageous in breaking the patterns of PTSD symptoms. It is suggested that resilience can be usefully viewed as a learned capacity that is a part of an interactive process between contextual environmental circumstances and emotional regulation strategies that has a beneficial influence of psychological health (Rutter, 1985: Weinstein and Ryan, 2012: Herrman et al, 2011).

However, Gregoire et al (2012) highlight that the relationship between mindfulness and the basic psychological needs remains an understudied area (Gregoire et al, 2012). As previously described, psychological flexibility expands upon processes of mindfulness, to contextualise these processes in relation to an awareness of, and a commitment to valued action (Hayes et al, 2012). Therefore, as well as expecting psychological flexibility to be associated with basic psychological needs satisfaction, it is expected that psychological flexibility is also associated with intrinsic goal pursuits and resilience. Additionally, it can be expected that psychological flexibility may have an indirect influence on psychological health through the satisfaction of the basic psychological needs, intrinsic goal pursuits and resilience.

With regard to the first line of enquiry regarding SDT, identifying whether satisfying the basic psychological needs, engaging in intrinsic and extrinsic goal pursuits is associated with resilience, may highlight the functional capacity of these components. With regard to the second line of enquiry, conducting preliminary research to explore whether a capacity for psychological flexibility is associated with

the satisfaction of the basic psychological needs, engagement in meaningful goals and resilience, may demonstrate the different ways in which this capacity is conducive to optimal functioning. Moreover, investigating whether psychological flexibility has an indirect influence on psychological health through the satisfaction of the basic psychological needs, intrinsic and extrinsic goal pursuits and resilience may highlight the different mechanisms through which psychological flexibility is conducive to psychological health. As well as, identifying how ACT (e.g. Hayes et al, 2012) and SDT (e.g. Ryan and Deci, 2000) approaches can be expanded upon to better understand how these components are affiliated with psychological health. Accordingly, the research questions and hypotheses are presented. Following this, the method and results are described.

2.6 Research Questions and Hypotheses

Research Question 1) Are the psychosocial constructs of basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience related?

Hypothesis 1: Basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience will be positively correlated.

Research Question 2) Are the psychosocial constructs of basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience independently related to psychological health?

Hypothesis 2: Basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience will positively correlate with outcomes of psychological health including fewer symptoms, vitality and life satisfaction.

Research Question 3) Does psychological flexibility relate to the psychosocial constructs of basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience?

Hypothesis 3: Psychological flexibility will positively correlate with basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience.

Research Question 4) Does psychological flexibility relate to outcomes of psychological health including fewer symptoms, vitality and life satisfaction?

Hypothesis 4: Psychological flexibility will positively correlate with outcomes of psychological health including fewer symptoms, vitality and life satisfaction.

Research Question 5) Independently do the constructs of basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience mediate the relationship between psychological flexibility and psychological health (including fewer symptoms, vitality and life satisfaction)?

Hypothesis 5: Basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience will mediate the relationship between psychological flexibility and each

outcome of psychological health, (including fewer symptoms, vitality and life satisfaction)

2.7 Operational Definitions

Psychological flexibility: The ability to willingly tend to uncomfortable or unwanted internal events, such as thoughts, feelings, memories, images or physical sensations and commit to valued actions (Hayes et al, 2012a).

Basic psychological needs satisfaction: Basic psychological needs satisfaction refers to the perceived fulfilment of three innate needs for 1) autonomy; meaning a felt sense of having personal volition and control over ones' choices and actions 2) competence; meaning a sense of self-efficacy within different environmental domains where skills and abilities have a platform to be expressed and enhanced and 3) relatedness; meaning a sense of love, support, belongingness and security that is reciprocated within important relationships (Deci and Ryan, 2001).

Intrinsic goals: Intrinsic goals are defined as meaningful, non-materialistic pursuits that are of direct benefit to psychological growth and personal development. These include having authentic relationships with others, learning, contributing to the community (Kasser and Ryan, 1996).

Extrinsic goals: Extrinsic goals are defined as pursuits that are of an externalised reward that tend to be materialistic and are less likely to contribute to personal growth. These include fame, having material wealth and being attractive to others (Kasser and Ryan, 1996).

Living in accordance with intrinsic or extrinsic values: Living in accordance with intrinsic or extrinsic values reflects the extent to which a person has accomplished goals that are of intrinsic or extrinsic value to them.

Resilience: Resilience is viewed as a set of functional attitudes towards cognitive, emotional and social aspects of functioning in the face of challenging situations. This includes the following qualities: hardiness, identifying goals or purpose, action orientation, self-belief, social problem solving skills, humour, patience and adaptability (Connor-Davidson, 2003).

Psychological health outcomes: Psychological health outcomes refer to different means of evaluating psychological experience in relation to the aforementioned components affiliated with optimal functioning. These include, feelings of vitality, life satisfaction and the absence of psychological symptoms of distress.

3. Method

3.1 Design

In light of the aim to explore the relationships between the theoretical constructs from Hayes et al's (2012) ACT, specifically psychological flexibility and Ryan and Deci's (2000) SDT, specifically, basic psychological needs satisfaction, type of goal pursuits and resilience, in addition to their relationship to psychological health outcomes (i.e. fewer symptoms, vitality and life satisfaction), a within-person cross-sectional design was used. First, due to the exploratory nature of the research aims, a correlational design was used as an initial step to test Hypotheses 1-4, with the intention to establish whether the aforementioned constructs were related to each other and to what extent.

Whilst using a correlational design provides basic information regarding the presence of relationships between two of each of the variables (i.e. psychological flexibility, basic psychological needs satisfaction, type of goal pursuits, resilience and psychological health outcomes), to further this line of enquiry a simple mediation regression design, using OLS pathway analysis was used in order to test Hypothesis 5: To establish the extent that basic psychological needs satisfaction, type of goal pursuits (i.e. intrinsic and extrinsic) and resilience act as mediators in the relationship between psychological flexibility, the antecedent variable and the outcome variables of psychological health; fewer symptoms, vitality and life satisfaction.

It is recognised that a limitation of using mediation analysis is that the placement of the constructs represents an arbitrary causal sequence between the antecedent, mediator and outcome variables, of which there are a number of alternative compositions (Roe, 2012; Frazier, Baron and Tix, 2004). However, for the

purpose of this research, psychological flexibility was consistently placed as the antecedent variable. This was decided on the basis that according to the ACT model, psychological flexibility is a psychological process and capacity that enables people to willingly experience internal experiences (i.e. thoughts, feelings, images, memories) in a way that enables people to adopt an active approach resulting in valued engagement within the environment and life domains (e.g. work, leisure pursuits, interpersonal relationships) (Ciarrochi et al, 2010). Additionally, evidence from longitudinal research suggests that cultivating psychological flexibility predicts improved functioning and psychological health over a period of time, of which the reverse relationship was not supported (e.g. Hayes et al, 2006; Bond and Bunce, 2003).

Given that SDT posits that the psychosocial constructs including, the satisfaction of the basic psychological needs, the importance and attainment of goal pursuits and resilience, represent engaged interactions within environmental domains (Ryan and Deci, 2001; Vansteenkiste and Ryan, 2013), the present research aims to expand the current literature by exploring whether these mechanisms act as mediators or third variables through psychological flexibility has an influence psychological health outcomes.

However, as highlighted by Roe (2012) conducting a mediation analysis in this way does not give evidence of a temporal relationship between the constructs, that is, inferences cannot be made about the influence each variable has on the other across time. Additionally, as suggested by Roe (2012) it is also possible to designate the antecedent, mediator and outcome variables alternately to the chosen arrangement,

the implications of this are examined within the discussion and the limitations of using a cross-sectional design are addressed.

Never the less, using a simple mediation analysis was deemed appropriate for the purpose of the preliminary exploratory research aims, above using a hierarchical multiple regression design. Whilst using a hierarchical multiple regression design allows researchers to observe the accumulative and independent effects of multiple independent variables on an outcome variable (Field, 2013), using a simple mediation analysis was more appropriate for the research aim to test whether SDT components explain the relationship between psychological flexibility and psychological health; to obtain a greater understanding about how psychological flexibility is associated with outcomes of psychological health.

It is acknowledged that structural equation modelling (SEM) offers a constructive alternative method to explore the effect of multiple mediators, antecedent variables and outcome variables that can be applied longitudinally (Frazier et al, 2004). However, this method was deemed too complex for the preliminary research aim, to first address and better understand the independent mediating relationships between the constructs. Additionally, using an SEM design was considered to be beyond the remit of the time constraints of the present research, although it is highlighted as a beneficial avenue to further this line of research within the discussion (Frazier et al, 2004).

3.2 Participants

A non-clinical community sample of participants were recruited using a purposive sampling technique. A non-clinical sample would be expected to reveal a variation of levels of psychological flexibility and therefore provide a more

meaningful understanding of how this capacity relates to the psychosocial constructs (i.e. basic psychological needs satisfaction, type of goal pursuit and resilience), as well as, outcomes of psychological health (i.e. fewer symptoms, vitality and life satisfaction).

Participants were recruited via a personal social networking website and five psychology research websites. As well as requiring access to the Internet, other inclusion criteria required that participants were over the age of 18, in order to give informed consent. Participants were also required to read and write in English. The exclusion criteria included being under the age of 18. It is recognised that using a purposive sampling technique limits the extent to which the sample is representative of the population. The participants who were recruited are likely to have an awareness and interest in psychology research, be well educated and be of a higher socio-economic background. Although this is a limitation of the current research it is tenable for the preliminary research aims of the study (Bryman, 2004).

It is also notable that cases with missing data were excluded from the final analyses as incomplete cases can indicate withdrawal of participation (BPS, 2013). Following the handling of missing data, 191 cases were included in the final analyses (f=122, m= 69). The age ranged from 18 to 72 years old, although the sample was young, with a mean age of 28 years old (SD=9.29). The majority of the participants were employed (62.8%), almost one quarter were students (22.5%) and a notable percentage were unemployed (14.7 %). Therefore, the extent the sample is representative of the population is recognised as a limitation to the generalizability of the findings (Bryman, 2004).

3.3 Handling Missing Data

The following section addresses the methods used to manage missing data (Schlomer, Bauman and Card, 2010). There is a lack of agreement regarding the percentage of missing data that causes bias within statistical analyses (Schlomer et al, 2010). Suggestions have ranged from 5% (e.g. Schafer, 1999) to 20% (e.g. Peng et al, 2006). In the current research a total of 15.1% of data were missing from the original sample of 225 participants. The univariate statistics show that the percentage of missingness increased from approximately 0.5% on the AAQII, the first measure presented in the survey, to approximately 15.5% on the SWLS the final measure, SWLS. For the most part, whole measures rather than individual items had been omitted. The pattern of participant attrition could be attributed to boredom or fatigue and a design limitation, which omitted the use of an indicator of participants' progress through the questionnaire. In total, 34 cases data were missing, with a remaining 191 completed cases.

Little's Missing Completely at Random statistical analysis was conducted to test whether the data was missing at random. A Chi-Square analysis revealed this was non-significant (C^2= 2885.761, (1, N=224) = 2817, p= .179) indicating that the data was missing at random and not because of an association with the constructs under investigation. Further analyses were conducted to see if participant drop out was associated with participant variables such as gender, employment and age.

First, a Chi square statistical test was carried out to see if there was a significant difference between males and females drop out rate. The analysis showed no significant difference between male and female participants drop out rate (C^2 (1, N=224)= .052, p = .819). This indicated that the participant attrition rate could not be

attributed to gender. No significant difference was found between missing data and whether people were employed or not (C^2 (1, N=244) = .188, p=. 665). An independent samples t-test was conducted to explore the effect of age on attrition rate. The results revealed that there was no significant difference in age and missing (M= 27.82, SD = 12.79) and non-missing cases (M= 27.93, SD = 9.29), t(244)=.45, p=.103).

No association was found between participant variables and missing data, supporting the finding that the data is missing at random. Based on this information and the Little's MCAR analysis, it was concluded that the drop out rate was not related directly to the theoretical constructs included in the study. Therefore, the data can was deemed to be Missing at Random (MAR) as opposed to Missing Completely at Random (MCAR). In view of the observed exponential increase of missing data for each subsequent scale it is likely that this can be attributed to reasons beyond the variables of the study, for example, drop out through boredom fatigue, distraction.

One perceived limitation to the questionnaire design was that the psychological health outcome variables were placed at the end of the questionnaire. These variables accrued the largest amount of missing data and yet were crucial to testing the hypotheses. Therefore, to manage the missing data (15.1%), it was decided that completed cases would make an appropriate inclusion criteria, in favour of adding post hoc inclusion and exclusion criteria such as, a cut off percentage (e.g. 70% of data should be completed to be included for each case), as this is arbitrary and could add a bias to the results. In view of this, completed cases were used as the indicator variable for inclusion criterion (n=191) and incomplete data were excluded from the data set (n=34). Subsequent analysis revealed that the remaining missing

data for each variable did not exceed 1% and although this is negligible it needs to be handled (Schlomer et al, 2010).

Strategies for replacing missing values were considered. Non-stochastic methods were not appropriate as this uses mean substitution when the data is MCAR (Schlomer et al, 2010). Similarly, imputing values based on regression substitution was considered problematic because when conducting regression analyses the results could pick up patterns attributed to the regression method of imputing data, which introduces a bias in the variance and co-variance outcomes. Finally a stochastic imputation method; Expectation maximization was used for all variables (except vitality and general health, as they had no missing values) as it uses a maximum likelihood strategy based on the parameters of the data to approximate the missing values. This approach has been favoured in comparison with the non-stochastic approaches as a practical and more powerful approach (Schlomer et al, 2010).

3.4 Theoretical Variables and Measures

Participants were asked to complete the following self-report measures in the order they are presented below. The reliability and validity of each measure is examined in relation to prior research and analyses conducted as part of the current research.

1. Psychological Flexibility- *10 item Acceptance and Action Questionnaire II (AAQ II)* (Bond, Hayes, Baer, Carpenter, Orcutt, Waltz and Zettle, submitted for publication).

The ten-item AAQ-II has been shown to be a uni-dimensional measure of psychological flexibility, which pertains to the ability to willingly experience

unwanted internal events and the ability to engage valued actions despite unwanted internal experiences (McCracken and Zhao-O'Brien, 2010; Bond, Hayes, Baer, Carpenter, Guenole, Orcutt and Zettle, 2011). For the purpose of this study, the seven negatively scored items from the ten-item AAQII were scored positively to measure psychological flexibility; high scores represent a greater capacity for psychological flexibility, whereas lower scores indicate a tendency for psychological inflexibility (see Appendix 1). Participants rate the degree to which they conform to ten statements such as; "It is ok if I remember something unpleasant", " My painful experiences make it difficult for me to live a life that I would value", "Worries get in the way of my success", responses are scored using a 7 point Likert Scale ranging from 0= 'never true' to 7= 'always true'.

The ten-item AAQ-II was chosen above the 9 and 16-item AAQ which have identified weaknesses pertaining to first, the finding that these have revealed both unidimensional and multidimensional factors respectively, as well as, having just adequate internal consistency (Cronbach alpha =.70) (Hayes et al, 2004; Chawla and Ostafin, 2007; Bond and Bunce, 2003). The findings by Bond and Hayes et al (2011) from seven samples (total n= 3280) suggest the ten-item AAQII is a reliable and valid tool. Bond and Hayes et al (2011) found the mean α=.83 ranged from α= .76 to α= .87 across the samples, indicating a confident level of internal consistency. The test re-test reliability within a community sample was strong at a three month (α= .80) and one year follow up (α= .78). The ten-item AAQ II revealed a high level of convergent validity with the original AAQI (r= .82, p< .05) (Bond and Hayes et al, 2011). Within a sample of patients with chronic pain, the ten-item AAQII measure of psychological flexibility has be found to predict functioning over and above mindfulness. Additionally, convergent validity has been found between the ten item-

AAQII measure of psychological flexibility and theoretically related constructs such as pain related anxiety, depression and mindfulness (McCracken and Zhao-O'Brien, 2010).

As would be expected, non-clinical samples have been found to show lower levels of psychological inflexibility (that is greater psychological flexibility) (M=21.22, SD=7.76), compared with clinical samples (M=32.64 SD=9.12) (Ruiz, Herrera, Luciano, Cangas and Beltrán, 2013). Similarly, McCracken and Zhao-O'Brien (2010) found that patients experiencing chronic pain reported a lower level of psychological flexibility (M=38.57 SD=13.05), compared to Bond and Hayes et al (submitted) findings from a non-clinical sample (M=50.72, SD=9.19).

Although the ten item AAQII has been found to be a reliable and valid measure, a 7-item version of the AAQII has been developed by Bond, Hayes, Baer, Carpenter, Guenole, Orcutt and Zettle (2011) who found that the three positively worded items were superfluous. However, based on their findings, Bond et al (2011) suggest that although the ten-item version is not the most recent, it is reliable and valid comparably to the 7-item version.

2. Basic psychological needs satisfaction- *Basic Psychological Need Scale (BPNS)* (La Guardia, Ryan, Couchman and Deci, 2000)

The BPNS was included to measure overall basic psychological needs satisfaction, which is inclusive of each subcomponent of autonomy, competence and relatedness (see Appendix 2). The BPNS has a total of 21 items. Items pertain to each subcomponents including autonomy; e.g. "I feel like I am free to decide for myself how to live my life," competence; e.g. "Often I do not feel very competent" and relatedness; e.g. "I really like the people I interact with". Participants are asked to rate

the degree to which each item holds true using a 7 point Likert scale ranging from 1= not at all true to 7= very true.

Research by La Guardia et al (2000) indicates that BPNS is a valid measure that has convergent validity with outcomes of psychological health and life satisfaction. It is a reliable measure that has been validated across cultures (Deci and Ryan et al, 2001), time spans (Reiss et al, 200) and samples to study different life domains i.e. relationships and work domains (La Guardia et al, 2001; Deci and Ryan et al, 2001; Kashdan and Breen, 2007)). Deci and Ryan et al (2001) and La Guardia et al (2000), found the BPNS to have Cronbach Alpha values of .83 and .89 respectively, indicating a high level of internal consistency. The test-retest reliability of supports the reliability of each subcomponent across time: autonomy, α= .72 at Time 1, α= .73 at Time 2, competence, α= .73 at Time 1 and Time 2, relatedness, α= .82 at Time 1 and α= .83 at Time 2, suggesting strong reliability (Gagñe, 2009).

3. Intrinsic & Extrinsic Goals and Aspirations – *Aspirations Index (AI)* (Kasser and Ryan, 1996)

The AI is made up of four intrinsic aspiration categories (i.e. personal growth, relatedness, community involvement and physical health) and three extrinsic aspiration categories (i.e. fame, wealth and appearance) (Kasser and Ryan, 1996). Participants are asked to rate on a 7 point Likert scale, the extent to which each goal is of perceived importance, the degree to which the goal is current attainment and the perceived likelihood the goal will be attained in the future. There are a total of 35 life goals (5 for each domain). Since then, four additional domains have been included in the AI (Grouzet and Kasser et al, 2005).

However, in order to reduce the length of the questionnaire participants were only asked to rate the perceived importance and current level of attainment of each goal. Tim Kasser, the developer of the AI suggests: "You do not have to use all of the 11 domains, and can mix and match if you desire; I have certainly done that in my work. I do recommend, however, that you use the whole AI if possible, for it gives the fullest description of a person's goal system. If this is not possible, I would recommend using goals that come from different areas of the circumplex."

In view of this, six intrinsic goals and six extrinsic goals were included in the questionnaire, two goals were drawn from the same domains used by Martos and Kopp (2012), these domains included relatedness, psychological growth, community feeling, wealth, fame, attractiveness (see Appendix 3). The intrinsic goals included items such as, "To grown and learn new things", "To have deep and enduring relationships" and "To help others improve their lives." The extrinsic goals included items such as, "To be a very wealthy person", "To be famous" and "To have people comment on how attractive I look". Niemiec et al (2009) have shown strong internal consistency for the items pertaining to the importance α = .84-.92 and attainment α=.77-.89 of the goal domains mentioned above.

4. Resilience- *Connor-Davidson Resilience Scale (CD-RISC)* (Connor and Davidson, 2003)

The CD-RISC is a 25-item measure of resilience. Resilience is reflected by attitudes pertaining to hardiness, purposeful action, self-belief, social problem solving skills, humour, patience, tolerance and adaptability. Items include statements such as; "I am able to adapt to change" " When things look hopeless, I don't give up" and " I think of myself as a strong person." Each item is rated on a 5 point Likert scale with

scores ranging from 0-4, higher scores indicate a greater capacity for resilience (see Appendix 4).

In a study by Connor-Davidson (2003) the measure was been tested across different samples. Strong internal consistency was found within a non-clinical community sample (α= .89). In two samples of participants with GAD symptoms and PTSD symptoms the test re-test reliability indicated no observed change and an intra-class coefficient of 0.87 to indicate strong reliability.

5. Fewer Symptoms – *General Health Questionnaire 12 (GHQ12)* (Goldberg and Williams, 1988)

The GHQ12 was included as it is a widely used and established measure of psychological symptoms (Hayes et al, 2006). In this study lower scores reflect a greater level of experienced symptoms of distress and higher scores reflect fewer psychological symptoms (see Appendix 5). It was designed as a screening tool for cases of psychiatric illness, namely anxiety and depression (Goldberg and Bridges, 1985). The GHQ12 is a twelve-item, participants are asked to rate the degree of psychological distress symptoms experienced over the past few weeks. These include symptoms of anxiety, depression, social dysfunction and somatic symptoms.

Examples of items include "Have you been able to concentrate on what you are doing?" "Have you been able to enjoy your normal day-to-day activities?" "Have you been feeling unhappy and depressed?" "Have you been thinking of yourself as a worthless person?" Participants can respond to each statement with the following choices: 0= "much less than usual", 1="the same as usual", 2="more than usual" and 3="much more than usual". Possible scores range from 0-36. The GHQ12 has been found to show sufficient internal consistency (α= .78) (Goldberg et al, 1997).

6. Vitality – *The Subjective Vitality Scale (SVS)* (Ryan and Frederick, 1997)

The SVS measures the present moment experience of vitality (see Appendix 6). The SVS includes 7 items, participants are asked to respond to each statement on a 7 point Likert Scale ranging from 1= not at all true, to 7 = very true. The items include " I feel alive and vital", " I don't feel energetic", "Sometimes I feel so alive I just want to burst" and "I look forward to each new day".

Ryan and Frederick (1997) found the scale to reveal strong internal consistency (α= 0.84). The SVS shows convergent validity and positively correlates with measures of wellbeing that include self-actualisation, self-esteem and life satisfaction (ranging from r= 0.42 to 0.76). The SVS shows divergent validity and negatively correlates with measures of psychopathology, depression, negative affect and anxiety (r=-.25 to -.60) (Ryan and Frederick, 1997). In a study of two samples, Bostic, McGarland, Rubio and Hood (2000) found comparable reliability of the measure to Ryan and Frederick's (1997) findings (α= .8, α= .89). All items revealed factor loadings above .60 (Bostic et al, 2000).

7. Life Satisfaction – *Satisfaction With Life Scale (SWLS)* (Diener, Diener, Emmons, Larsen and Griffin, 1985)

The SWLS is a uni-dimensional measure of overall life satisfaction (Slocum-Gori, Zumbo, Michalos, and Diener, 2009). The SWLS includes 5 items, such as " In most ways my life is close to my ideal" and "So far I have gotten the most important things in life." Participants are asked to rate on a 7 point Likert scale the degree to which each statement represents their experience, ranging from 1= I strongly disagree to 7= I strongly agree (see Appendix 7). In a study of a Spanish sample Romero, Gómez-Fraguela and Villar (2011) have found the SWLS to have convergent validity,

with theoretically related constructs including intrinsic goal attainment global subjective wellbeing, and the internal consistency of the scale has been shown to be sufficiently high (α= .78).

3.5 Procedure and Ethical Considerations

In accordance with the BPS ethical guidelines for research with human participants (2010), and the BPS (2013) ethical guidelines for internet-mediated research the following steps were taken to maximize participants' awareness of being involved in the research. These followed the agreed proposal criteria, which was given ethical approval by the University of the West of England (see Appendix 8). Participants were recruited from a social and psychology research networking sites. They were given a brief outline of the research and for which they could volunteer to take part by following a link to an external website page provided by Qualtrics. Qualtrics is online research tool specifically designed to manage data securely online. Qualtrics provides a statement of security to protect online data and therefore, in accordance with the BPS guidelines (2013) was chosen above the use of email as a means of distributing the questionnaire and receiving participant information and data to ensure participant confidentiality and anonymity to the highest degree.

Using Qualtrics enabled the researcher to design the web pages for the purpose of the research. Accordingly, participants were first given a detailed and simple introduction to the study on the first webpage to ensure relative transparency and avoid deception (BPS, 2011, 2013). Participants were informed the researcher was carrying out the research for the purpose of a doctoral thesis at the University of the West of England (see Appendix 9), as well as, providing information about the objectives and content of the online questionnaire (BPS, 2013). Participants were

made aware that they would be asked to complete a series of questionnaires about how they manage their internal experiences, how they perceive themselves with respect to different aspects of their lives and how they perceive their wellbeing.

Additionally, in accordance with BPS (2011, 2013) ethics, participants were given information about the potential benefits and risks of taking part prior to giving consent. It was suggested that taking part could increase participants' awareness but that is could also affecting to reflect on their experiences. Given that conducting internet-mediated research reduces the control researchers have over participants' responses to the study, information was given for nation wide agencies that offer emotional support, such as Mind or the Samaritans (BPS, 2013), as well as, contact emails for the researcher and research supervisors.

Participants were also made aware that data included in any means of disseminating the findings (e.g. doctoral thesis, journal articles) would be anonymous, which is an advantage to conducting quantitative research (BPS, 2013). The BPS (2013) highlight that utilizing a research tool such as Qualtrics to research quantitative data minimizes the risk of tracing or revealing identifiable information. Information was also given detailing the action to be taken to uphold confidentiality and it was emphasised participants could withdraw from the study two weeks after taking part (BPS, 2011, 2013).

Furthermore, in accordance with the BPS guidelines (2013), to ensure formal informed consent was given, the webpage to the questionnaire only appeared once participants had ticked all individual check boxes. Participants were asked to confirm and they understood and agreed; a) the information provided in the introduction information sheet b) all information would remain anonymous and confidential,

participants could choose to give their name, email address or a password (for full anonymity) for the purpose of withdrawal from the research, d) they could withdraw from the study within two weeks of its submission, e) they were over the age of 18 e) they consent to take part in the study (see Appendix 10). It is acknowledged that conducting internet-mediated research reduces the extent the researcher can control for this, therefore in accordance with the BPS (2013) guidelines, the research was considered appropriate enough for participants aged 16 plus.

Additionally, a participant number was assigned to each case and was kept in a separate password protected file that was only available to the researcher. Following this, participants could begin the questionnaire, which included seven measures that were each presented on a new webpage. In further compliance with the BPS ethical guidelines (2013), participants were given a debrief information sheet following the completion of the questionnaire. This gave participants an opportunity to give feedback, obtain a more comprehensive account of the research aims and the constructs under study, as well as, information for further reading (see Appendix 11). Information to seek out emotional support was also included on the debrief sheet (BPS, 2013). Following this, the data were collected using Qualtrics and was subsequently transferred to SPSS. SPSS version 19 was used to conduct the correlation analysis. Hayes (2013) PROCESS tool was downloaded and integrated into SPSS to carry out the simple mediation regression analysis using OLS pathway analysis and the bootstrap method.

3.6 Data Analysis and Analysis Strategy

Through an observation of scores for skew and kurtosis psychological flexibility scores were positively skewed with a platykurtic distribution. Overall basic

psychological needs satisfaction showed close to normal skew with a leptokurtic distribution. The scores for competence satisfaction and relatedness satisfaction were slightly positively skewed but showed evidence of a leptokurtic distribution. Autonomy satisfaction scores showed relatively normal skew and kurtosis, although these were slightly negative for both. Resilience scores revealed a negative skew and leptokurtic distribution. Scores for extrinsic goal importance showed a negative skew but with close to normal kurtosis. Extrinsic goal attainment scores revealed a slightly positive skew with a slight leptokurtic distribution. Intrinsic goal importance scores revealed a slightly negative skew with a leptokurtic distribution. Intrinsic goal attainment scores were close to normal skew but with a platykurtic distribution. Fewer psychological symptom scores were positively skewed with a leptokurtic distribution. Vitality scores were nearly normal with a platykurtic distribution and finally, life satisfaction showed a slightly negative skew with a platykurtic distribution.

However, the results from the Komorogov-Smiroff (KS) test indicated that the following constructs; psychological flexibility ($D(191)=.06$, $p=.06$), autonomy satisfaction ($D(191)=.06$, $p=.20$), intrinsic goal attainment ($D(191)=.0.6$ $p=.20$), did not deviate significantly different from normal. Whereas overall basic psychological needs satisfaction ($D(191)=.07$, $p<.05$), competence satisfaction ($D(191)=.08$, $p<.01$), relatedness satisfaction ($D(191)=.10$, $p<.001$, resilience ($D(191)=.08$, $p<.01$), intrinsic goal importance ($D(191)=.192$, $p<.001$), extrinsic goal importance ($D(191)=.08$ $p<.01$), extrinsic goal attainment ($D(191)=.130$, $p<.001$), revealed significantly non-normal distribution of scores. This finding was also found for the psychological health outcomes including, fewer psychological symptoms ($D(191)=.12$, $p<.001$), vitality ($D(191)=.07$, $p<.05$) and life satisfaction ($D(191)=.08$, $p<.01$), which also revealed significantly non-normal distribution of scores.

However, in larger samples with over 100 cases, as is true within the current sample (n=191), Field (2013) suggests that the KS test is sensitive and therefore is more likely to show significant outcomes to indicate that the distribution is significantly different from normal when it is not deviate substantially. Field (2013) suggests that a visual examination of the of the QQ plots from the SPSS output to be a sufficient indicator or normality within larger samples. Accordingly, it was observed that the scores from all variables were closely aligned to a normal distribution (see Appendix 15).

It is notable that outliers were present for the following constructs: psychological flexibility, basic psychological needs satisfaction, competence satisfaction, relatedness satisfaction, resilience, intrinsic goal importance, extrinsic goal importance and attainment, and fewer psychological symptoms. However, these outliers were not managed. Through observation it could be seen that the mean scores were comparable to the trimmed mean scores and lie within the lower and upper bound of the 95% confidence internals. However, this is recognised as a limitation that could introduce bias within the results and is discussed further within the discussion.

Based on the visual examination of the QQ plots and the finding that mean scores lie within 95% confidence intervals, Pearson's correlation coefficient was chosen to test Hypotheses 1-4. Bishara and Hittner (2012) highlight there has been debate about the advantages and disadvantages of using Pearson's correlation coefficient, a parametric test versus the use of Spearman's rank correlation coefficient, a non-parametric test when the variables may have mixed normally and non-normally distributed scores. Hauke and Kossowski (2011) argue that Pearson's

correlation coefficient is preferable to Spearman's rank correlation coefficient. They suggest that although Spearman's rank coefficient does not require the assumption of normality to be met, it assesses the probability of the relationship between two variables, whereas Pearson's measures the strength of the linear relationship between two variables.

Notably, in a simulation study, Hauke and Kossowski (2011) found that Spearman's correlation coefficient showed positive relationships when Pearson's correlation coefficient showed negative relationships between two variables. Hauke and Kossowski (2011) argue that Pearson's is preferable to avoid over-interpreting the results and making a Type 1 error. Additionally, given that some variables were not statistically different from normal, transforming the data to manage non-normal distribution could create skew (Field, 2013). As suggested by Field (2013) this method of analysis is robust enough when the data appears to be approximately normally distributed. The view that Pearson's correlation is robust to violations of normality has been supported by a number of researchers (Duncan and Layard, 1973; Havlicek and Peterson, 1977). Additionally, it is notable that conducting Pearson's correlation to observe the magnitude of the effects, according to Cohen's (1988) effect size parameters, was an initial exploratory step to explore the relationships between the constructs and therefore is tenable under these circumstances.

For the second part of the research, a simple mediation regression analysis was conducted using OLS pathway analysis with the bootstrap method to test the presence of indirect effects to test Hypothesis 5; to explore whether independently the psychosocial constructs (i.e. basic psychological needs satisfaction, type of goal pursuits and resilience) mediated the relationships between psychological flexibility

and each outcome measures of psychological health including, fewer symptoms, vitality and life satisfaction. The bootstrap method was chosen on the basis that it is the most robust technique, regardless of sample size, for detecting a medium to large effect size. The bootstrap method transforms the data through re-sampling and is robust to violations of normality and the influence of outliers (Field, 2013).

Notably, the final sample of 191 participants is justifiable for the aims and remit of the current research. As previously highlighted, Field (2013) suggests a sample size of over one hundred is substantial enough to be robust to slight violations to normality. Similarly, according to Fritz and MacKinnon's research (2007) the bias-corrected bootstrap method is the most powerful mediation analysis technique for comparable sample sizes when compared to Baron and Kenny's (1986) approach and Sobel's test. Zhang and Wang (2008) found that with a sample of size of 100, the bootstrap method was the most powerful within the 95% confidence intervals with a power of .0698 to detect a small effect size based on a resample of 1000. Fritz and McKinnon's (2007) found that a sample size of 148 is required to reveal an indirect effect of .26 (medium) at the power of.8, and a sample of 368 to reveal an indirect effect of .14 (small) at the power of .8 based on Cohen's (1988) effect size parameters. Therefore, this research justifiably used a sample of 191 and a resample of 5000 to increase the power of the bootstrap test of indirect effects within 95% confidence intervals.

4. Results

4.1 Internal Reliability and Descriptive Statistics

The internal reliability, mean scores and standard deviations are presented for each measure in Table 1.1. In the current research the AAQII measure of psychological flexibility produced α= .89 indicating a high level of internal reliability. Comparable to the previous findings of a community sample (e.g. Bond and Hayes et al, 2011), the mean sample score was 47.64 (SD=10.9) and the individual mean score was 4.76 (SD=1.09). As expected, this reflected a higher level of psychological flexibility compared with clinical samples such as those experiencing chronic pain (e.g. McCracken and Zhao-O'Brien, 2010) and Bond and Hayes et al (2011) finding from a clinical sample of those seeking treatment for substance abuse (M=39.80).

The BPNS revealed high internal reliability for overall basic psychological need satisfaction (α=.87) and the relatedness subscale (α=.85), weaker but just sufficient reliability was observed for the autonomy (α.=67) and competence subscales (α= .70). The mean total scores for each subscale autonomy (M=34.24, SD= 6.06), competence (M=29.44, SD=6.72) and relatedness (M=40.28, SD=6.85) were comparable to Wei et al's (2005) findings from a non-clinical sample (autonomy: M=35.33, SD= 5.71; competence: M=30.25, SD=5.60; relatedness: M=45.38, SD=7.34) The individual mean score was 5.14 (SD= .802) was notably higher than the individual mean scores found by Deci et al (2001), this may be attributed to the samples being recruited within a work context Bulgaria (M=3.79, SD=0.54) and the US (M=3.59, SD=0.65).

The items used from the AI revealed strong internal reliability for the importance of extrinsic goals (α=.79), the attainment of extrinsic goals (α=.86), the importance of intrinsic goals (α=.79) and the attainment of intrinsic goals (α=.86). The mean individual score for the importance placed on extrinsic goals was M= 3.39 (SD = 1.38), this is comparable to Romero et al's (2011) finding in a non-clinical sample (M=3.61, SD=1.02). Similarly, the mean individual score placed on the importance of intrinsic goals was M=6.28 (SD=1.15), which is also comparable to Romero et al's (2012) research findings (M=6.29, SD=0.86).

The mean individual score for extrinsic goal attainment was M=2.36 (SD=1.15), which is similar to that of Romero et al (2011) who found M=2.71 (SD=0.85). The mean individual score for intrinsic goal attainment was comparable but slightly lower M=3.97 (SD=1.27) that than the finding of Romero et al (2011) (M=4.64, SD=0.86). Additional composite variables were created to measure the extent to which participants live according to intrinsic and extrinsic values. To accomplish this, perceived goal importance was multiplied by the perceived attainment. Through observation it can be sent hat on average the sample lived in accordance with intrinsic values M=25.2 (SD=9.32) to a higher extent extrinsic values M=8.5 (SD=6.42), although this difference was not tested for significance.

In the current research, the CD-RISC produced a high level of internal reliability (α= .91). The sample mean score was 66.17 (SD=14.85). Although this score is higher than a sample of patients with GAD patients (M=47.8, SD=19.5), this is observably lower than Gomez, Vincent and Toussaint's (2013) finding of a non-clinical community sample (M=73.63) and Connor and Davidson's (2003) findings from a non-clinical sample (M=80.4, SD=12.8).

The GHQ-12 revealed a high internal reliability (α= .89). The mean total score was 17.26 (SD=6.53) and the mean individual score was 1.44 (SD= .544) (within a possible range of 0-3). This was comparable to Salama-Younes, Montazeri, Ismail and Roncin's (2009) finding in a non-clinical sample of older adults (M=17.4, SD=8.0). The SVS revealed α= .94 indicating a high level of internal reliability. The mean individual score of 3.70 (SD=1.57) and the mean sample score was 22.19 (SD=9.43) which was comparable to Salama-Younes et al's (2009) finding from a sample of older adults (M=22.4, SD=9.43) but lower than Kashdan's (2004) findings of a comparably younger sample of undergraduate students (M=30.90, SD=7.71).

Finally, the SWLS produced α= .86 indicating a high level of internal reliability. The mean total score was 21.55 (SD=7.21), which was comparable to Romero et al's (2011) findings from an undergraduate sample (M=23.65, SD=6.02). The mean scores and standard deviations for male and female participants are presented in Table 1.1. With the exception of competence satisfaction and intrinsic goal importance, it can be seen that males tended to score higher on each of the constructs compared to female. Although these differences were not tested for significance.

Table 1.1

	Gender				Total sample	
	Male (*N*=69)		Female (*N*=122)		(*N*=191)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Psychological flexibility (AAQII)	49.7	9.51	46.48	11.49	47.64	10.90
Basic psychological needs satisfaction (BPNS)	113.51	14.26	104.79	17.46	107.94	16.87
Autonomy satisfaction (BPNS)	36.19	5.46	33.14	6.13	34.24	6.06
Competence satisfaction (BPSN)	31.13	5.75	29.49	7.06	29.44	6.72
Relatedness satisfaction (BPNS)	41.9	6.45	39.37	6.93	40.28	6.85
Resilience (CD-RISC)	69.65	12.97	64.19	15.53	66.17	14.85
Extrinsic goal importance (AI)	17.18	6.72	16.84	7.2	16.96	7.01
Extrinsic goal attainment (A1)	15.35	8.00	13.53	6.16	14.19	6.92
Living in accordance with extrinsic values	9.11	6.26	8.16	6.23	8.5	6.24
Intrinsic goal importance (AI)	37.46	4.84	37.78	5.08	37.66	4.99
Intrinsic goal attainment (AI)	24.25	6.93	23.62	7.98	23.85	7.6
Living in accordance with intrinsic values	25.33	8.14	25.22	9.96	25.26	9.32
Fewer Symptoms (GHQ-12)	18.67	6.64	16.47	6.36	17.26	6.52
Vitality (SVS)	24.72	8.99	20.76	9.41	22.19	9.43
Life Satisfaction (SWLS)	21.65	6.98	21.49	7.37	21.55	7.21

4.2 Testing the Construct Validity of Psychological Health Outcomes

To test the construct validity of the outcome variables of psychological health a correlation analysis was conducted using Pearson's *r* coefficient. The correlations between fewer symptoms (GHQ-12), vitality (SVS) and life satisfaction (SWLS) were

examined to assess if they are related constructs. The results revealed strong effects between fewer psychological symptoms and vitality (r (189)= .63, p= .001), as well as, between life satisfaction and vitality (r (189)= .64, p= .001). A moderate effect was found between fewer psychological symptoms and life satisfaction (r (189)= .47, p= .001). This indicates that fewer psychological symptoms, vitality and life satisfaction are related components of psychological health.

4.3 Testing the Construct Validity of Basic Psychological Needs Satisfaction

According to Deci and Ryan's (2000) SDT the basic psychological needs for autonomy, competence and relatedness are independent and related components, which contribute to overall basic psychological needs satisfaction. Pearson's r coefficient was used to examine the relationships between each subcomponent (i.e. autonomy, competence and relatedness) and overall basic psychological needs satisfaction, the results are summarised in Table 1.2.

The results showed that strong correlations were observed between autonomy and competence satisfaction (r (189)= .53, p= .001), indicating that people who felt autonomous also felt competent. A moderate correlation was found between autonomy and relatedness (r (189)= .42, p= .001), suggesting that people who felt autonomous also felt they had supportive and loving relationships. Finally, the relationship between relatedness and competence revealed a moderate effect (r (189)= .40, p= .001), suggesting that people who felt a sense of relatedness also felt competent. Each subcomponent of autonomy (r (189)= .789, p= .001), competence (r (189)= .80, p= .001) and relatedness (r (189)= .78, p= .001) independently revealed strong positive correlations with overall basic psychological needs satisfaction. These findings show construct validity for Ryan and Deci's (2000) SDT.

4.4 Correlation Analyses to Test Hypotheses 1-4

Correlation analysis using Pearson's *r* coefficient was conducted to test Hypotheses 1-4. The following section presents each hypothesis and describes the corresponding results. The size of Pearson's *r* coefficients was determined according to Cohen's (1988) classification for small ($r<.1$), moderate ($r<.3$) and strong ($r<.5$) effects. First, a correlation analysis was conducted to test Hypothesis, the results are described below and summarised in Table 1.2.

Hypothesis 1. Basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience will be positively correlated.

1. The Correlation Results between Basic Psychological Needs Satisfaction and Goal Pursuits

Overall basic psychological needs satisfaction and intrinsic goal importance were positively correlated with a small effect (r (189)= .27, p= .001). This suggests that people who feel their basic psychological needs are satisfied also place importance on intrinsic goals. Competence satisfaction and intrinsic goal importance were positively correlated with a small effect (r (189)= .26, p= .001), while relatedness satisfaction was positively correlated with intrinsic goal importance with a moderate effect (r (189)= .31, p= .001). However, a very small correlation was found between autonomy satisfaction and intrinsic goal importance at a weak level of significance (r (189)= .01, p= .46). The results suggests that although autonomy satisfaction is not associated with placing importance on intrinsic goals, people who feel competent and related to others are likely to place importance on intrinsic goals. In the latter cases, the null hypothesis is rejected and Hypothesis 1 is accepted.

Overall basic psychological needs satisfaction was positively correlated with the attainment of intrinsic goals, with a strong effect (r (189)= .59, p= .001). Independently, autonomy satisfaction was positively correlated with the attainment of intrinsic goals with a moderate effect (r (189)= .42, p= .001), whilst competence satisfaction (r (189)= .55, p= .001), and relatedness satisfaction (r (189)= .43, p= .001), were positively correlated with the attainment of intrinsic goals with large effects. The results suggest that people who perceive their overall basic psychological needs to be satisfied, or who feel the independent needs for autonomy, competence and relatedness to be satisfied are also likely to attain intrinsic goals. Accordingly, the null hypothesis is rejected and Hypothesis 1 is accepted.

Overall basic psychological needs satisfaction was positively correlated with living in accordance with intrinsic values, with a strong effect (r (189)= .59, p= .001). Independently, autonomy satisfaction (r (189)= .37, p= .001) and relatedness satisfaction (r (189)= .46, p= .001) were positively correlated with living in accordance with intrinsic values, with moderate effects. Competence satisfaction was also positively correlated with living in accordance with intrinsic values, with a strong effect (r (189)= .55, p= .001). In line with these findings, the null hypothesis is rejected and Hypothesis 1 is accepted.

With regard to extrinsic goal pursuits, first it was found that overall basic psychological needs satisfaction (r (189)= -.06, p= .22), including each independent need for autonomy (r (189)= -.60, p= .20) and competence satisfaction (r (189)= -.07, p= .16) revealed non-significant correlations with extrinsic goal importance. The correlation between relatedness satisfaction and the importance of extrinsic goals was very small with a weak level of significance (r (189)= .002, p= .49). This suggests

that people who perceive their basic psychological needs to be satisfied do not place importance on extrinsic goals. Accordingly, the null hypothesis is accepted.

However, overall basic psychological needs satisfaction was positively correlated with the attainment of extrinsic goals, with a small effect (r (189)= .21, p= .001). Independently each subcomponent including autonomy satisfaction (r (189)= .13, p= .034), competence satisfaction (r (189)= .20, p= .001) and relatedness satisfaction (r (189)= .19, p= .001) revealed small significant correlations with the attainment of extrinsic goals. The results indicate that people who have their basic psychological needs satisfied also attain extrinsic goals. Therefore, the null hypothesis is rejected and Hypothesis 1 is accepted.

However, overall basic psychological needs satisfaction (r (189)=.12 p=.053), and each subcomponent of autonomy (r(189)=.08, p=.145), competence (r (189)=.11 , p=.062) and relatedness satisfaction (r (189)=.10, p=.077) revealed non-significant relationships with living in accordance with extrinsic values. These results suggest that people who perceive their basic psychological needs to be satisfied do not live according to extrinsic values. Therefore, the null hypothesis is accepted.

2. The Correlation Results between Basic Psychological Needs Satisfaction and Resilience

As shown in Table 1.2, overall basic psychological needs satisfaction (r (189)=.66, p=.001) and the subcomponents of autonomy satisfaction (r (189)=.51,

p=.001) and competence satisfaction (r (189)=.69, p=.001) independently revealed positive correlations with resilience, with strong effects. Relatedness satisfaction and resilience were positively correlated, with a moderate effect (r (189)=.40, p=.001). These results indicate that people who feel their basic psychological needs are satisfied, or who feel autonomous, competent or related to others are also likely to perceive themselves to be resilient. Therefore, the null hypothesis is rejected and Hypothesis 1 is accepted.

3. The Correlation Results between Goal Pursuits and Resilience

As shown in Table 1.2 intrinsic goal importance and resilience were positively correlated, with a moderate effect (r (189)=.40, p=.001). Intrinsic goal attainment and resilience were positively correlated, with a strong effect (r (189)=.57, p=.001). Similarly, living in accordance with intrinsic values and resilience were positively correlated, with a strong effect (r (189)=.60, p=.001). This suggests that people who place importance on intrinsic goals, attain intrinsic goals and live according to intrinsic values are also likely to perceive themselves to be resilient. In line with these results, the null hypothesis is rejected and Hypothesis 1 is accepted.

As shown in Table 1.2, the importance of extrinsic goals and resilience yielded a non-significant relationship (r (189)=.03, p=.354). In this case the null hypothesis is accepted. However, the attainment of extrinsic goals (r (189)=.243, p=.001) and living in accordance with extrinsic values (r (189)=.21, p=.002) were positively correlated to resilience, with small effects. These results suggest that when a person attains extrinsic goals or lives according to extrinsic values they also perceive themselves to have resilience. Accordingly, the null hypothesis is rejected and Hypothesis 1 is accepted.

Table 1.2

Correlations between the psychosocial variables

	Overall need satisfaction	Autonomy satisfaction	Competence satisfaction	Relatedness satisfaction	Resilience	Extrinsic goal importance	Extrinsic goal attainment	Living in accordance with extrinsic values	Intrinsic goal importance	Intrinsic goal attainment	Living in accordance with intrinsic values
Overall need satisfaction	–	–	–	–	–	–	–	–	–	–	–
Autonomy satisfaction	.789**	–	–	–	–	–	–	–	–	–	–
Competence satisfaction	.800**	.528**	–	–	–	–	–	–	–	–	–
Relatedness satisfaction	.776**	.415**	.404**	–	–	–	–	–	–	–	–
Resilience	.661**	.514**	.691**	.397**	–	–	–	–	–	–	–
Extrinsic goal importance	-.056	-.060	-.073	.002	.027	–	–	–	–	–	–
Extrinsic goal attainment	.213**	.132*	.203**	.193**	.243**	.315**	–	–	–	–	–
Living in accordance with extrinsic values	.117	.077	.112	.104	.209**	.736**	.803**	–	–	–	–
Intrinsic goal importance	.271**	.007	.261**	.313**	.403**	.115	.044	.099	–	–	–
Intrinsic goal attainment	.591**	.417**	.545**	.434**	.566**	-.056	.317**	.238**	.299**	–	–
Living in accordance with intrinsic values	.589**	.367**	.549**	.461**	.602**	-.006	.279**	.237**	.556**	.952**	–

Note. *N*=191 ** $p < 0.01$ level. * $p < 0.05$ level. Overall basic need satisfaction and the subcomponents of autonomy, competence and relatedness satisfaction were measured using the BPNS (La Guardia et al, 2001). Resilience was measured using the CD-RISC (Connor and Davidson, 2003). Goal importance and goal attainment was measured using the AI (Kasser and Ryan, 1996). Living in accordance with intrinsic and extrinsic values were composite variables that were created as a multiple of goal importance and goal attainment.

Hypothesis 2: Basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience will positively correlate with outcomes of psychological health including fewer symptoms, vitality and life satisfaction.

A correlation analysis was conducted using Pearson's *r* coefficient to test Hypothesis 2 in order to establish whether significant positive correlations exist between the psychosocial constructs and outcome variables of psychological health (these include fewer symptoms, vitality and life satisfaction). The results are also summarised in Table 1.3.

1. The Correlation Results between Basic Psychological Needs Satisfaction and Outcomes of Psychological Health

First, overall basic need psychological need satisfaction was found to be positively correlated with each outcome of psychological health, including fewer symptoms (r (189)=.39, p=.001) with a moderate effect, as well as, vitality (r (189)=.58, p=.001) and life satisfaction (r (189)=.60, p=.001) with large effects. This suggests that people who have their basic psychological needs satisfied are also likely to experience reduced psychological symptoms, experience vitality, as well as, evaluate their lives as satisfying. Accordingly, the null hypothesis is rejected and Hypothesis 2 is accepted.

Independently, autonomy satisfaction was positively correlated with each outcome of psychological health including fewer symptoms (r (189)=.37, p=.001), vitality (r (189)=.48, p=.001) and life satisfaction (r (189)=.48, p=.001), all with moderate effects. Independently, competence satisfaction was positively correlated to fewer symptoms with a moderate effect (r (189)=.43, p=.001), as well as, with vitality

(r (189)=.54, p=.001) and life satisfaction (r (189)=.53, p=.001), with large effects. Independently, relatedness satisfaction positively correlated with fewer symptoms, with a small effect (r (189)= .150, p=.02). Relatedness satisfaction revealed positive correlations with vitality (r (189)=.38, p=.001) and life satisfaction (r (189)=.44, p=.001), both with moderate effects. The results suggest that people who perceive their basic psychological needs for autonomy, competence and related to be satisfied are also likely to experience fewer psychological symptoms, experience vitality and evaluate their lives as satisfying. Accordingly, the null hypothesis is rejected and Hypothesis 2 is accepted.

2. Correlation Results between Goal Pursuits and Outcomes of Psychological Health

As shown in Table 1.3 the importance of intrinsic goals did not yield significant relationships with either fewer symptoms (r (189)=.02, p=.386) or vitality (r (189)=.10, p=.085) . This suggests that placing importance on intrinsic goals has no bearing on having fewer psychological symptoms or vitality. Interestingly, placing importance on intrinsic goals was positively correlated with life satisfaction with a small effect, although this was at weaker level of significance (r (189)=.13, p=.04). Intrinsic goal attainment positively correlated with fewer symptoms (r (189)=.32, p=.001) and vitality (r (189)=.47, p=.001), with moderate effects. Intrinsic goal attainment positively correlated with life satisfaction, with a strong effect (r (189)=.62, p=.001) .

Living in accordance with intrinsic values was positively correlated with fewer symptoms (r (189)=.28, p=.001) and vitality (r (189)=.42, p=.001), both with moderate effects. Living in accordance with intrinsic values was positively correlated

with life satisfaction, with a large effect (r (189)=.56, p=.001). This suggests that people who attain intrinsic goals and live in accordance with intrinsic values are also likely to experience fewer psychological symptoms, vitality and life satisfaction. Accordingly, in the cases of the aforementioned relationships, the null hypothesis in rejected and Hypothesis 2 is accepted.

In contrast the correlations between extrinsic goal importance and each outcome of psychological health, including fewer symptoms (r (189)=-.04, p=.272), vitality (r (189)=-.10, p=.08) and life satisfaction (r (189)=-.10, p=.09) were non-significant. The attainment of extrinsic goals also yielded a non-significant correlation with fewer symptoms (r (189)=.06, p=.217). However, attaining extrinsic goals positively correlated with vitality (r (189)=.18, p=.001) and life satisfaction (r (189)=.215, p=.001), with small effects.

Living in accordance with extrinsic values yielded a non-significant correlation with fewer symptoms (r (189)=.08, p=.138). Although living in accordance with extrinsic values and vitality was positively correlated with a small effect, at a weaker level of significance (r (189)=.13, p=.036). Living in accordance with extrinsic values was positively correlated with life satisfaction, with a small effect (r (189)=.22, p=.001). This suggests that whilst people who attain extrinsic goals and who live according to extrinsic values are not likely to experience fewer psychological symptoms, they are likely to experience vitality and life satisfaction. Therefore, in the cases of the relationships between extrinsic goal attainment and living in accordance with extrinsic values with the outcomes of vitality and life satisfaction, the null hypothesis is rejected in support of Hypothesis 2.

3. Correlation Results between Resilience and Outcomes of Psychological Health

The correlation analyses revealed that resilience was positively correlated to fewer psychological symptoms, with a moderate effect (r (189)=.46, p=.001). Resilience was positively correlated with vitality (r (189)=.59, p=.001) and life satisfaction (r (189)=.58, p=.001), with large effects. This suggests that people who perceive themselves to have resilient qualities are also likely to report having fewer psychological symptoms, experience vitality and evaluate their lives as satisfying. Accordingly, the null hypothesis is rejected in support of Hypothesis 2.

Table 1.3

Correlations Between Psychosocial Variables and Outcomes of Psychological Health

	Fewer Symptoms	Vitality	Life satisfaction
Overall need satisfaction	.390**	.577**	.602**
Autonomy satisfaction	.371**	.475**	.484**
Competence Satisfaction	.425**	.539**	.530**
Relatedness satisfaction	.150*	.384**	.437**
Resilience	.458**	.586**	.576**
Extrinsic goal importance	-.044	-.100	-.097
Extrinsic goal attainment	.057	.179**	.215**
Living in accordance with extrinsic values	.079	.130*	.142*
Intrinsic goal importance	.021	.099	.128*
Intrinsic goal attainment	.316**	.467**	.617**
Living in accordance with intrinsic values	.279**	.423**	.564**

Note. *N*=191 ** $p < 0.01$ level. * $p < 0.05$ level. Psychosocial variables; Overall basic need satisfaction and the subcomponents of autonomy, competence and relatedness satisfaction were measured using the BPNS (La Guardia et al, 2001). Resilience was measured using the CD-RISC (Connor and Davidson, 2003). Goal importance and goal attainment was measured using the AI (Kasser and Ryan, 1996). Living in accordance with intrinsic and extrinsic values were composite variables that were created as a multiple of goal importance and goal attainment. Psychological health outcome variables; Fewer symptoms was measured using the GHQ-12 (Goldberg and Williams, 1988). Vitality was measured using the SVS (Ryan and Frederick, 1997). Life satisfaction was measured using the SWLS (Diener et al, 1985)

Hypothesis 3: Psychological flexibility will positively correlate with basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience.

A correlation analysis using Pearson's *r* coefficient was conducted to test the relationships between psychological flexibility and the following psychosocial constructs; basic psychological needs satisfaction, intrinsic and extrinsic goal importance, attainment, living in accordance with intrinsic and extrinsic values and resilience. The results are described below and are summarised in Table 1.4.

The results of the correlation analyses indicated that psychological flexibility and overall basic psychological needs satisfaction were positively correlated, with a strong effect (r (189)=.63, p=.001). Psychological flexibility was positively correlated with autonomy (r (189)=.60, p=.001) and competence satisfaction (r (189)=.59, p=.001), both with strong effects. Psychological flexibility was positively correlated with relatedness satisfaction, with a moderate effect (r (189)=.34, p=.001). These results indicate that people who have a capacity for psychological flexibility are also likely to perceive their overall basic needs to be satisfied, including each independent need for autonomy, competence and relatedness. Therefore, the null hypothesis was rejected and Hypothesis 3 was accepted.

Psychological flexibility and resilience were positively correlated, with a strong effect (r (189)=.63, p=.001). This suggests that people who have a capacity for psychological flexibility are also likely to perceive themselves to have resilient qualities. In this case, the null hypothesis was rejected and Hypothesis 3 was accepted.

In contrast, the results showed that psychological flexibility and intrinsic goal importance had a non-significant correlation (r (189)=.01, p=.458). In this case, the null hypothesis was accepted. However, psychological flexibility was positively correlated with the attainment of intrinsic goals, with a moderate effect (r (189)=.47, p=.001). Similarly, psychological flexibility was positively correlated with living in accordance with intrinsic values, with a moderate effect (r (189)=.40, p=.001). This suggests that people who have a capacity for psychological flexibility are also likely to attain intrinsic goals and live according to intrinsic values. Accordingly, in these cases the null hypothesis was rejected and Hypothesis 3 was accepted.

Psychological flexibility yielded a non-significant correlation with extrinsic goal importance (r (189)=-.02, p=.41). Similarly, psychological flexibility yielded a non-significant correlation with living in accordance with extrinsic values (r (189)=.09, p=.108). In view of these results, the null hypothesis was accepted. In contrast, the results indicated that psychological flexibility was positively correlated with the attainment of extrinsic goals, with a small effect, although this was at a weaker level of significance (r (189)=.143, p=.024). This result suggests that people who have a capacity for psychological flexibility are also likely to attain extrinsic goals. In this case the null hypothesis was rejected and Hypothesis 3 was accepted.

Overall, the results suggest that psychological flexibility is associated with the psychosocial constructs that are affiliated with Ryan and Deci's (2000) SDT. As such, the results suggest that when a person has a capacity for psychological flexibility they are also likely to perceive their basic psychological needs to be fulfilled, they are also likely to attain intrinsic goals and engage in intrinsic pursuits when they are valued, as well as perceive themselves to have a capacity for resilience. Additionally, people

who have a capacity for psychological flexibility are also likely to attain extrinsic goals. In these cases, the null hypothesis was rejected in support of Hypothesis 3.

Table 1.4

Correlations Between Psychological Flexibility and the Psychosocial Variables

	Overall basic need satisfaction	Autonomy satisfaction	Competence satisfaction	Relatedness satisfaction	Resilience	Extrinsic goal importance	Extrinsic goal attainment	Living in accordance with extrinsic values	Intrinsic goal importance	Intrinsic goal attainment	Living in accordance with intrinsic values
Psychological flexibility	.632**	.596**	.594**	.344**	.631**	-.017	.143*	.090	.008	.466**	.402**

Note. *N*=191 ** $p < 0.01$ level. * $p < 0.05$ level. Psychological flexibility was measured using the AAQ-11 (Bond and Hayes et al, submitted). Psychosocial variables; Overall basic need satisfaction and the subcomponents of autonomy, competence and relatedness satisfaction were measured using the BPNS (La Guardia et al, 2001). Resilience was measured using the CD-RISC (Connor and Davidson, 2003). Goal importance and goal attainment was measured using the AI (Kasser and Ryan, 1996). Living in accordance with intrinsic and extrinsic values were composite variables that were created as a multiple of goal importance and goal attainment.

Hypothesis 4: Psychological flexibility will positively correlate with outcomes of psychological health including fewer symptoms, vitality and life satisfaction.

Finally, a correlation analysis using Pearson's *r* coefficient was carried out to test whether psychological flexibility is positively correlated to psychological health outcomes including, fewer symptoms, vitality and life satisfaction. The results revealed that psychological flexibility was positively correlated with fewer symptoms, with a moderate effect (r (189)=.476, p=.001). Psychological flexibility was positively correlated with vitality (r (189)=.59, p=.001) and life satisfaction (r (189)=.571, p=.001), both with strong effects. The findings suggest that people who have a capacity for psychological flexibility are also likely to experience fewer psychological symptoms, feel vital and energised and evaluate their lives as satisfying. Accordingly, the null hypothesis is rejected and Hypothesis 4 is accepted.

4.5 Mediation Analysis to Test Hypothesis 5

Hypothesis 5: Basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits (i.e. importance, attainment and living in accordance with values) and resilience will mediate the relationship between psychological flexibility and each outcome of psychological health (i.e. fewer symptoms, vitality and life satisfaction).

To test Hypothesis 5, a simple mediation regression model is used because this is concerned with *how* the effect of the predictor variable, in this case, psychological flexibility, influences the outcome variables, in this case psychological health outcomes (i.e. fewer symptoms, vitality and life satisfaction) through an alternative relationship sequence that involves a third mediating variable.

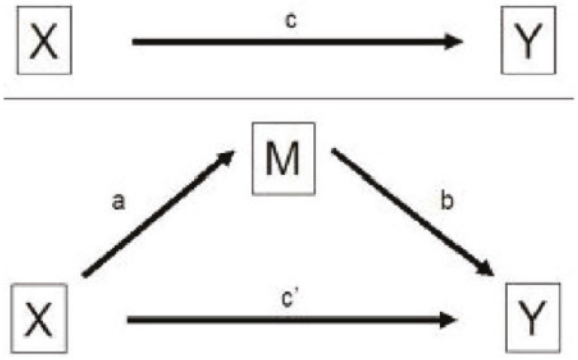
For the purpose of the current research the psychosocial components drawn from Ryan and Deci's (2000) SDT, which include overall basic psychological needs satisfaction, each independent need for autonomy, competence and relatedness, intrinsic and extrinsic goal attainment, living according to intrinsic and extrinsic values, as well as, resilience are tested as independently as mediators of the relationship between psychological flexibility and each psychological health outcome.

4.6 Ordinary Least Squares Pathway Model

Hayes (2013) 'PROCESS' tool was used as an add-on program in SPSS to conduct the mediation analysis to test Hypothesis 5. This tool quantifies the Ordinary Least Squares (OLS) regression path analysis based on the direct value of the coefficients that represent the predictive power of each pathway. OLS path analysis is used to determine if there is an effect from the predictor variable X (i.e. psychological

flexibility) on the outcome variable Y (i.e. psychological health outcome) along two independent pathways termed the indirect effect (*ab*) and the direct effect (*c'*), when the influence of the mediator is controlled for, as seen in Figure 4. To show a complete mediation the relationship between X, the predictor variable and Y, the outcome variable should have an effect of zero or should no longer be significant. If it remains significant, this indicates a partial mediation effect which shows that X indirectly effects Y through M, whilst X also has an effect on Y independently of M (Hayes, 2013).

Figure 1. Mediation Regression Pathways



The OLS pathway model was chosen on the basis that it is a contemporary inferential approach that is advantageous compared with traditional and widely used approaches such as Baron and Kenny's (1986) Causal Steps mediation regression model. This is because Hayes' (2013) OLS pathway model tool quantifies the indirect effect based on the statistical nature of the pathway coefficients. The indirect effect can be further tested for significance using inferential test such as Sobel's Test or The Bootstrap Method. In contrast, Baron and Kenny's (1986) causal steps approach follows a set of hypotheses, which determine the presence of a mediation effect. The

outcome of a mediation effect is based on logical assumptions that uses four steps to test the difference between the total effect and the direct effect (Hayes, 2009). If pathways *a* and *b* are statistically significant and *c'*, the direct effect is smaller than the total effect *c*, or is no longer significant, then a mediation effect is assumed. If pathway *c'* remains significant and is not smaller than *c* then this indicates a partial mediation effect (Miles and Shelvin, 2005).

However, Hayes (2009) warns that although Baron and Kenny's (1986) method is widely used, it is a less powerful technique. First, on the basis that it requires the condition for mediation to show that the total effect must be different zero. However, Hayes (2009) emphasises that due to the complexity of other influencing variables that are occurring in the real world that cannot be accounted for by a simple mediation analysis, it is possible to have an indirect effect where there is no evidence for a total effect, and therefore should not be dismissed too easily. Second, Hayes (2009) argues that Baron and Kenny's (1986) causal steps approach uses logic as opposed to the quantifiable statistics to infer the nature of the indirect effect. The causal steps approach does not reflect whether an inconsistent mediation or suppression effect has occurred (Hayes, 2009). The danger here is that no mediation can be inferred from the logical steps approach, when the mediator acts as a suppressor. Third, whereby Baron and Kenny's (1986) approach assumes a significant relationship is necessary for pathways *a* and *b*, Hayes (2013) suggests this is not necessary to show an indirect effect, and instead argues that the value of the indirect effect itself should be tested for significance.

Hayes (2009) adds that current inferential tests are a necessity to avoid error when making claims about the indirect effect. Hayes (2009) encourages the use of tools that test the quantifiable value of the indirect effect its self, that is, the product of

ab. Hayes (2009) argues that inferential tests such as Sobel's test or Bootstrapping are more robust and therefore advantageous. Sobel's test is one inferential technique termed the product of coefficients approach. This method tests the coefficient of the indirect effect of pathways *ab*, by observing the statistical difference between the coefficients for the total and direct effect. To test the null hypothesis, that the true indirect effect is zero the magnitude of the indirect effect is tested against an estimate of the standard error. If the indirect effect is significant a mediation effect is observed. One limitation of this method, as Hayes (2009) highlights, is that it requires the sampling distribution to meet the assumption of normality, which is unlikely.

An alternative and more robust technique to test the significance of an indirect effect is Bootstrapping. One advantage of this approach is that it does not require the data to be normally distributed. The Bootstrap Method generates a large number of samples based on the present sample, in this case 5000 re-samples will be generated, this creates a sampling distribution of the possible indirect effects. The significance of the indirect effect is then inferred by observing the range from the lower to the upper values that lie within 95% confidence intervals. As well as being based on the estimate of the indirect effect, this also provides information about its possible range and magnitude (Hayes, 2009).

MacKinnon, Lockwood, and Williams (2004) suggest that an indirect effect can be deemed significant if zero is not included between the lower and upper the confidence intervals. If zero is not in this range, then a mediation effect can be accepted within 95% confidence. Conversely, if zero lies within this range, then the null hypothesis, that no mediation has occurred can be accepted. Hayes (2009) suggests that this is a preferable and powerful technique that is based on the indirect effect itself. In a study comparing the use of Baron and Kenny's (1986) causal steps

approach, Sobel's Test and Bootstrapping method to detect the nature of an indirect effect, Fritz and MacKinnon (2007) found that the Bootstrapping method was the most powerful technique, particularly for smaller sample sizes. For the reasons presented, Hayes' (2013) 'PROCESS' tool was chosen to carry out an OLS pathway regression and the use of the Bootstrap method, a contemporary and robust inferential technique was chosen to infer the nature of the indirect effects.

As previously mentioned, for the purpose of the current research, psychological flexibility is consistently positioned as the independent variable (X) and each psychological health outcome (Y), including fewer symptoms, vitality and life satisfaction, will be positioned as the dependent variable. Each psychosocial component including, basic psychological needs satisfaction; autonomy, competence and relatedness, the importance and attainment of intrinsic and extrinsic goal pursuits, living in accordance with intrinsic and extrinsic values and resilience will be tested independently as mediators (M) in the relationship between psychological flexibility and each outcome of psychological health. Three sets of analyses were conducted for each psychological health outcome: fewer symptoms, vitality and life satisfaction.

As suggested by Field (2013), the size of the indirect effect is determined using Preacher and Kelly's (2011) Kappa-squared value parameters. The values of .01, 0.9 and .25 correspond to small, medium and large indirect effect sizes. Following the reported findings from each simple mediation model, a summary of the indirect effects of psychological flexibility on each respective outcome variable via each psychosocial construct is presented in Table 1.5.

4. 7 Simple Mediation Analyses with Fewer Symptoms as the Outcome Variable

In a series of simple mediation analyses, each of the psychosocial constructs (i.e. overall basic psychological needs satisfaction, resilience, intrinsic goal attainment, living in accordance with intrinsic values, extrinsic goal attainment and living in accordance with extrinsic values) were tested as mediators in the relationship between psychological flexibility, the predictor variable and fewer psychological symptoms, the outcome variable. The total effect model of the relationship between psychological flexibility (AAQII) and fewer psychological symptoms (GHQ-12) was significant, with a moderate to large effect size. 22.6% of the variance of fewer psychological symptoms scores was explained by psychological flexibility, [R^2=.226 F(1, 189)=55.978, p<.001, b=.238 t=7.482, p<.001]. The results of the indirect effects are presented below.

First, basic psychological needs satisfaction was tested as a mediator. As can be seen in Figure 2.1, there was a significant indirect effect of psychological flexibility on fewer psychological symptoms, through overall basic psychological needs satisfaction, b=0.047, BCa CI [.001, .094]. This represents a small effect, k^2 =.083, 95% BCa CI [.010, .160]. Psychological flexibility also had a significant direct influence on fewer psychological symptoms (b=.191, p<.001). This indicates that basic psychological needs satisfaction acts as a partial mediator in the relationship between psychological flexibility and fewer psychological symptoms. Accordingly, the null hypothesis was rejected in support of Hypothesis 5.

Subsequently, each basic psychological need for autonomy, competence and relatedness were tested independently in the relationship between psychological

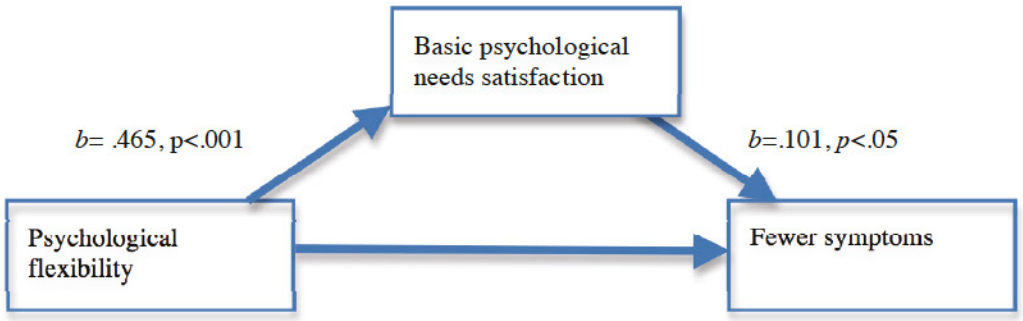
flexibility and fewer psychological symptoms. Interestingly, as shown in Figure 2.2, psychological flexibility did not have a significant indirect influence on fewer psychological symptoms through autonomy satisfaction, b=0.041, BCa CI [-.0004, .087].

Notably, psychological flexibility explained a high level of variance in autonomy satisfaction (R^2=.255, b=.465, p<.001) and beyond psychological flexibility, autonomy satisfaction had no unique variance in relation to having fewer psychological symptoms (b=.084, p>.05). This finding indicates that psychological flexibility and autonomy satisfaction are highly related constructs and does not necessarily indicate the absence of an indirect effect on fewer symptoms (Zhao, Lynch and Chen, 2009). Due to the strong relationship between psychological flexibility and autonomy satisfaction, it is likely that the predictive power of autonomy satisfaction is greatly reduced in the relationship to having fewer psychological symptoms when psychological flexibility is controlled for. Notably, psychological flexibility had a direct influence on fewer psychological symptoms when autonomy satisfaction was controlled for (b=.197, p<.001).

However, as shown in Figure 2.3, psychological flexibility had a significant indirect effect on having fewer psychological symptoms, through competence satisfaction, b=0.065, BCa CI [.019, .113]. This represents a moderate effect, k^2=.120, 95% BCa CI [.036, .196]. Psychological flexibility had a direct influence on having fewer symptoms when competence satisfaction was controlled for (b=.173, p<.01). This suggests that competence satisfaction acts as a partial mediator in the relationship between psychological flexibility and fewer psychological symptoms. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

As can be seen in Figure 2.4, psychological flexibility did not have a significant indirect effect on fewer symptoms, through relatedness satisfaction, b=-0.003, BCa CI [-.028, .021]. Notably, psychological flexibility explained a moderate level of variance in relatedness satisfaction scores (R^2=.118, b=.270, p<.001). And, beyond psychological flexibility, relatedness satisfaction had no unique variance in reporting fewer psychological symptoms (b=-.010, p>.05). Zhao et al (2009) suggests that this does not necessarily show the absence of an indirect effect but highlights that psychological flexibility and relatedness satisfaction are associated constructs. This finding suggests that the predictive influence of relatedness satisfaction is likely to be reduced to a great extent in the relationship to reporting fewer psychological symptoms, when psychological flexibility is controlled for, therefore showing a non-significant indirect effect on having fewer psychological symptoms. Notably, when relatedness satisfaction was controlled for, psychological flexibility had a direct influence on fewer psychological symptoms (b=.240, p<.001).

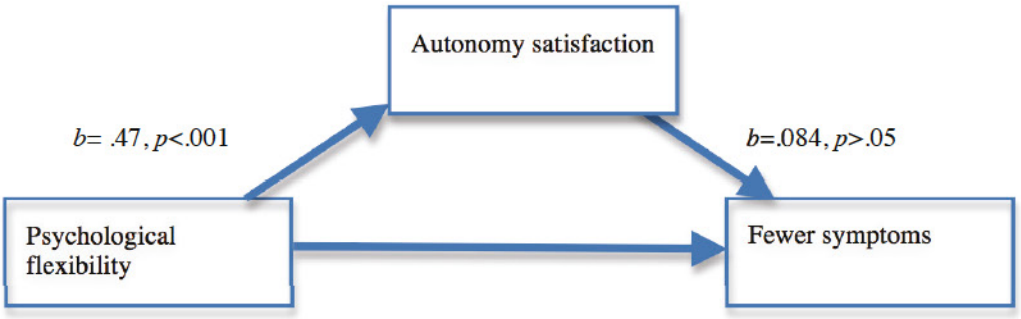
Figure 2.1. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Overall Basic Psychological Needs Satisfaction.



Direct effect, b=.191, p<.001

Indirect effect, b=.047, 95% CI [.001, .094]

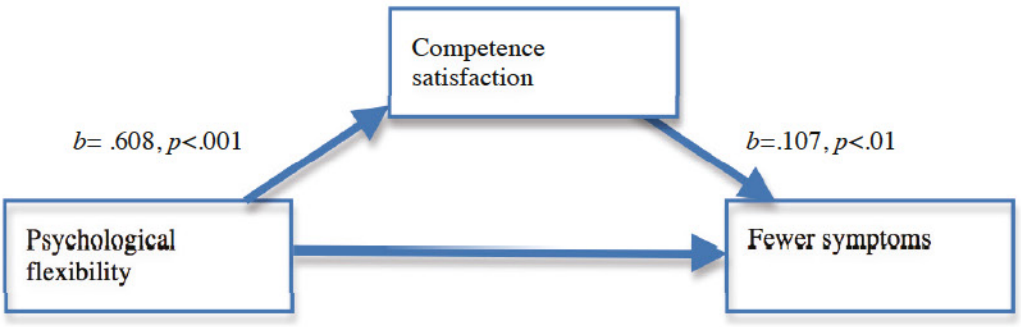
Figure 2.2. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Autonomy Satisfaction.



Direct effect, b=.197, p<.001

Indirect effect, b=.041, 95% CI [-.0004, .087]

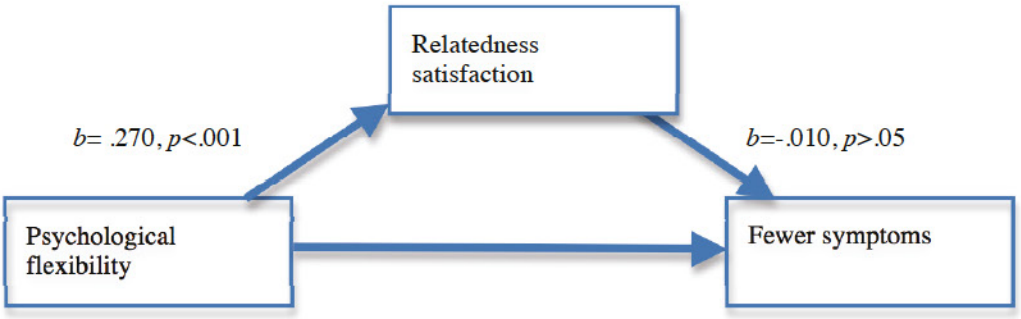
Figure 2.3. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Competence Satisfaction.



Direct effect, b=.173, p<.001

Indirect effect, b=.065, 95% CI [.036, .196]

Figure 2.4. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Relatedness Satisfaction.



Direct effect, b=.240 p<.001

Indirect effect, b=-.003, 95% CI [-.028, .021]

As shown in Figure 2.5, psychological flexibility had a significant indirect influence on fewer psychological symptoms through resilience b=0.083, BCa CI [.031, .142]. This effect was moderate, k^2 =.146, 95% BCa CI [.057, .236]. When resilience was controlled for, psychological flexibility had a direct influence on fewer symptoms (b=.240, p<.001). This suggests that resilience acts as a partial mediator in the relationship between psychological flexibility and having fewer psychological symptoms. Accordingly, the null hypothesis is rejected in support of Hypothesis 5.

However, as shown in Figure 2.6, psychological flexibility did not have an indirect influence on the attainment of intrinsic goals, b=0.028, BCa CI [-.004, .066]. Notably, psychological flexibility explained a moderate to large level of variance in intrinsic goal attainment scores (R^2=.22, b=.542, p<.001) and beyond psychological flexibility, intrinsic goal attainment had no unique variance in fewer symptoms scores

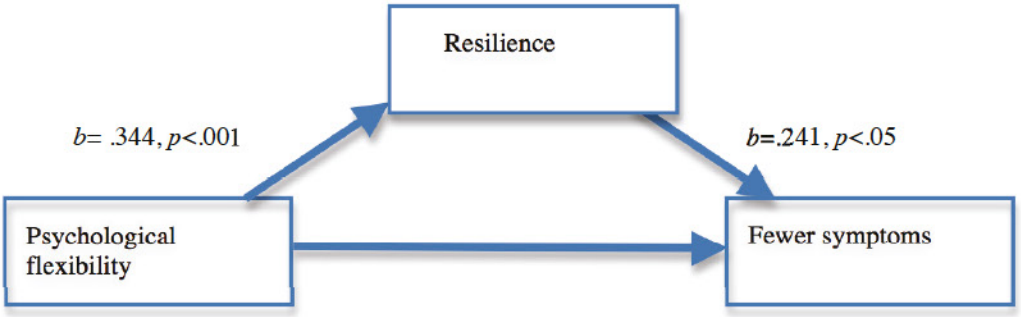
(b=.052, p>.05). This suggests that psychological flexibility and intrinsic goal attainment are highly related constructs and does not necessarily indicate the absence of an indirect effect of psychological flexibility on having fewer symptoms, through intrinsic goal attainment (Zhao et al, 2009). Instead, it is likely that due to the strong association between psychological flexibility and intrinsic goal attainment, that the predictive influence of intrinsic goal attainment on fewer symptoms is greatly reduced when psychological flexibility is controlled for, which yields the result of an absence of an indirect effect. Notably, when intrinsic goal attainment was controlled for, psychological flexibility had a direct influence on fewer psychological symptoms (b=.210, p<.001).

As can be seen in Figure 2.7, psychological flexibility did not have an indirect effect on fewer psychological symptoms through living in accordance with intrinsic values, b=.218, BCa CI [-.005, .049]. Notably, psychological flexibility explained a moderate level of variance in living in accordance with intrinsic values scores (R^2=.16, b=3.439, p<.001). And, beyond psychological flexibility, living in accordance with intrinsic values had no unique variance in fewer symptoms scores (b=.006, p>.05). This suggests that psychological flexibility and living in accordance with intrinsic values are associated constructs, and does not necessarily indicate the absence of an indirect effect on having fewer symptoms (Zhao et al, 2009).

Instead, it is likely that due to the moderate relationship between psychological flexibility and living in accordance with intrinsic values, the predictive power of living in accordance with intrinsic values is greatly diminished in the relationship to fewer symptoms, when psychological flexibility is controlled for. This subsequently yields the result of an absence of an indirect effect. Notably, when living

in accordance with intrinsic values was controlled for, psychological flexibility had a direct influence on fewer symptoms (b=.217, p<.001).

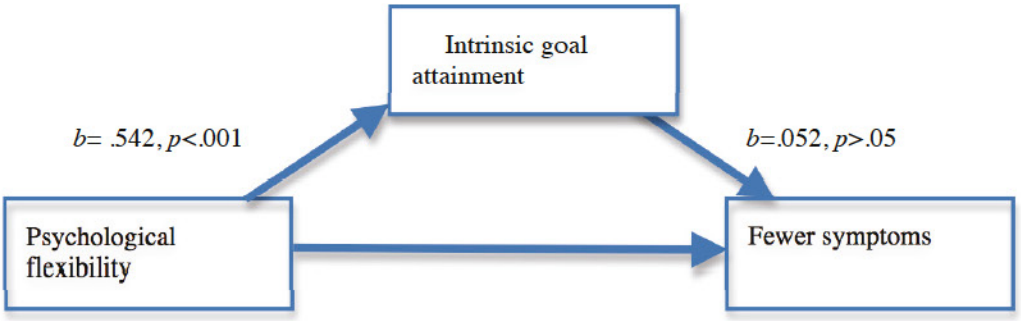
Figure 2.5. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Resilience.



Direct effect, b=.155 p<.001

Indirect effect, b=.083, 95% CI [.031, .142]

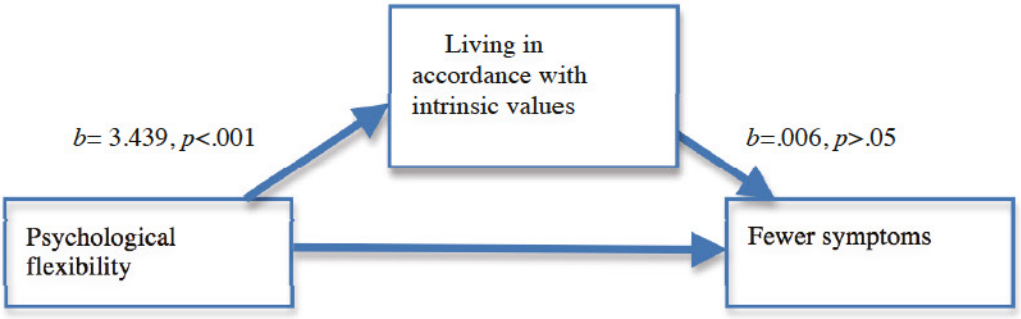
Figure 2.6. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Intrinsic Goal Attainment.



Direct effect, b=.210 p<.001

Indirect effect, b=.028, 95% CI [-.004, .066]

Figure 2.7. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Living In Accordance with Intrinsic Values.



Direct effect, b=.217 p<.001

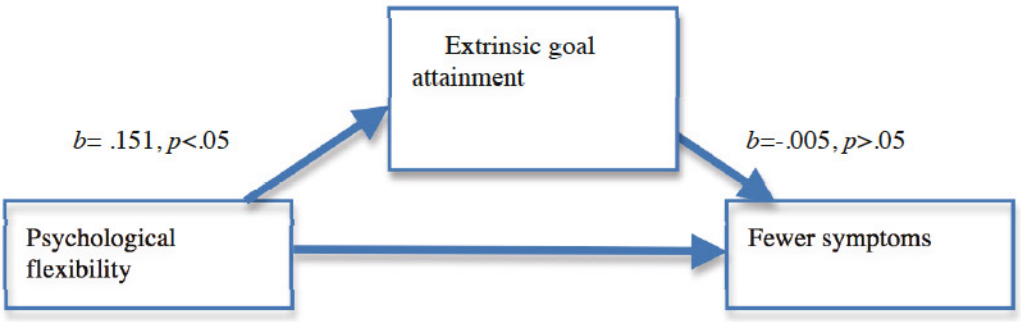
Indirect effect, b=.021, 95% CI [-.005, .049]

As shown in Figure 2.8, psychological flexibility did not have a significant indirect influence on having fewer symptoms, through the attainment of extrinsic goals, b=-0.001, BCa CI [-.015, .023]. Although psychological flexibility had a significant positive relationship with extrinsic goal attainment, this was with a small effect (R^2= .020, b=.151, p<.05). When psychological flexibility was controlled for, extrinsic goal attainment had a non-significant relationship with fewer symptoms (b=-.005, p>.05). Although, when extrinsic goal attainment was controlled for, psychological flexibility had a direct influence on fewer symptoms (b= .239, p<.001). This suggests that the attainment of extrinsic goals does not act as a mediator in the relationship between psychological flexibility and having fewer symptoms, therefore Hypothesis 5 was rejected and the null hypothesis was accepted.

Similarly, as shown in Figure 2.9, psychological flexibility did not have an indirect influence on psychological health through living in accordance with extrinsic values b=.002, BCa CI [-.004, .013]. The relationship between psychological

flexibility and living in accordance with extrinsic values was non-significant (b=.151, p>.05). And, when psychological flexibility was controlled for, living in accordance with extrinsic values had a non-significant relationship with fewer symptoms (b=-.005, p>.05). Although, when extrinsic goal attainment was controlled for, psychological flexibility had a direct influence on fewer symptoms (b=.236, p<.001). This suggests that the attainment of extrinsic goals does not act as a mediator in the relationship between psychological flexibility and having fewer symptoms, therefore Hypothesis 5 was rejected and the null hypothesis was accepted.

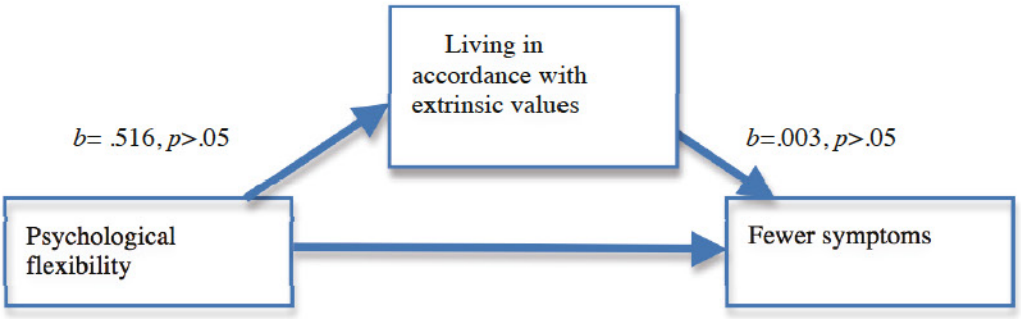
Figure 2.8. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Extrinsic Goal Attainment.



Direct effect, b=.239 p<.001

Indirect effect, b=-.001, 95% CI [-.015, .012]

Figure 2.9. Model of Psychological Flexibility as a Predictor of Fewer Symptoms, Mediated by Living In Accordance with Extrinsic Values.



Direct effect, b=.236 p<.001

Indirect effect, b=.002, 95% CI [-.004, .013]

4.8 Simple Mediation Analyses with Vitality as the Outcome Variable

In a series of simple mediation analyses each of the psychosocial constructs (i.e. overall basic psychological needs satisfaction, resilience, intrinsic goal attainment, living in accordance with intrinsic values, extrinsic goal attainment and living in accordance with extrinsic values) were tested as mediators in the relationship between psychological flexibility (AAQII), the predictor variable and vitality (SVS), the outcome variable. The total effect of the relationship between psychological flexibility and vitality was positive and significant, with a large effect size. 34.3% of the variance of vitality scores was explained by psychological flexibility, [R^2=.343 F(1, 189)=127.219, p<.001, b=.844 t=11.279, p<.001]. The results of the indirect effects are presented below.

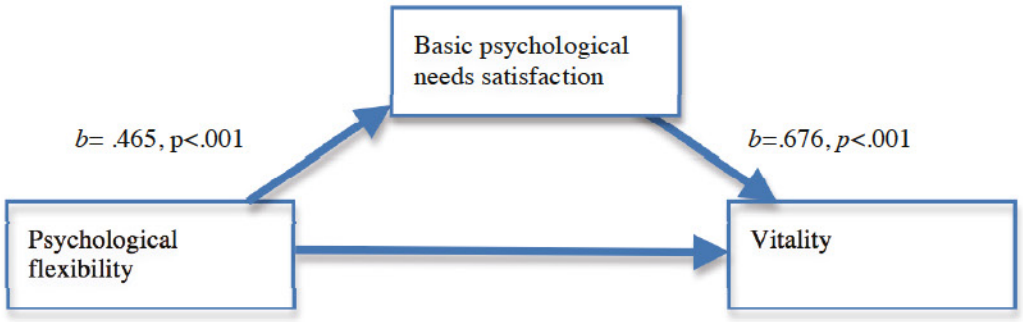
First, as shown in Figure 3.1, there was a significant indirect effect of psychological flexibility on vitality through overall basic psychological needs satisfaction, b=0.315, BCa CI [.183, .466]. This represents a moderate effect, k^2 =.208, 95% BCa CI [.127, .290]. Notably, psychological flexibility had a direct influence on vitality, when basic psychological needs satisfaction was controlled for (b=.530, p<.001). This suggests that overall basic psychological needs satisfaction acts as a partial mediator in the relationship between psychological flexibility and fewer psychological symptoms. Accordingly, the null hypothesis is rejected in support of Hypothesis 5.

Subsequently each basic psychological need was tested independently as a mediator. As shown in Figure 3.2, there was a significant indirect effect of psychological flexibility on vitality through autonomy satisfaction, b=0.168, BCa CI [.053, .287]. This represents a moderate effect, k^2 =.116, 95% BCa CI [.037, .191]. Psychological flexibility also had a direct effect on vitality when autonomy satisfaction was controlled for (b=.530, p<.001). This suggests that autonomy satisfaction is a partial mediator in the relationship between psychological flexibility and vitality. Accordingly, the null hypothesis is rejected in support of Hypothesis 5.

Similarly, as shown in Figure 3.3, there was a significant indirect effect of psychological flexibility on vitality through competence satisfaction, b=0.253, BCa CI [.129, .249]. This represents a moderate effect, k^2 = .174, 95% BCa CI [.093, .261]. Simultaneously, psychological flexibility had a direct influence on vitality, when competence satisfaction was controlled for (b=.591, p<.001). This indicates competence satisfaction is a partial mediator in the relationship between psychological flexibility and vitality; the null hypothesis is rejected in support of Hypothesis 5.

Furthermore, as shown in Figure 3.4, there was a significant indirect influence of psychological flexibility on vitality through relatedness satisfaction, b=0.103, BCa CI [.038, .198]. This represents a moderate effect, k^2 = .085, 95% BCa CI [.035, .149]. Psychological flexibility also had a direct influence on vitality when relatedness satisfaction was controlled for (b=.742, p<.001). This indicates relatedness satisfaction is a partial mediator in the relationship between psychological flexibility and vitality; the null hypothesis is rejected in support of Hypothesis 5.

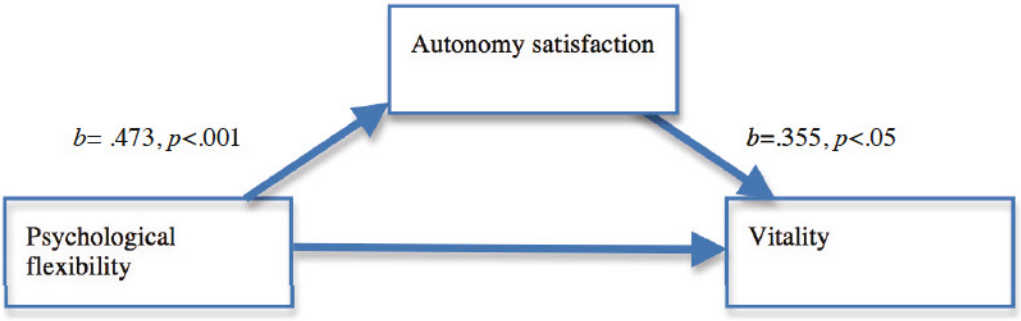
Figure 3.1. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Overall Basic Psychological Needs Satisfaction.



Direct effect, b=.530, p<.001

Indirect effect, b=.315, 95% CI [.183, .466]

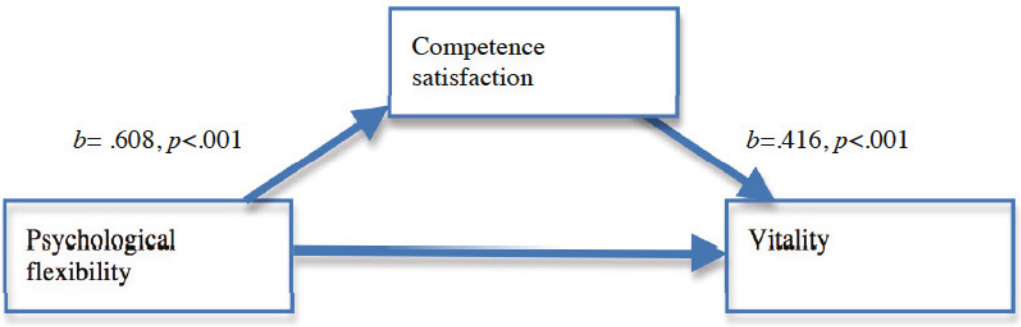
Figure 3.2. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Autonomy Satisfaction.



Direct effect, b=.676, p<.001

Indirect effect, b=.168, 95% CI [.053, .287]

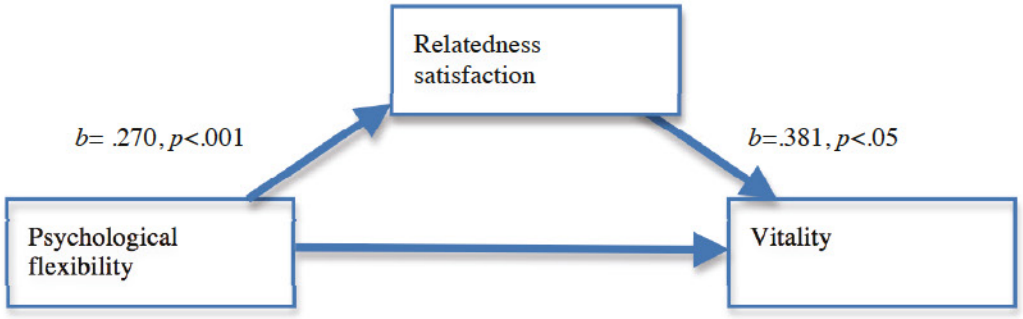
Figure 3.3. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Competence Satisfaction.



Direct effect, b=.591, p<.001

Indirect effect, b=.253, 95% CI [.129, .397]

Figure 3.4. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Relatedness Satisfaction.



Direct effect, b=.742 p<.001

Indirect effect, b=.103, 95% CI [.038, .198]

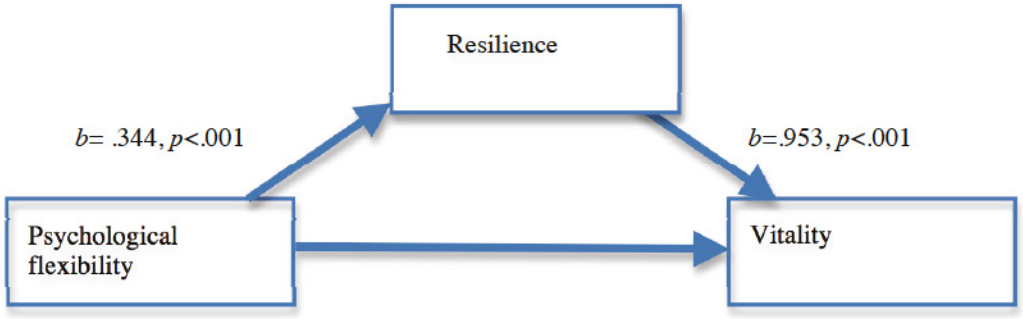
As shown in Figure 3.5, psychological flexibility had an indirect influence on vitality through resilience, b=0.517, BCa CI [.178, .50]. This effect was moderate, k^2 =.217, 95% BCa CI [.125, .318]. Simultaneously, psychological flexibility had a direct influence on vitality, when resilience was controlled for (b=.517, p<.001). This indicates resilience is a partial mediator in the relationship between psychological flexibility and vitality. Accordingly, the null hypothesis is rejected in support of Hypothesis 5.

Similarly, as shown in Figure 3.6, psychological flexibility had an indirect influence on vitality, through the attainment of intrinsic goals, b=0.167, BCa CI [.075, .281]. This effect was moderate, k^2 =.127, 95% BCa CI [.058, .20]. Psychological flexibility also had a direct influence on vitality, when the attainment of intrinsic goals was controlled for (b=.678, p<.001). This indicates that intrinsic goal attainment is a

partial mediator in the relationship between psychological flexibility and vitality. Accordingly, the null hypothesis is rejected in support of Hypothesis 5.

As can be seen in Figure 3.7, psychological flexibility had an indirect effect on vitality through living in accordance with intrinsic values, b=0.130, BCa CI [.054, .230]. This effect was moderate, k^2 =.103, 95% BCa CI [.046, .171]. Notably, psychological flexibility also had a direct influence on vitality, when living in accordance with intrinsic values was controlled for (b=.715, p<.001). This indicates that living in accordance with intrinsic values is a partial mediator in the relationship between psychological flexibility and vitality. Accordingly, the null hypothesis is rejected in support of Hypothesis 5.

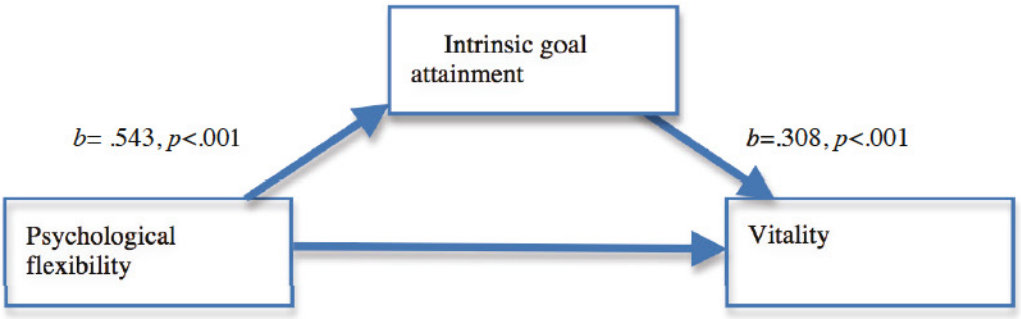
Figure 3.5. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Resilience.



Direct effect, b=.517 p<.001

Indirect effect, b=.328, 95% CI [.178, .50]

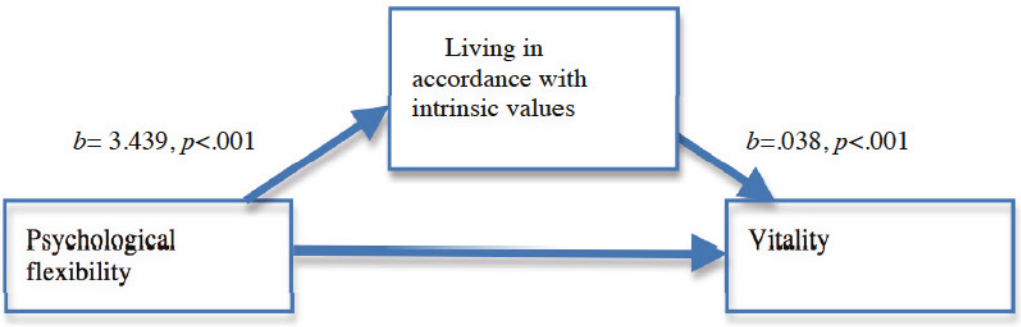
Figure 3.6. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Intrinsic Goal Attainment.



Direct effect, b=.678 p<.001

Indirect effect, b=.167, 95% CI [.075, .281]

Figure 3.7. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Living In Accordance with Intrinsic Values.



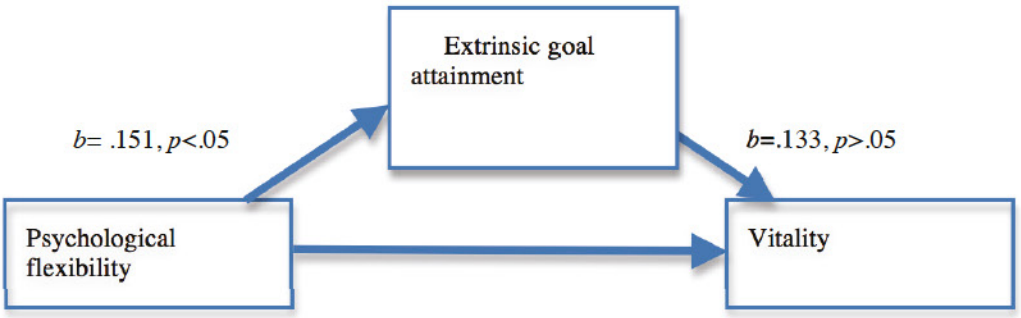
Direct effect, b=.715 p<.001

Indirect effect, b=.130, 95% CI [.054, .230]

As shown in Figure 3.8, psychological flexibility did not have a significant indirect influence on vitality, through the attainment of extrinsic goals, b=0.020, BCa CI [-.004, .077]. Notably the relationship between psychological flexibility and extrinsic goal attainment although significant was of a small effect (R^2=.020, b =.151, p<0.05). When the influence of psychological flexibility was controlled for, the attainment of extrinsic goals did not influence vitality (b =.133, p>.05). Although, psychological flexibility had a direct influence on vitality when extrinsic goal attainment was controlled for (b =.824, p<.001). This suggests that the attainment of extrinsic goals does not mediate the relationship between psychological flexibility and vitality therefore the null hypothesis is accepted.

Similarly, as shown in Figure 3.9, psychological flexibility did not have an indirect influence on vitality through living in accordance with extrinsic values b=.010, BCa CI [-.004, .047]. Notably, psychological flexibility had a non-significant relationship with living in accordance with extrinsic values (b =.516, p>.05), and living in accordance with extrinsic values had a non-significant relationship with vitality, when psychological flexibility was controlled for (b =.020, p>.05). Psychological flexibility had a direct influence on vitality, when living in accordance with extrinsic values was controlled for (b =.834, p<.001). However, living in accordance with extrinsic goals did not act as a mediator in the relationship between psychological flexibility and vitality. Therefore, the null hypothesis was accepted.

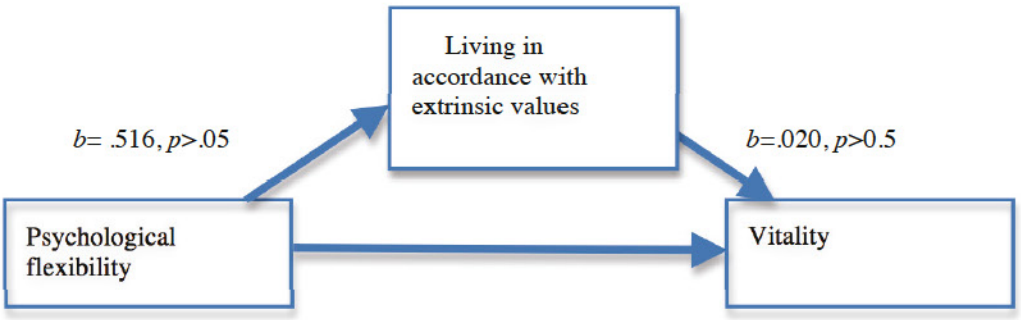
Figure 3.8. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Extrinsic Goal Attainment.



Direct effect, b=.824 p<.001

Indirect effect, b=.020, 95% CI [-.004, .077]

Figure 3.9. Model of Psychological Flexibility as a Predictor of Vitality, Mediated by Living In Accordance with Extrinsic Values.



Direct effect, b=.834 p<.001

Indirect effect, b=.010, 95% CI [-.004, .468]

4. 9 Simple Mediation Analyses with Life Satisfaction as the Outcome Variable

A series of mediation analyses were conducted to test each of the psychosocial constructs (i.e. overall basic psychological needs satisfaction, resilience, intrinsic goal attainment, living in accordance with intrinsic values, extrinsic goal attainment and living in accordance with extrinsic values) were tested as mediators in the relationship between psychological flexibility (AAQII), the predictor variable and life satisfaction (SWLS), the outcome variable. The total effect of the relationship between psychological flexibility and life satisfaction was significant, with a moderate positive effect size. 32.6% of the variance of life satisfaction scores was explained by psychological flexibility, [R^2=.326 F(1, 189)=99.175, p<.001, b= 0.756 t=9.959, p<.001]. The results of the indirect effects are presented below.

First, as can be seen in Figure 4.1, there was a significant indirect effect of psychological flexibility on life satisfaction through overall basic psychological needs satisfaction, b=0.336, BCa CI [.213, .323]. This represents a moderate effect, k^2 =.240, 95% BCa CI [.156, .325]. As psychological flexibility also had a direct influence on life satisfaction when basic psychological needs satisfaction was controlled for (b=.420, p<.001) it can be said that overall basic psychological needs satisfaction is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

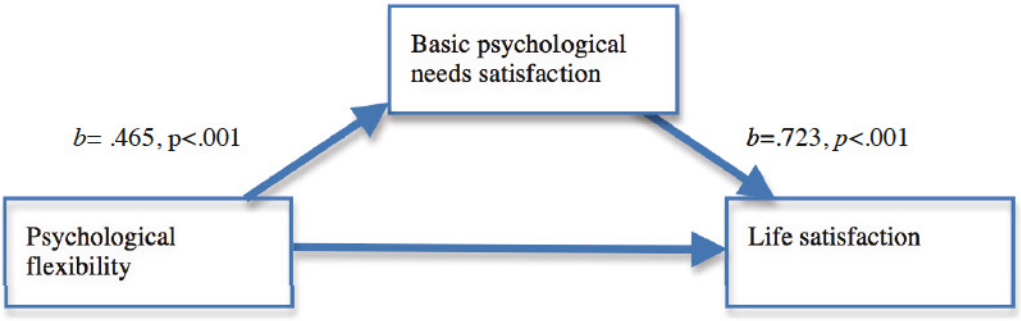
Subsequently, each basic psychological need was tested independently as a mediator of the relationship between psychological flexibility and life satisfaction. As shown in Figure 4.2, there was a significant indirect effect of psychological flexibility on life satisfaction through autonomy satisfaction, b=0.175, BCa CI [.055, .306]. This represents a moderate effect, k^2 =.130, 95% BCa CI [.044, .211]. Psychological flexibility also had a direct influence on life satisfaction when autonomy satisfaction

was controlled for (b=.473, p<.001). Therefore, it can be said that autonomy satisfaction is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

As shown in Figure 4.3, there was a significant indirect effect of psychological flexibility on life satisfaction through competence satisfaction, b=0.231, BCa CI [.109, .368]. This represents a moderate effect, k^2 = .171, 95% BCa CI [.084, .261]. Psychological flexibility also had a direct influence on life satisfaction when competence satisfaction was controlled for (b=525, p<.001). Therefore, it can be said that competence satisfaction is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

Similarly, as shown in Figure 4.4, there was a significant indirect influence of psychological flexibility on life satisfaction through relatedness satisfaction, b=0.124, BCa CI [.057, .226]. This represents a moderate effect, k^2 = .108, 95% BCa CI [.054, .180]. Psychological flexibility also had a direct influence on life satisfaction when relatedness satisfaction was controlled for (b=.632, p<.001). Therefore, it can be said that relatedness satisfaction is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

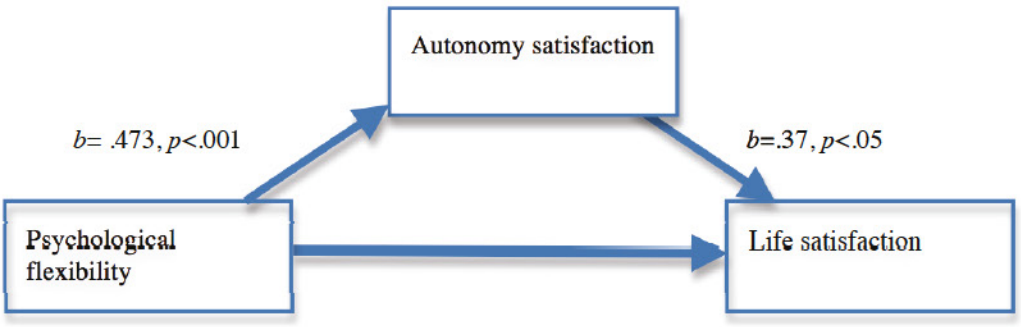
Figure 4.1. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Overall Basic Psychological Needs Satisfaction.



Direct effect, b=.420, p<.001

Indirect effect, b=.336, 95% CI [.213, .476]

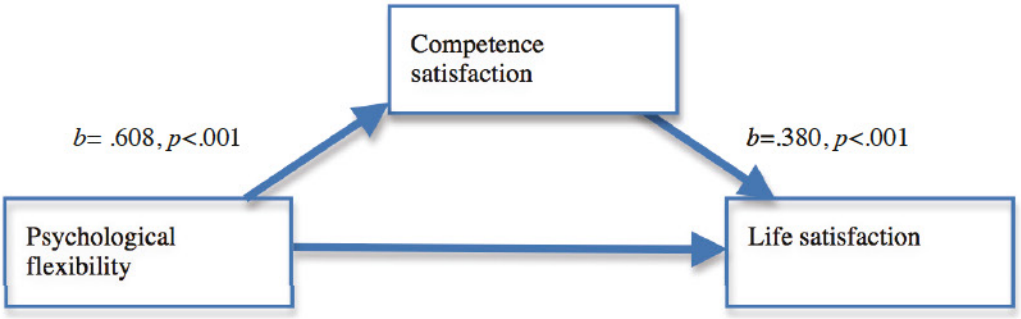
Figure 4.2. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Autonomy Satisfaction.



Direct effect, b=.581, p<.001

Indirect effect, b=.175, 95% CI [.055, .306]

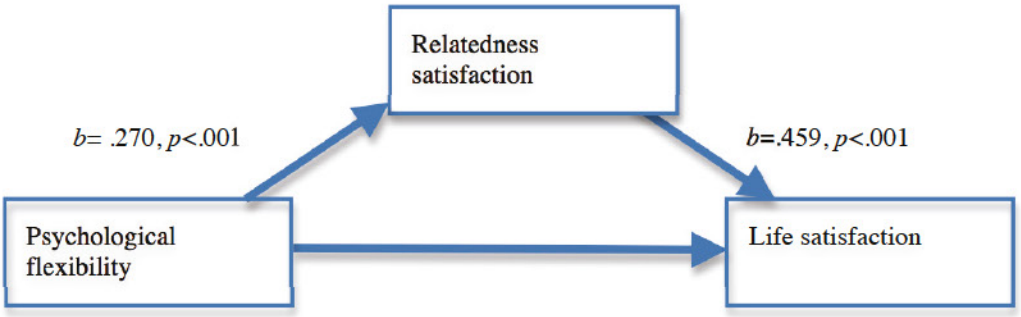
Figure 4.3. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Competence Satisfaction.



Direct effect, b=.525, p<.001

Indirect effect, b=.231, 95% CI [.109, .368]

Figure 4.4. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Relatedness Satisfaction.



Direct effect, b=.632 p<.001

Indirect effect, b=.124, 95% CI [.057, .226]

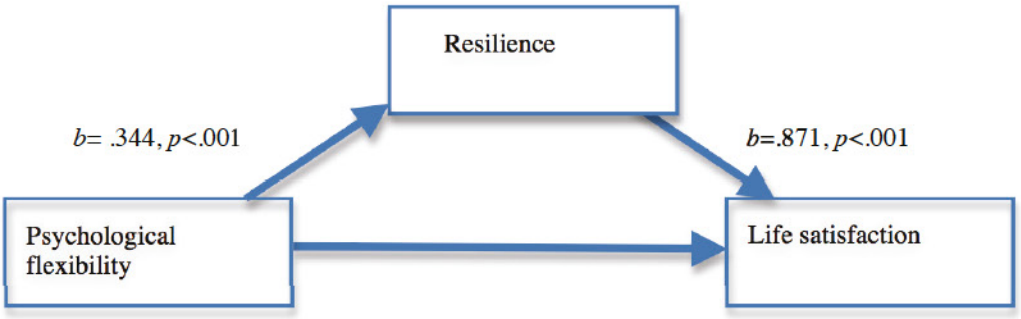
As shown in Figure 4.5, psychological flexibility had a significant indirect influence on life satisfaction through resilience b=0.299, BCa CI [.164, .457]. This effect was moderate, k^2 =.213, 95% BCa CI [.125, .308]. Psychological flexibility also

had a direct influence on life satisfaction when resilience was controlled for (b=.457, p<.001). Therefore, it can be said that resilience is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

As shown in Figure 4.6, psychological flexibility had a significant indirect influence on life satisfaction through the attainment of intrinsic goals, b=0.479, BCa CI [.190, .386]. This effect was moderate, k^2 =.224, 95% BCa CI [.151, .310]. Psychological flexibility also had a direct influence on life satisfaction when the attainment of intrinsic goals was controlled for (b=.479, p<.001). Therefore, it can be said that the attainment of intrinsic goals is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

As can be seen in Figure 4.7, psychological flexibility had a significant indirect effect on life satisfaction through living in accordance with intrinsic values, b=0.212, BCa CI [.132, .313]. This effect was moderate, k^2 =.179, 95% BCa CI [.119, .251]. Psychological flexibility also had a direct influence on life satisfaction when living in accordance with intrinsic values was controlled for (b=.544, p<.001). Therefore, it can be said that living in accordance with intrinsic values is a partial mediator of the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis is rejected in support of Hypothesis 5.

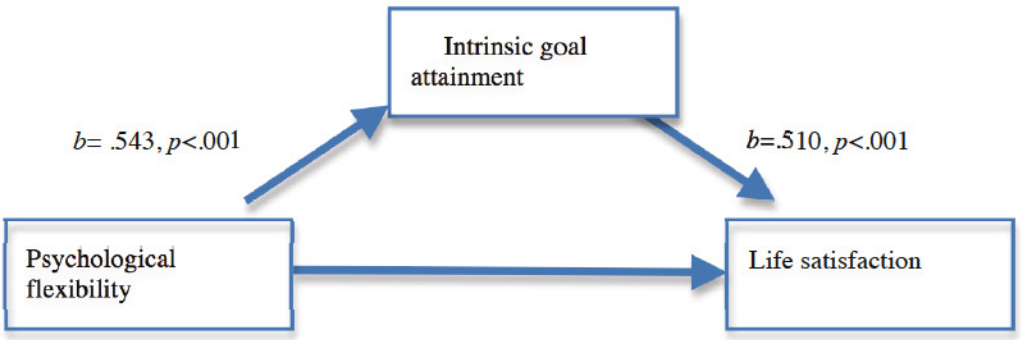
Figure 4.5. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Resilience.



Direct effect, b=.457 p<.001

Indirect effect, b=.299, 95% CI [.164, .457]

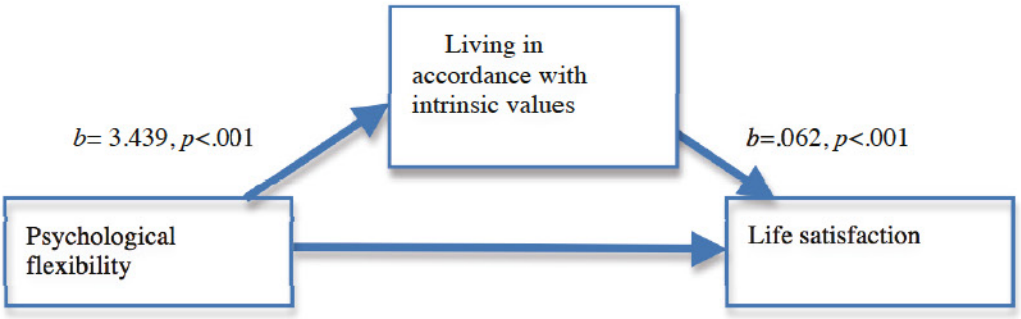
Figure 4.6. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Intrinsic Goal Attainment.



Direct effect, b=.479 p<.001

Indirect effect, b=.277, 95% CI [.190, .386]

Figure 4.7. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Living In Accordance with Intrinsic Values.



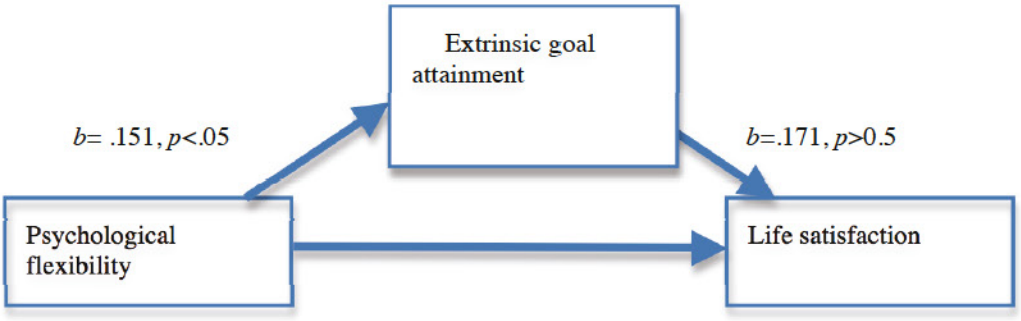
Direct effect, b=.544 p<.001

Indirect effect, b=.212, 95% CI [.132, .313]

As shown in Figure 4.8, psychological flexibility had a significant indirect influence on life satisfaction through the attainment of extrinsic goals, b=0.026, BCa CI [.003, .073], with a small effect, k^2 =.025, 95% BCa CI [.004, .067]. However, it is notable that psychological flexibility explained a small amount of variance in the attainment of extrinsic goals scores (R^2=.020, b=151, p<0.5). Then, when controlling for psychological flexibility, the attainment of extrinsic goals had a non-significant relationship with life satisfaction (b=171, p=0.053). This suggests that other variables that were not accounted for in the model may influence how psychological flexibility has an indirect influence on life satisfaction (Hayes, 2013). Although psychological flexibility had a direct influence on life satisfaction when extrinsic goal attainment was controlled for (b=.730, p<.001). This suggests that extrinsic goal attainment does not mediate the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis was accepted.

Similarly, as shown in Figure 4.9, psychological flexibility did not show a significant indirect influence on life satisfaction through living in accordance with extrinsic values, b=0.011, BCa CI [-.003, .043]. The relationship between psychological flexibility and living in accordance with extrinsic values was not significant (b=516, p>.05). And, when controlling for psychological flexibility, living in accordance with extrinsic values had a non-significant relationship with life satisfaction (b=.021, p>.05). Although, psychological flexibility had a significant direct influence on life satisfaction when living in accordance with extrinsic values was controlled for (b=.745, p<.001). This shows that living in accordance with extrinsic values did not mediate the relationship between psychological flexibility and life satisfaction. Therefore, the null hypothesis was accepted.

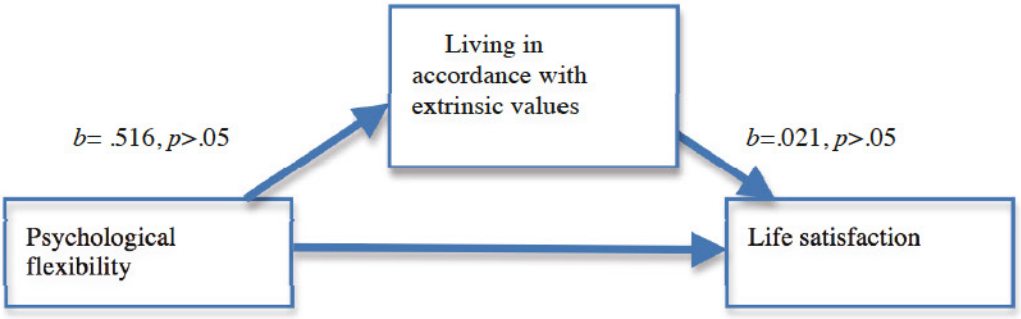
Figure 4.8. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Extrinsic Goal Attainment.



Direct effect, b=.730 p<.001

Indirect effect, b=.026, 95% CI [.003, .073]

Figure 4.9. Model of Psychological Flexibility as a Predictor of Life Satisfaction, Mediated by Living In Accordance with Extrinsic Values.



Direct effect, b=.745 p<.001

Indirect effect, b=.011, 95% CI [-.003, .043]

Table 1.5

Summary of Psychological Flexibility Indirect Effects on Psychological Health Outcomes via Psychosocial Mediators

Mediator	**Fewer Symptoms (GHQ-12)**		**Vitality (SVS)**		**Life Satisfaction (SWLS)**	
	b	k^2	*b*	k^2	*b*	k^2
Basic psychological needs satisfaction	.047	.083	.315	.208	.336	.240
Autonomy satisfaction	None *Pathway b*, *p*>.05		.168	.116	.175	.130
Competence Satisfaction	.065	.120	.253	.174	.231	.171
Relatedness satisfaction	None *Pathway b*, *p*>.05		.103	.085	.124	.108
Resilience	.083	.146	.328	.217	.299	.213
Intrinsic goal attainment	None *Pathway b*, *p*>.05		.106	.127	.479	.224
Living in accordance with intrinsic goals	None *Pathway b*, *p*>.05		0.13	.103	.212	.179
Attaining extrinsic goals	None *Pathways a* and *b*, *p*>.05		None *Pathway b*, *p*>0.05		.026 *Pathway b*, *p*>0.05	.025
Living in accordance with extrinsic goals	None *Pathways a* and *b*, *p*>.05		None *Pathways a* and *b*, *p*>.05		None *Pathways a* and *b*, *a* and *b*, *p*>.05	

Note. p>.05 indicates that pathways (a and, or b) were non significant. The Bootstrap method was used to test the indirect effects occurred within 95 % confidence intervals. Preacher and Kelly's (2011) Kappa-squared values (k^2) are included to represent the size of the indirect effect.

5. Discussion

The aim of the current research was two fold. Firstly, within SDT (e.g. Ryan and Deci, 2000) minimal research has investigated the theorised relationships between basic psychological needs satisfaction, type of goal pursuits and resilience (Ntoumanis et al, 2009). Accordingly, Hypotheses 1 and 2 expected that the basic psychological needs for autonomy, competence and relatedness, and intrinsic and extrinsic goal pursuits would be positively associated with resilience and outcomes of psychological health, respectively. Secondly, given that minimal research has explored the core ACT component of psychological flexibility (e.g. Hayes et al, 2012) in relation to the core components from SDT including basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits and resilience, Hypotheses 3 and 4 expected that the aforementioned constructs would be positively associated and that psychological flexibility would be positively associated with psychological health outcomes.

Following this, a series of simple mediation analyses were used to test Hypothesis 5, whether independently the SDT components of basic psychological needs satisfaction, type of goal pursuits and resilience act as mediators in the relationship between psychological flexibility and psychological health outcomes. Specifically, it was expected that psychological flexibility would have an indirect influence on fewer symptoms, vitality and life satisfaction through the satisfaction of the basic psychological, the type of goals they engage in and the extent to which they have resilient characteristics.

The aim of the discussion is to explore the findings from the analyses with regard to Hypothesis 1-5. The findings are discussed in relation to previous research and the

implications of the findings are considered with regard to the understanding of psychological health within the context of applied psychology professions, such as counselling psychology. Following this, the limitations of the current research are highlighted and based on the findings, suggestions are made to further the line of inquiry into the relationships between the constructs of ACT and SDT with respect to their role in facilitating psychological health.

5.1 Discussion of the Correlation Results

Deci and Ryan (2000) argue that the motivation to self-actualise is part of the natural human condition when environmental contexts are conducive to the internalisation of the needs for autonomy, competence and relatedness. According to Deci and Ryan (2000) and in line with Hypothesis 1, the findings from the current research supported that when the needs for competence and relatedness are satisfied, independently these are associated with placing importance on intrinsic goals. That is, when people felt a sense of self-efficacy and connectedness to others they also valued intrinsic aspirations, such as to be involved within the community and to learn and grow. Ryan and Deci (2001) argue that when these needs are met they support self-knowledge of what is personally meaningful and beneficial. Additionally, it can be seen that intrinsic goals offer opportunities to satisfy the needs for competence and relatedness, and therefore, it is tenable that such activities would be important when people perceive themselves as competent and related to others (Vansteenkiste and Ryan, 2013).

Deci and Ryan (2000) further argue that this is also true for autonomy. However, it is notable that the current findings showed that autonomy satisfaction was not associated with the perceived importance of intrinsic goals. By definition autonomy satisfaction refers to the ability to make self-determined choices and take volitional

action. This highlights that perceived autonomy has a cognitive and behavioural element. Therefore, autonomy cannot be perceived if action is not consistent with what is perceived to be important (Ryan and Deci, 2001).

In support of this, the findings showed to be consistent with Niemiec et al's (2009) findings, that overall basic psychological needs satisfaction and the needs for autonomy, competence and relatedness were associated with the attainment of intrinsic goals. As suggested by Deci and Ryan's (2000) organismic-dialiectical perspective, when people perceive the basic psychological needs to be satisfied that this is reflective of a level of self-cohesion and an awareness of what is personally important as well as reflecting a source of motivation to take to engage and accomplish in meaningful pursuits. Ryan and Deci (2001) suggest, "Need fulfilment is thus viewed as a natural aim of human life that delineates many of the meanings and purposes underlying human actions" (p.147). Consistent with previous research, the current findings showed that when the basic psychological needs are satisfied people are also likely to live in accordance with intrinsic values. This suggests that basic psychological needs satisfaction facilitates self-congruent action (Baard et al, 2004; Meyer et al, 2007).

Due to the limitations of employing correlation analysis and a cross sectional design, it is difficult to determine the direction of causality. Vansteenkiste and Ryan (2013) argue that the relationship between basic psychological needs satisfaction and intrinsic goal pursuits is bidirectional. They suggest that engaging in intrinsic goals can lead to the satisfaction of the basic psychological needs. For example, actively taking part in meaningful pursuits can lead to a sense of having personal volition. Taking part in activities that afford the expression and development skills can enhance feelings of competence, whilst taking part in activities with others can enhance

feelings of belongingness, connectedness and security (Vansteenkiste and Ryan, 2012).

In support of Hypothesis 1, the current findings further showed that people who perceive their basic psychological needs to be fulfilled also attain extrinsic goals such as, owning expensive possessions, having financial wealth or having an attractive image. This finding was comparable with that of Kashdan and Breen (2007) and Niemiec et al (2009), who also found that the relationship between basic psychological needs satisfaction and extrinsic goal attainment was positive, yet observably weaker when compared with the relationship between basic psychological needs satisfaction and the attainment of intrinsic goals.

To explain this finding, Deci and Ryan (2000) suggest that people who have their basic psychological needs satisfied are less likely to engage in extrinsic goal pursuits because they are more likely to have an integrated sense of self and therefore are less reliant on extrinsic rewards to experience fulfilment. Additionally, compared to intrinsic goal pursuits, overall, engagement with extrinsic goals is less conducive to the satisfaction of the basic psychological needs because they are motivated by externally regulated markers that exist outside of the person, such as social approval or perceived status through social comparison with others (Ryan and Deci, 2002). For this reason, Deci and Ryan (2000) argue that a greater tendency to engage in extrinsic goals may reflect externalised rather internalised motivations which are less conducive to the needs for autonomy and competence and which are often associated with competitiveness rather than connectedness with others.

However, Sheldon, Ryan, Deci and Kasser (2004) argue that to some extent the basic psychological needs are conducive to the attainment of extrinsic goals. Firstly, it is expected that when the basic psychological needs are satisfied, extrinsic

goal pursuits can be integrated into awareness and be pursued and regulated in a healthily way. Secondly, Niemiec et al (2009) highlight that accomplishing any goal may be attributed to, or lead to feelings of autonomy, competence and relatedness.

However, in contrast to Hypothesis 1 but consistent with Deci and Ryan's (2000) SDT, it was found that when the basic psychological needs are satisfied, people did not place importance on extrinsic goals or live according to extrinsic values. Although, given that basic psychological needs satisfaction was associated with the attainment of extrinsic goals to a small extent, the results support Sheldon and Elliot's (1999) suggestion that people engage in goals that are not consistent with their values. Kasser and Ryan (2001) also point out that extrinsic goals, such as aspiring for wealth, physical attractiveness and to own expensive possessions are greatly entwined and advocated within Western cultures, which economically are founded on materialism (Dittmar, 2008). Therefore, although these goals may be less important to people, they are arguably a necessity, for example; to have enough money to live comfortably, to present ones self well, to have a car and a mobile phone are culturally reinforced materialistic objects which serve a functional purpose.

It is notable that Huta and Ryan (2010) found that experiential rewards associated with extrinsic goal pursuits are relatively short-lived, whereas engagement with intrinsic goal pursuits that are affiliated with personal and social development, tend to have greater longevity (Huta and Ryan, 2010). Therefore, intrinsic goals arguably offer a greater opportunity for the basic psychological needs to be satisfied in comparison to extrinsic goals pursuits (Ryan and Deci, 2001; Vansteenkiste and Ryan, 2012). Overall and in line with Ryan and Deci's (2000) SDT, the findings suggest that the satisfaction of the basic psychological needs have differential relations to the importance of and engagement with intrinsic and extrinsic goal

contents and values. As such, it can be argued that the satisfaction of the basic psychological needs is more reliably associated with intrinsic rather than extrinsic goal pursuits (Ryan and Deci, 2008; Ryan and Deci, 2002).

It is notable that Ryan and Deci's (2000) SDT constructs including the needs for autonomy, competence and relatedness and engaging in meaningful intrinsic pursuits are comparable to Ryff's (1989) Theory Guided Dimensions of PWB which include; self-acceptance, autonomy, having mastery within the environment, having positive relationships with others, as well as having a sense of purpose in life and aspiring for personal growth. However, in the context of applied professions such as counselling psychology, Wei et al (2005) argue that Ryan and Deci's (2000) framework presents facilitative processes that reflect the quality of internalised resources (i.e. basic psychological needs) which are considered to influence the quality of interaction within the environment, rather than providing a description of outcome facets of PWB (Ryan and Deci, 2002). Therefore, it can be argued that the SDT framework has a greater applicability within applied professions (Wei et al, 2005; Mancini, 2008).

However, within the current research participants were asked to reflect upon the extent to which they endorsed and attained prescribed intrinsic and extrinsic goal contents. A limitation to this is that it does not account for the complexity in which goals are self-defined, motivated and pursued, specifically, the idiosyncratic meanings and influences that self-defined goals have for the person within different need-supportive or hindering environments (Sheldon et al, 2004). For example, to explore the influence of need-supportive environments and the extent to which this influences the accomplishment of self-concordant goals, Milyavskaya, Nadolny and Koestner (2014) asked participants to reflect upon the extent to which different life domains

such as work, leisure time and relationships were need-satisfying or need-thwarting. Then, participants were asked to describe a goal they had pertaining to each domain. Further to this, they were asked to answer questions to assess the extent to which the goal was felt to be autonomous (i.e. of personal volition) or controlled (i.e. regulated by external pressures).

Milyavskya et al (2014) found that in comparison with need-thwarting environments, within need-satisfying contexts participants were more likely to describe goals that were self-concordant. Further to this, participants were asked to rate the extent to which they had attained their personally defined goal. Milyavaskaya et al (2014) found the extent to which the basic psychological needs were satisfied influenced the extent to which self-concordant goals were attained. Additionally, it was found that fluctuations in the extent to which the basic psychological needs were met explained the fluctuations in perceived self-concordance.

Furthermore, based on their findings, Milyavaskaya et al (2014) argue that when the basic psychological needs are satisfied within different life domains, internalised goals (whether autonomous or controlled) are more likely to be actualised. Milyavaskaya et al (2014) highlight that when goals are set for external reasons, such as social obligation or work-related tasks, they are more likely to be attained when environments support the needs for autonomy, competence and relatedness. This highlights that whilst the basic psychological needs have been found to have differential relationships to intrinsic and extrinsic goal contents, Milyavaskaya et al (2014) add that need supportive environments are more likely to foster the attainment of self-concordant goals when they are internalised for both autonomous and controlled reasons. Furthermore, this may explain the findings from the current research that showed that basic psychological needs satisfaction was associated with

extrinsic goal attainment because extrinsic goals can reflect self-concordant actions within need supportive contexts.

In contrast to the initial literature that viewed resilience as an innate capacity, Masten (2001) proposed that future research should explore its relationship to ordinary psychosocial components and processes to more appropriately reflect that resilience is an interactive process between the person and the environment which is reflected in the ability to manage and overcome adversity (Bernard, 1991; Hermman et al, 2011). Although Ryan and Deci's (2001) SDT components including basic psychological needs satisfaction and type of goal pursuits have been hypothesised to relate to resilience (Weinstein and Ryan, 2011, Vanteenkiste and Ryan, 2012), limited research had investigated these relationships.

In line with Hypothesis 1, the findings from the current research suggest that when the basic psychological needs are satisfied, people reported having resilient attitudes towards their emotional, behavioural and social aspects of functioning (Weinstein and Ryan, 2011; Ryan and Deci, 2001). The findings indicate that when people feel autonomous, competent and related to others, they have resilient attributes and beliefs such as having an action-orientation, a sense of self-efficacy and an ability to utilise social relationships as a resource in times of hardship (Bonanno, 2004; Connor and Davidson, 2003; Lightsey, 2006). Consequently, it is suggested that the basic psychological needs reflect protective and motivational factors that influence resilience during times of perceived existential threat. As highlighted by Vansteenkiste and Ryan (2013) "Although need-supportive environments are primarily conceived as contributing to needs satisfaction, they can also play a buffering role against the emergence of malfunctioning through helping to build inner resources that contribute to subsequent coping" (p.265).

The findings from the current research are in line with Scrignaro et al's (2009) findings amongst cancer patients who were more likely to experience post-traumatic growth when patient-carer relationships fostered the needs for autonomy, competence and relatedness. Additionally, as implicated by the findings from La Guardia et al (2000) when the basic psychological needs are fostered within relationships, this is associated with attachment security. Given that a secure attachment is reflected in having positive views of the self and the world, it is arguable that when interpersonal relationships are conducive to basic psychological needs satisfaction this cultivates resilient self-beliefs.

In contrast, when the basic psychological needs are thwarted, Wei et al (2005) found that this was associated with insecure attachment styles. Wei et al (2005) argue that need hindering environments impinge upon the extent to which a person is able to organise and integrate aspects of the self. Vansteenkiste and Ryan (2013) suggest that when aspects of the self are fragmented and disorganised this can lead to defensive means of self protection which can impinge upon the extent to which a person is able to engage healthily within interpersonal relationships across different life domains.

Moreover, the current research findings provide preliminary support for Ntoumanis et al's (2009) proposition, that Ryan and Deci's (2000) basic psychological needs theory can be integrated with Lazarus' (1991) cognitive-motivational-relational theory. Specifically, that when the basic psychological needs are satisfied this creates a sense of having internal and external resources, as well as, operating as an underlying motivational force which influences the way difficult life events are appraised and responded to. Ntoumanis et al (2009) suggest that people who perceive their basic psychological needs to be met are more likely to perceive

obstacles as a challenge to be overcome rather than as a threat, which is reflected in having resilient self-beliefs.

Additionally, Ntoumanis et al (2009) suggest that when the basic psychological needs are satisfied, a person is more likely to have the motivation to persist and engage in aspired goals that are reflective of personal development. In line with Hypothesis 1, it was found that resilience was associated with the importance and attainment of intrinsic goals as well as the extent to which people lived in accordance to intrinsic values. In line with Rutter (1985) and Kobasa (1979), this suggest that when people have a capacity for resilience they are better able to persist in engaging with meaningful non-materialistic goals. Similarly, as found by Damon (2008) having meaningful intrinsic goals can act as a protective factor when faced with difficult existential experiences because, as proposed by Deci and Ryan (2000), this also acts as a marker to direct and organise behavioural choices and action. Additionally, Kashdan and Rotternburg (2010) suggest that engagement with purposeful and meaningful activities is more conducive to the development of functional self-beliefs.

It is for this reason that Steger, Sheline, Merriman and Kashdan (2013) argue that facilitating clients to develop an awareness of their purpose in life assists in identifying personally meaningful goals. Steger et al (2013) suggest that meaningful engagement is more conducive to cultivating resilience than doing what feels good, which is typically associated with the gratification of pleasure through extrinsic goals. Instead, identifying what is of upmost importance or value to the person in times of vulnerability enables a new direction for meaning to be made when closely held beliefs are challenged by traumatic life events (Steger et al, 2013).

Furthermore, Steger et al (2013) suggest that such meaningful pursuits offer a consistent source of fulfilment during times of emotional pain. It is arguable that having intrinsic goal pursuits protects a person from falling into maladaptive patterns of coping (Damon, 2008). Based on the findings from the current research, intrinsic goals can be suggested to foster resilience because they offer opportunities to satisfy the basic psychological needs and this has been found to be associated with resilience. It is suggested that exploring these relationships within future research will lead to a better understanding of the meditational properties of the basic psychological needs, intrinsic goals and resilience and their relationships to each other.

Contrary to Hypothesis 1, resilience was not found to be associated with the importance of extrinsic goals. Although resilience was found to be associated with the attainment of extrinsic goals and living in accordance with extrinsic values, these relationships were observably weaker in comparison to the relationships between resilience and intrinsic goal pursuits. However, the findings suggest that people who perceive themselves as resilient to some extent also engage in extrinsic goal pursuits. This contrasts with Ryan and Deci's (2000) perspective, that when a person is resilient they are able to experience difficult emotions persist with autonomous action, such as with intrinsic goals that are inherently beneficial. Although, in line with Sheldon et al's (2004) findings, it is tenable that extrinsic goals can be integrated into self-concordant pursuits.

However, Ryan and Deci (2000) expect that extrinsic goals function as a compensatory means of managing internal experiences when a sense of autonomy is diminished. It is tenable that extrinsic goals function as a means of coping rather than resilience, although these are closely related constructs (Weinstein and Ryan, 2011). Ryan and Deci (2000) suggest that whilst coping is a form of hedonism pertaining to

the avoidance of difficult experiences, resilience is associated with eudaimonia, to reflect that it is affiliated with the process of self-actualization.

Never the less, Coiffman, Bonanno and Gross (2007) found that repressive coping facilitated resilience amongst people who had experienced the bereavement of a spouse, as well as, within those who had not. They found that when people repressed difficult emotional experiences, others perceived they had maintained effective functioning and participants reported fewer physical and psychological symptoms. As is implicated in the attainment of extrinsic goals, Coiffman et al (2007) suggest that repressive coping can act as a protective mechanism when traumatic life events occur. Additionally, Coiffman et al (2007) highlight that a limitation of using self report measures is that given the self-deceptive nature of avoidant coping styles, those who have a repressive style may report they are coping well which may be reflected in the extent of reported resilience.

Moreover, whether in relation to coping or resilience, the current research suggests in line with Deci and Ryan's (2000) perspective, that intrinsic and extrinsic goal contents have differential relationships to outcomes of psychological health over a period of time (Kasser and Ryan, 1993, 2001; Huta and Ryan, 2010). It is suggested that future research to explore the role of intrinsic and extrinsic goal contents in coping or resilience on psychological health in a longitudinal study would facilitate an understanding of the implications of engaging in such different goals.

Overall, the findings from the current research suggest in line with Masten's (2001) view that resilience can be associated with normative protective processes, such as the basic psychological needs for autonomy, competence and relatedness and the engagement in intrinsic goals, as posited by Ryan and Deci (2000). This is consistent with previous research findings which suggest that having an action

orientation, self-efficacy and the ability to draw upon interpersonal relationships for support are conducive to resilience (Hass and Graydon, 2009; Damon, 2008). As suggested by Mancini (2008), Ryan and Deci's (2000) SDT usefully captures these components in a way that can be applied for the purpose of assessment and intervention for people in recovery from traumatic life events and to promote resilience.

The current research offers a contrasting view of resilience to that of Fredrickson (1998, 2001) and Seligman (1991) to suggest that rather than directly altering the content of emotional (i.e. positive emotions) and cognitive experiences (i.e. optimism) to facilitate resilience, cultivating opportunities to satisfy the basic psychological needs and engaging in meaningful activities offers a holistic and contextualised view of the development of realistic functional self-beliefs (Wei et al, 2005). Furthermore, accounting for the role of the interaction between environmental influences and perceived psychological resources upholds a view of psychological health that is consistent with counselling psychology's ethos (BPS, 2009).

However, it is also acknowledged that given the findings revealed high associations between the basic psychological needs satisfaction (i.e. BPNS, La Guardia et al, 2000), intrinsic goal pursuits (i.e. AI, Kasser and Ryan, 1996) and resilience (i.e. CDRISC, Connor and Davidson, 2003). It is unclear, given the conceptual relations between the items within the respective measures, the extent to which these constructs represent distinct concepts. For example, all of these constructs represent an ability to act with personal volition, have an action orientation and to utilise resources effectively within the environment (Vansteenkiste and Ryan, 2012; Rutter, 1985; Kobasa 1979; Bonanno, 2004). To better understand through further research how these constructs are related and independent and to assess how

they operate over a period of time may highlight the unique attributes of each construct with respect to their facilitation of adaptive functioning.

In view of the aim of the thesis to explore psychological health within a competence enhancement model, the contextual psychosocial components (including the basic psychological needs satisfaction, intrinsic and extrinsic goal pursuits and resilience) were tested in relation to outcomes of psychological health (Gernstein, 2006; Gelso and Woodhouse, 2003). The constructs of state vitality (e.g. SVS, Ryan and Frederick, 1997), life satisfaction (e.g. SWLS, Diener et al, 1985) and fewer psychological symptoms (e.g. GHQ-12, Goldberg and Williams, 1988) were used as indicators of psychological health outcomes. In support of Hypothesis 2, the findings showed that basic psychological needs satisfaction, intrinsic goal pursuits and resilience were associated with each outcome of psychological health.

In line with the findings from the current research, Ryan and Frederick (1997) also found that the satisfaction of the basic psychological needs are determinants of psychological health, particularly in relation to outcomes of vitality and life satisfaction and fewer symptoms of psychological distress. Vansteenkiste and Ryan (2013) suggest that when the basic psychological needs are satisfied "people have the tendency to develop toward more coherent and unified functioning, a tendency that can be observed at both the intra personal level, and interpersonal levels. At the interpersonal level, people ongoingly refine their interests, preferences, and personal values, while simultaneously bringing them in harmony with one another" (p. 264).

Ryan and Deci (2008) argue that the basic psychological needs act as a motivational influence that facilitate self-determined action, a level of integration and consistency between the person's internal sense of self and their interactions within different life domains. As such, Ryan and Deci (2008) argue that a person is more

likely to feel energised and vital. This effect is argued to be self-perpetuating because people who feel energised and vital are more likely to pursue the satisfaction of the needs for autonomy, competence and relatedness (Ryan and Deci, 2008). In line with Frederick and Ryan's (1997) proposition, it is argued that when peoples' internal and external worlds operate in harmony with each other, they experience less internal conflict that could otherwise manifest as symptoms of psychological distress.

Accordingly, the results from the current research showed support for Hypothesis 2, that in line with previous research, when people attain intrinsic goals and live according to intrinsic values they also report feeling vital and satisfied with life and report fewer symptoms of psychological distress (Kasser and Ryan, 1993; Niemiec et al, 2009). Huta and Ryan (2010) describe the propensity towards intrinsic goals as the 'eudaimonic mindset'. Huta and Ryan (2010) argue that an orientation towards intrinsic goal pursuits occurs when 'people focus more on the quality of the activity itself, and not its end result' (p.737). Huta and Ryan's (2010) findings suggest that engaging in intrinsic pursuits reaps longer-term psychological health benefits when compared with extrinsic goal pursuits. From this perspective, Ryan et al (2008) argue that intrinsic pursuits such as developing authentic relationships and aspiring for self-acceptance and personal growth are important correlates of psychological health that directly facilitate the self actualizing tendency.

In line with this, research by Sheldon et al (2004) explored the relationship between the content of participants' personally defined goals and outcomes of psychological health. Sheldon et al (2004) found that those who had a greater tendency to pursue intrinsic goals reported greater life satisfaction and positive affect than those who had a tendency to pursue extrinsic goals. Furthermore, in a longitudinal study, Sheldon et al (2004) found that when participants projected a

commitment to intrinsic goals they were more likely to experience positive changes in their wellbeing one year later. In contrast, when participants projected a commitment to extrinsic goals they were more likely to experience negative changes to their wellbeing at a one year follow up.

Pertinently, Sheldon et al (2004) aimed to reconcile suggestions that goal motives have a greater influence on well-being than goal contents. Although both the reason why a person undertakes a goal (i.e. because of autonomous regulation, or extrinsic regulation such as through obligation or insecurity) and the goal content (i.e. intrinsic vs. extrinsic) were found to independently influence psychological health outcomes, Sheldon et al (2004) found that when the motivation underlying extrinsic goals (e.g. autonomous or externally regulated) was controlled for, extrinsic goal contents independently had a negative relation to psychological health. This is echoed by Niemiec et al's (2009) findings which support that when people have a greater tendency to invest in the pursuit of intrinsic goals they are more likely to experience positive psychological health benefits.

Additionally, in support of Hypothesis 2, the findings showed that that when people attained extrinsic goals and lived in accordance with extrinsic values such as wealth, fame and admiration, they also reporting feeling vitality and life satisfaction. Huta and Ryan (2010) define a 'hedonic mindset' by a ' focus on the well-being to be obtained at the end of the pursuit' (p.737). Huta (2010) argues that taking part in activities that do not necessarily contribute directly to personal growth, such as extrinsic goals to be an important aspect of living well when they are integrated and regulated healthily.

However, extrinsic goal pursuits were not found to be associated with fewer psychological symptoms of distress. This finding aligns with Ryan and Deci's (2008)

argument that extrinsic goal pursuits, although associated with feelings affiliated with pleasure and satisfaction, are less conducive to an absence of psychological symptoms. This is attributed to the suggestion that extrinsic goal pursuits may conflict or inhibit the actualising tendency and therefore manifest in symptoms associated with psychological distress. Although Ryan and Deci (2008) suggest that vitality tends to be associated with eudaimonic functioning, it is tenable that such feelings may also arise from engaging in extrinsic goal pursuits. Additionally, it can be said that extrinsic goal pursuits may be associated with life satisfaction because at the cultural level such goals define markers of success which become internalised (Kasser and Ryan, 1993).

A limitation of the current research is that outcome measures that reflect diminished psychological health were not used and therefore it is difficult to determine the effect that engaging in different goal contents has on negative outcomes of psychological heath. Additionally, within the current research, the overall tendency to pursue intrinsic relative to extrinsic goals and vice versa was not measured in relation to psychological health outcomes. Kasser and Ryan (1996) argue that when people have an excessive and imbalanced tendency to pursue extrinsic goals that this has a negative influence on psychological health.

For example, Kasser and Ryan (2001) found that college students who expressed a greater investment in extrinsic goals had negative or neutral associations with psychological well-being, in addition to lower self-esteem, less intimate relationships and a higher likelihood of drug use compared to those who had a greater investment in intrinsic goal pursuits. Additionally, research by Huta and Ryan (2010) indicated that whilst hedonic and eudaimonic activities both related to vitality, hedonistic pursuits were associated with a greater degree of negative affect. To apply

these findings to practice, Steger et al (2013) propose that encouraging clients to set goals that are personally meaningful and beneficial to their self-development to be more reliably associated with benefits to psychological health.

Furthermore, in line with Hypothesis 2, the current research findings suggest that people who reported resilient qualities also expressed feeling vital and satisfied with life, as well as, reporting fewer psychological symptoms of distress. Research by Rossi, Bisconti and Bergeman (2007) suggests that resilience buffers against stressful life circumstances and enables a person to maintain or return more rapidly to a regular level of functioning. In a study of bereaved widows, Rossi et al (2009) found those with dispositional resilience were more likely to recover from the loss of a spouse and experience life satisfaction at a one month follow up.

However, Huebner, Suldo and Gilman (2006) argue that when a person feels satisfied with their life, this reflects the presence of protective internal and external resources such as a strong sense of self, supportive social networks and involvement in meaningful pursuits. As implicated by the current research findings, resources such as the basic psychological needs for autonomy competence and resilience, as well as, engagement with intrinsic goal pursuits have been found to be associated with life satisfaction. Huebner et al (2006) suggest that these factors represent facets of life satisfaction, which are suggested to promote resilience to traumatic life events.

The findings from the current research also suggest that life satisfaction is attributable to other constructs such as extrinsic goal pursuits, which overall are suggested to reflect a different quality of interaction within the environment that is not necessarily associated with adaptive functioning. As suggested by the findings from Kashdan and Breen (2007), over-engagement in extrinsic pursuits implicates avoidant styles of coping, whereas the basic psychological needs and intrinsic goal pursuits are

reflective of an open and active approach to living. Therefore, it is important to understand the different psychosocial correlates of life satisfaction in relation to broader aspects of optimal and diminished functioning.

Research by Campbell-Sills, Cohen and Stein (2006) found that childhood emotional neglect was associated with symptoms of anxiety and depression when people reported a diminished capacity for resilience. However, people who also experienced childhood emotional neglect yet experienced fewer psychological symptoms of distress reported having a greater capacity for resilience. This highlights that resilience has an important protective function on psychological health against the damaging impact of traumatic experiences. This suggests that when people cultivate a capacity for resilience they are better able to overcome traumatic experiences and experience optimal psychological health.

Overall, in line with the theoretical indications and research evidence, the findings from the current research supports that basic psychological needs satisfaction, intrinsic goal pursuits and resilience are important interrelated components which are associated with psychological health outcomes (Ryan and Deci, 2000; Ryan and Deci, 2001; Weinstein and Ryan, 2011; Vansteenkiste and Ryan, 2012; Connor and Davidon, 2003; Bonanno, 2004). Notably, these components fulfil the definitions of psychological health to include adaptive functioning and emotional, individual and social facets of psychological health (Herman et al, 2005; Dodge et al, 2012).

However, despite the relevance that SDT components including basic psychological needs satisfaction, goal pursuits and resilience, have in the context of counselling psychology, the SDT approach has rarely featured in the counselling psychology literature (Lopez et al, 2006; Wei et al, 2005). Whilst these components

theorise about how external environmental conditions foster self-determination and the engagement with meaningful activities even at times of hardship, it is argued that they do not deal with the potentially destructive behavioural patterns that arise in response to pervasive and aversive internal events.

Pertinently, Hayes et al (2012) argue that human suffering is ubiquitous due to the human capacity for language and cognition. This enables humans to experience and employ avoidance techniques such as repression, suppression, and distraction of internal events such as thoughts, feelings, memories and physical sensations when they are experienced (often unconsciously) as a threat and even at times when no real threat is present (Wilson and Murrell, 2003). Such avoidance patterns, characterised by psychological inflexibility, can therefore inhibit the extent to which a person is able to engage in valued actions within different life domains. The process of psychological inflexibility has been found to underlie a range of psychological and physical disorders (Hayes et al, 2004; Hayes et al, 2006). It is arguable that whilst environmental contexts and interactions within them have important characteristics that facilitate personal growth and meaningful living, such as, need-supportive environments and resources to engage in meaningful activities, Hayes et al (2012) identify that it is possible to struggle with internal experiences and languish as a result even when resources are available.

Therefore, in line with Hypothesis 3, it was expected that psychological flexibility, that is, the ability to willingly tend to uncomfortable internal experiences such as thoughts, physical sensations, memories, emotions or images and live according to valued actions, would be associated with basic psychological needs satisfaction, engagement with intrinsic and extrinsic goal pursuits and a capacity for resilience. In support of Hypothesis 3, the findings indicated that when people

reported a capacity for psychological flexibility, they also reported the satisfaction of the basic psychological needs and each need for autonomy, competence and relatedness.

It is suggested that the metacognitive capacity to willingly experience aversive internal events in the present moment and take action that is value-based, is conducive to proactive engagement within the environment in a way that nutrients such as autonomy, competence and relatedness can be fostered within potentially nurturing life domains such as interpersonal relationships, work or leisure time pursuits (Hayes et al, 2012; McCracken and Zhao-O'Brien, 2010; Wilson and Murrell, 2003). This suggests that people who may experience psychological blocks such as self-doubt, anxiety or traumatic memories (which could lead to avoidance behaviours such as withdrawal, inactivity or impulsivity) are able to get the basic psychological needs satisfied if they have a capacity for psychological flexibility (Hayes et al, 2012; McCracken and Zhao-O'Brien, 2010; Wilson and Murrell, 2003).

Additionally, a capacity for psychological flexibility can be considered to be associated with the satisfaction of the basic psychological needs, firstly, because it reflects an ability to tolerate and identify the significance of internal experiences and to have motivation to act in line with identified values (Hayes et al, 2012; Deci and Ryan, 2002). For example, being able to notice and tolerate uncomfortable internal experiences (such as thoughts, feelings or physical sensations associated with anger or anxiety) may hold vital information that can be assessed and integrated into a decision-making process to take value-congruent action. This may subsequently inform choices for action, for example expressing dissatisfaction within a work context or taking action towards a major life change despite fears of what the future could hold, thereby reaping a sense of autonomy.

Similarly, psychological flexibility is expected to be associated with feelings of competence. As previously described, the ability to be mindful over ones internal experiences, either through noticing their content without judgement or evaluation, or by attending to their meaning from a diffused position and then to persist with and accomplish valued activities and actions, is expected to reap a sense of efficacy and competence (Bond and Bunce, 2003). From this point of view, feelings of competence arise through one's ability to navigate and master internal or external obstacles in a way that is congruent with one's values (Ryan and Deci, 2000).

Additionally, psychological flexibility is defined in part by the ability to commit to valued actions, therefore it is suggested that the ability to commit to tasks and activities would offer an opportunity to develop in relevant skills and reap feelings of competence. This is implicated by Kee and Wang's (2008) findings which showed that mindfulness skills lead to improved task engagement and performance amongst athletes. Bond and Bunce (2003) specifically explored psychological flexibility within a sample of employees within a work context and based on their findings it is suggested that cultivating psychological flexibility offers a metacognitive capacity through which employees can overcome feelings of boredom or self-doubts in a way that enables them to engage in tasks and enjoy job satisfaction.

In addition, it was found that psychological flexibility had a positive relationship with the satisfaction of the basic psychological need for relatedness. In line with this finding, Barnes et al (2008) found that people who exhibited mindfulness had greater romantic relationship satisfaction and were better able to manage relationship stress. It is suggested that this guards again reactive responses and promotes effective communication, when this is held as a value (Hayes, et al, 2012).

Kabat-Zinn (1993) suggests that mindfulness enables individuals to have a non-judgmental awareness of internal experiences (i.e. thoughts, emotions, physical sensations, memories) and therefore are better able to be express their emotional needs as well as be receptive to and understanding of others. Kabat-Zinn (1993) suggests this forms the basis for healthy intimate relationships. In line with this perspective and the findings from the current research, Carson, Carson, Gil, and Baucom (2004) found that couples that participated in the mindfulness-based relationship enhancement program reported a significant increase in relationship satisfaction and a reduced level of relationship distress. Overall the findings suggest that psychological flexibility is an important psychological skill and process that is associated with the extent to which people feel their basic psychological needs are satisfied.

Pertinent to the context of counselling psychology and given that clients often seek support to change problematic behavioural patterns that maintain distress, Hayes et al (2012) suggest that the capacity for psychological flexibility facilitates people to overcome a range of problematic behavioural patterns associated with psychological inflexibility (Hayes et al, 2006). Although, a number of studies have explored the role of psychological flexibility in relation to the ability to take value-based action (McCracken and Zhao-O'Brien, 2010; Wilson et al, 2010; Bond and Bunce, 2003) this study aimed to specifically explore how this capacity relates to different goal contents, that is, intrinsic and extrinsic goals (Deci and Ryan, 2000).

Interestingly, in line with Hypothesis 3, the findings from the present research indicated that a capacity for psychological flexibility was associated with the attainment of intrinsic goals. That is, when people have a capacity for psychological flexibility they are also likely to engage in and attain meaningful non-materialistic

goals that are taken part in for the sake of the activity its self, such as personal growth, contributing to the community and to improve the world (Kasser and Ryan, 1993).

However, psychological flexibility was not associated with attributing importance to intrinsic goals. Given that the definition of psychological flexibility encompasses behavioural action processes that include having clearly defined values, in addition to a commitment to live according to these, this finding provides discriminant validity for the AAQII (Hayes et al, 2011). That is, knowing what is important is not enough to reflect psychological flexibility, however, attaining what is important reflects a capacity for psychological flexibility. In line with this, the findings from the current research showed that people who have a capacity for psychological flexibility are also likely to live according to intrinsic values.

In contrast, people who reported a capacity for psychological flexibility did not place importance on extrinsic goals or live according to extrinsic values. Although in line with Hypothesis 3, participants did report attaining extrinsic goals, such as owing expensive possessions, attaining wealth and admiration, this correlation was observably weaker in comparison to the relationship between psychological flexibility and intrinsic goal attainment. It is notable that attaining extrinsic goals may not always, or necessarily reflect that a person is engaged in avoidant behaviours and extrinsic goals (such as owning possessions, desiring wealth or fame) can be integrated healthily within a person's life style (Huta, 2010).

Moreover, extrinsic goals are reflective of materialism, which is advocated within Western capitalist cultures and way of life (Deci and Ryan, 2000). Although, the research findings by Kashdan and Breen (2007) suggest that a tendency to have a greater investment in extrinsic goals relative to intrinsic goals is related to experiential

avoidance or psychological inflexibility as well as symptoms of anxiety and depression.

In line with Hypothesis 3, the research findings supported that people who reported a tendency for psychological flexibility also reported having a capacity for resilience. Kashdan and Kane (2010) argue that people who exhibit psychological flexibility are better able to exhibit resilience within different contexts because this capacity enables people to be in touch with emotional experiences and respond in flexible ways according to situational needs. For example, it would be expected that a person who has the capacity for psychological flexibility would be less likely to become overwhelmed by internal experiences evoked by a traumatic event and therefore would be better able to take action when there is a crisis and therefore develop resilient self-beliefs.

In a laboratory study, Weinstein, Brown and Ryan (2009) found that participants who reported a mindfulness capacity performed better in an examination of a maze performance task whilst being evaluated by an examiner. Participants who exhibited mindfulness had an approach (as opposed to avoidant) coping style and reported lower levels of anxiety before and after the test. Moreover, Weinstein et al's (2009) findings indicated that mindfulness mediated the relationship between having an approach coping style and wellbeing. This suggests that the mindfulness processes that characterise psychological flexibility (i.e. experiential acceptance, self as context, cognitive de-fusion, contact with the present moment) are conducive to resilient responses during stressful situations.

Additionally, as suggested by Garland and Fredrickson (2013) a capacity for psychological flexibility may facilitate a person to prevent or alter maladaptive patterns of experiential avoidance that could otherwise perpetuate what they describe

as a downward spiral resulting from the pervading influence of a difficult event. It can be seen that psychological flexibility enables a person to willingly experience rather than react to unwanted experiential content and therefore it is suggested that this acts as a buffering process that can give rise to an alternative functional appraisal of the event or the unwanted content of internal experiences. Therefore, psychological flexibility can be seen to be associated with a capacity for resilience because it permits broader flexible action that is congruent with ones' values which is conducive to establishing functional self-beliefs (Garland and Fredrickson, 2013; Kashdan and Kane, 2010).

Overall it can be seen that the findings supported Hypotheses 1-4, to suggest that psychological flexibility, the basic psychological needs for autonomy, competence and relatedness, intrinsic goal pursuits and resilience are associated constructs which are also associated with psychological health outcomes including; fewer psychological symptoms, vitality and life satisfaction.

5.2 Discussion of the Mediation Results

Given that psychological flexibility, a psychological capacity, has been found to be associated with improved functioning and psychological health (Bond and Bunce, 2003; McCracken et al, 2007; Wicksell et al, 2008; Ruiz, 2010), it was deemed a useful line of investigation to test whether psychological flexibility has an indirect influence on psychological health outcomes specifically through the satisfaction of the basic psychological needs, intrinsic and extrinsic goal pursuits and resilience. Accordingly, to test Hypothesis 5, the aforementioned constructs were independently investigated as mediators of the relationship between psychological flexibility and each psychological health outcome including, fewer psychological symptoms, vitality and life satisfaction.

In support of Hypothesis 5, the findings from the mediation analysis revealed that the psychosocial components of basic psychological needs satisfaction, intrinsic goal pursuits and resilience, partially mediated the relationships between psychological flexibility and each outcome of psychological health including, fewer symptoms, vitality and life satisfaction. Notably, psychological flexibility consistently had a direct effect on psychological health when the psychosocial constructs were controlled for.

In line with Hypothesis 5, the results revealed that psychological flexibility had an indirect effect on having fewer psychological symptoms, vitality and life satisfaction, which was partially explained via the satisfaction of the basic psychological needs. Put another way, people who have a capacity for psychological flexibility are also likely to have fewer symptoms of psychological distress, feel energised and vital, as well as, evaluate their lives as satisfying, in part because their basic psychological needs are satisfied. Also, in support of Hypothesis 5, the findings showed that psychological flexibility had an indirect effect on having fewer symptoms, vitality and life satisfaction through the satisfaction of each independent need for autonomy, competence and relatedness.

In researching the beneficial effects of mindfulness on psychological health, Brown and Ryan (2003) conducted a laboratory study and found that people with a capacity for mindfulness were also likely to behave autonomously and experience emotional wellbeing at a momentary level. They also found that fluctuations in mindfulness were related to fluctuations in emotional wellbeing and effective self-regulation. It is suggested that mindfulness is reflective of a level of self-knowledge and self-awareness that plays an important role in the way emotions and behaviour are

regulated and enacted, and that the influence of this capacity varies within the person moment-to-moment depending on other influences.

Notably, psychological flexibility differs from mindfulness because it is defined by the ability to tolerate unwanted internal experiences as well as, encompassing an awareness of what is of value to the person within the moment (Masuda and Tully, 2012). According to Brown and Ryan (2003), mindfulness reflects a focus of attention and an awareness of what is occurring in the present moment without inference to a motivational or attitudinal stance (Masuda and Tully, 2012; McCracken and Zhao-O'Brien, 2010). Therefore, psychological flexibility lends itself to understanding autonomous self-regulating processes which explain how the need for autonomy can be satisfied, this in turn explains the psychological health outcomes, which Ryan and Frederick (1997) argue arise when the organism valuing process is occurring, that is, when self-congruent and purposeful action is taken in line with a valued life trajectory (Hayes et al, 2012).

However, it is notable that the results revealed that beyond psychological flexibility, autonomy satisfaction and relatedness satisfaction showed no unique variance in relation to having fewer psychological symptoms (Zhao et al, 2009). As suggested by Zhao et al (2009) this does not necessarily implicate the absence of an indirect effect but this does suggest that autonomy satisfaction and relatedness satisfaction are conceptually related to the psychological flexibility construct.

Similarly, when intrinsic goal attainment and living in accordance with intrinsic values were independently tested as mediators in the relationship between psychological flexibility and reporting fewer psychological symptoms, a similar effect occurred whereby beyond psychological flexibility these mediators had no unique predictive influence on reporting fewer psychological symptoms. Although research

by Grégoire et al (2010) found amongst students that a capacity for mindfulness was related to positive affect, self-acceptance and meaning in life through the engagement with personal goals. Based on the current findings, the extent to which psychological flexibility is distinct from the satisfaction of the basic psychological needs, intrinsic goal attainment and living in accordance with intrinsic values remains unclear due to their conceptual similarity.

Notably, the attainment of intrinsic goals and living according to intrinsic values did, in part, explain how psychological flexibility influences the extent to which a person feels vitality and evaluates their life as satisfying. This could be attributed to the definition of psychological flexibility, which is associated with an ability to tolerate symptoms of psychological distress and has been found to be associated with diminished symptoms of distress (Ruiz, 2010). It is possible that in comparison, vitality and life satisfaction reflect different facets of psychological health that have greater discrimination from psychological flexibility as a construct. Further research to explore the extent to which psychological flexibility shares underlying factors associated with psychological health outcomes is worthy of future research.

Additionally, in line with Hypothesis 5, the findings suggest that psychological flexibility independently has an indirect effect on determining fewer psychological symptoms, vitality and life satisfaction through resilience. Put another way, people who have a capacity for psychological flexibility are also likely to have resilient self-beliefs, which are also associated with psychological health outcomes. As posited by Garland and Fredrickson (2013), people who are able to tolerate unwanted internal events are better able to engage in adaptive behavioural patterns following the detrimental influence of aversive events on ones' habitual maladaptive

appraisal tendency. Thereby, psychological flexibility is suggested to not only enable a person to withstand potentially overwhelming triggered emotional content, but also creates an openness and approach style of coping that is characterised by an engagement in flexible behavioural responses.

Thompson et al (2011) found that following a traumatic event, those with a capacity for psychological flexibility were better able to tolerate symptoms associated with post-traumatic stress and experience psychological health. Additionally, research by Kashdan and Kane (2010) found that people who reported experiencing associated post traumatic symptoms but who were better able to employ psychological flexibility were more likely to report greater meaning in life and post traumatic growth in comparison to others who had experienced a trauma yet had a diminished capacity for psychological flexibility. Kashdan and Kane (2010) argue that a capacity for psychological flexibility may explain why some people are better able to recover and re-find meaning in life following a difficult life event.

Significantly, the attainment of extrinsic goals did not mediate the relationship between psychological flexibility and psychological health. This suggests that when people have a capacity for psychological flexibility they do not pursue and attain extrinsic goals which in turn do not influence psychological health. The only inconsistency to this was found in the relationship between psychological flexibility and life satisfaction. Although this indirect effect was small, the findings suggest that people who have a capacity for psychological flexibility also attain extrinsic goals, which in turn is associated with the extent people feel satisfied with life. As previously suggested, attaining extrinsic goals are widely advocated by Westernised cultures. Kasser and Ryan (1996) suggest that Western cultures promote materialistic values through media advertising which portrays materialistic pursuits to be an

indicator of status and this is internalised as a marker for success and when achieved will reap feelings of accomplishment and satisfaction (Kasser and Ryan, 1996; Dittmar, 2008).

Additionally, Kasser and Ryan (1996) argue that such external markers of success become internalised as part of a person's value system. This is reflective of one characteristic component of psychological flexibility, that is, to have clear values. As such, when extrinsic goals are internalised to be of value to the person and these are pursued, this is reflective of the commitment to valued action process that is characteristic of psychological flexibility. Therefore, when a person achieves an extrinsic goal that has been internalised, this reflects self-congruent valued action which may reap associated feelings of life satisfaction (Sheldon and Elliot, 1999).

However, the attainment of extrinsic goals did not mediate the relationship between psychological flexibility and having fewer psychological symptoms or vitality. This suggests that overall, extrinsic pursuits are not as conducive to psychological health and supports the differential relations between extrinsic and intrinsic goal pursuits in relation to psychological flexibility and psychological health outcomes (Kashdan and Breen, 2007; Huta and Ryan, 2010).

For example, Kashdan and Breen (2007) found within a sample of undergraduate university students, that having a greater tendency for experiential avoidance or psychological inflexibility, explained how those who had materialistic values also had reduced wellbeing. That is, people who had a greater tendency for psychological inflexibility are more likely to be entangled within the avoidance of internal experiences, to the extent that this impinges upon the extent to which they are able to express gratitude or feel a sense of meaning in life and instead is associated with symptoms of social anxiety and depression.

Overall, the findings from the present research expand upon previous research to suggest that psychological flexibility, drawn from ACT (e.g. Hayes et al, 2012) is associated with components from SDT (e.g. Ryan and Deci, 2001) including basic psychological needs satisfaction, intrinsic goal pursuits and resilience. Moreover the results suggest that psychological flexibility operates to foster psychological health in part through these psychosocial mechanisms.

5.3 Limitations and Future Research

Although the findings from the current research show preliminary support for the mechanisms through which psychological flexibility may operate to influence psychological health, it is important to outline some limitations and alternative perspectives of the findings, which in turn highlight useful future lines of enquiry.

Firstly, as suggested by Roe (2012) using a simple mediation analysis within a cross sectional design is somewhat limited because no interpretation of the causal sequence of influence can be determined. Therefore, future research would benefit by exploring the influence of psychological flexibility on the satisfaction of the basic psychological needs, engagement in goal pursuits and resilience and outcomes of health over a period of time.

Simultaneously, because psychological flexibility was found to have a number of indirect effects on psychological health outcomes, through the psychosocial mediators (i.e. basic psychological needs satisfaction, intrinsic goal pursuits and resilience) it would be worthy to take the current research a step further by exploring a multiple mediation model. Conducting a multiple mediation analysis would be appropriate to assess whether psychological flexibility operates to influence psychological health through the basic psychological needs, goal pursuits and

resilience, to better reflect what may occur within the real world (Hayes, 2013). Pertinently, using a longitudinal design would enable inferences to be made about the causal sequence of influence between psychological flexibility, the aforementioned mediators and outcomes of psychological health that occurs within the real world. Subsequently, this could facilitate the development of a wider model of psychological health that accounts for the aforementioned components (Hayes, 2013).

Secondly, Roe (2012) highlights that a limitation of using a cross sectional design is that the variables could be arranged alternatively. Because psychological flexibility showed indirect influences through the aforementioned constructs and consistently showed direct influences on psychological health outcomes, it is tenable that if psychological flexibility were placed as the mediator, it may explain how each psychosocial construct has an influence on outcomes of psychological health. Therefore, it is arguable that testing psychological flexibility as a mediator between the psychosocial constructs also warrants investigation.

Thirdly, the findings from the correlation analyses suggest that psychological flexibility, basic psychological needs satisfaction, intrinsic goal attainment, living in accordance with intrinsic values and resilience are highly correlated with each other as well as with psychological health outcomes. Moreover, the results from the mediation analyses also highlight that when psychological flexibility was controlled for, the predictive influence of the basic psychological needs, intrinsic goal pursuits and resilience was diminished in the relationship to psychological health outcomes. For this reason it is unclear the extent to which the aforementioned constructs represent distinct components of psychological health.

Within ACT, psychological flexibility is defined as the ability to notice and willingly experience unwanted internal events and persist in valued actions. Wilson

and DuFrene (2009) suggest that "values are freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioural pattern itself" (2009, p. 66). It can be seen that this definition is far reaching, and by definition is closely related to the SDT components.

For example, Deci and Vansteenkiste (2004) highlight that the basic psychological needs for autonomy, competence and relatedness are felt senses (i.e. "predominant reinforcers") which arise from self-determined action that is taken within an environmental context and in relation to others (i.e. ongoing, dynamic, evolving patterns of activity") and therefore these arguably reflect Williams and DuFrene's (2009) definition of values from an ACT perspective. This can also be said for the engagement in intrinsic goal pursuits, which entail self-determined patterns of activity that reap intrinsic rewards, as also defined by Deci and Ryan (2000). Again, Williams and DuFrene's (2009) definition of values also arguably encompasses resilience. Resilience refers to having functional self-beliefs and a commitment to acting in ways that self-determined and of direct benefit in spite of aversive internal or external events.

Moreover, the measures of psychological flexibility (AAQII-10 item version, Bond and Hayes et al, Submitted) and of basic psychological needs satisfaction (BPNS, La Guardia et al, 2000), intrinsic goal pursuits (AI, Kasser and Ryan, 1996) and resilience (CDRISC, Connor and Davidson, 2003) include comparable items. All measures reflect adopting a proactive propensity to engage efficaciously within the environment and take part in meaningful pursuits and to cultivate and draw upon healthy interpersonal relationships. The conceptual overlap in definition between the

constructs, the items of the respective measures, as well as the results from the current research have two key implications for further research to first develop.

Firstly, conducting a hierarchical regression analysis would usefully highlight the unique predictive influence that components affiliated with SDT (i.e. basic psychological needs satisfaction, intrinsic goal pursuits and resilience) have on psychological health outcomes beyond the influence of psychological flexibility (Field, 2013). Secondly, it is argued that exploring the common factors between all of the aforementioned constructs by conducting a factor analysis using each respective measure will elucidate the extent to which psychological flexibility is an overarching process or whether SDT components offer distinct factors that psychological flexibility does not account for (Field, 2013). Given that the literature from ACT and SDT have developed methods of interventions to cultivate the affiliated components of psychological health, understanding whether psychological flexibility is independent from the SDT components, or whether it is an overarching process has implications for the function of practice interventions (Ryan and Deci, 2008; Vansteenkiste and Sheldon, 2006; Wilson and Sandoz; Hayes and Strosahl, 2004).

Pertinently, the current research did not include measures to indicate psychological distress. This limited the conclusions that can be drawn regarding the potential relationships that these constructs have in relation to indicators of diminished wellbeing. Also, due to the lack of information elicited regarding contextual life challenges experienced by the participants, the current research is limited by the lack of ecological validity in understanding how SDT and ACT components function to facilitate psychological health in response to real life challenges (Field, 2013). More broadly, given that the future aim is to consider more specifically how the relationships between ACT and SDT constructs can be

understood and applied within the context of applied professions mental health professions, it is argued that future research should utilise clinical populations to observe the pattern of relationships between the constructs over a period of time and to better the understanding of how this compares with non-clinical populations.

It was found through observation that psychological flexibility yielded differential relations to intrinsic and extrinsic goal contents and with respect to their influence on psychological health as has been implicated by previous research (Niemiec et al, 2009; Sheldon et al, 2004). Future research to test the significance of the differences between psychological flexibility in relation to intrinsic and extrinsic goal pursuits and by accounting for the extent these are value-congruent may further the understanding of how goal contents interplays with the concept of values in the context of cultivating psychological health and applying these to practice.

Within the current research, information regarding the context and function of the different types of goal pursuits was not elicited through the use of the AI (Kasser and Ryan, 1996). Deci and Ryan (2000) argue that goal content (e.g. intrinsic and extrinsic) and the motivation for goal pursuits are both significant factors in determining the extent to which they foster psychological health. Deci and Ryan (2000) have outlined regulatory styles that differ by the extent to which behaviours are motivated by autonomous or controlled regulation. Moreover, exploring the function of participants self-defined goals in relation to the constructs of psychological flexibility or psychological inflexibility and in relation to psychological health outcomes would offer an understanding of the role of the psychological processes in which a person engages with life. This approach would uphold the functional contextualist philosophy that ACT is founded upon, and could lend a

greater understanding of the opportunities that SDT and ACT approaches have for integration.

Ciarrochi, Blackledge and Heaven (2006) have shown the Personal Values Questionnaire (PVQ) to be a reliable tool that measures whether people live according to their values. Participants are asked to qualitatively describe their values according to nine life domains (e.g. friendship, health, work/career) and rate against 9 items on a 5 point Likert Scale the extent to which values are endorsed autonomously or through controlled external regulation. In addition, participants are asked to rate the extent to which values are important, the attributed level of commitment to each value and the extent to which each value has been attained.

The utility of the PVQ has been explored from the perspective of SDT, Ferssizidis, Adams, Kashdan, Plummer, Mishra and Ciarrochi (2010) found that intrinsic values were associated with life satisfaction and positive affect amongst male and female participants. Whilst writing from an ACT perspective Ciarrochi, Fisher and Lane (2010) found that with a sample of patients diagnosed with cancer, self-regulated and autonomous action of intrinsic values was associated with improved wellbeing. However, it is argued here that drawing together the significance of values, different types of goal contents and psychological flexibility offers a point of convergence between ACT and SDT, which is a niche for future research to develop with the aim to cultivate psychological health.

With regard to the tools that were used to measure the constructs, it is acknowledged that an older form of the AAQII ten item version was used to measure psychological flexibility. Bond and Hayes et al (2011) have developed an equally reliable measure that is more efficient and consists of 7 items. In addition, Campbell-Sills and Stein (2007) have questioned the reliability of Connor and Davidson's

(2003) 25-item CD-RISC. They conducted an exploratory factor analysis and found inconsistent factor loadings for 6 items across two demographically similar samples. They also found that the components of hardiness and persistence reflected one factor. In light of this they designed a shortened 10 item version of the CD-RISC which showed good internal reliability (α=.85) and showed a strong correlation with the original CD-RISC (r =.92). Additionally, the 10 item CD-RISC revealed convergent validity by explaining the relationship between childhood maltreatment and the presence of psychiatric symptoms. Those with higher resilience reported fewer psychiatric symptoms whilst those with lower resilience revealed higher psychiatric symptoms. Although Campbell-Sills and Stein (2007) highlighted that future research required the scale to be tested within clinical samples.

Other methodological limitations of the current research is that the sample was obtained through a purposive sampling technique whereby participants necessitated having access to the Internet to take part in the study, as well as access to psychology research websites which may introduce a bias within the sample. For example, participants may have a greater self-awareness, knowledge and interest in psychology as well as be of a higher socio-economic status which may bias the results. Additionally, as highlighted within the method, although through observation the QQ plots indicated the data were approximately normal, the KS test suggested the presence of non-normal distributions within the constructs. The data were not transformed and outliers were not managed and this could have created a bias within the results and is recognised as a limitation.

It is important to note that the correlation analysis conducted did not use the Bonferroni correction post hoc test. As is the case with the current research, the Bonferroni correction method is typically used when multiple hypotheses are tested

simultaneously to minimise the influence of random error (Shaffer, 1995). The omission of Bonferroni correction may have increased the possibility of making a Type 1 error, whereby small correlation effect sizes are found to be statistically significant (when they are not) and the null hypothesis is rejected, when it should be accepted (Shaffer, 1995).

However, the use of the Bonferroni correction post hoc test has been a source of debate (Perneger, 1998). Perneger (1998) argues that although it minimises making a Type 1 error (by controlling the probability of making a false positive), it does so resulting in an increased probability of producing false negatives and an increased likelihood of making a Type 2 error. Therefore, using the Bonferonni correction post hoc test can mean the null hypothesis is accepted, when it is false (Perneger, 1998).

5.4 Research Contributions and Conclusion

Firstly, the preliminary findings from the current research suggest with respect to Ryan and Deci's (2000) SDT that the satisfaction of the basic psychological needs, engagement in intrinsic goal pursuits and resilience are associated components that are affiliated with psychological health (Ntoumanis et al, 2009). Secondly, the findings offer preliminary support for the relationships between psychological flexibility, the core component of ACT (e.g. Hayes et al, 2012) and Ryan and Deci's (2000) SDT components including, the satisfaction of the basic psychological needs, intrinsic goal pursuits and resilience. In line with a eudaimonic approach, which represents cultivating a meaningful life and progress towards self-actualization, the current research shows that the aforementioned constructs are related and are associated with reduced psychological symptoms, vitality and life satisfaction, (Ryan and Frederick, 1997; Huta and Ryan, 2010).

Based on the current findings it is tenable that psychological flexibility operates to influence psychological health at different functional levels, for example; a) To access the availability of resources within the environment, which afford opportunities to satisfy the basic psychological needs for autonomy, competence and relatedness, b) To choose to engage in inherently beneficial meaningful goals and c) to cultivate functional self-beliefs and take resilient action pertaining to emotional, social and behavioural aspects of functioning (Biglan et al, 2008; Garland and Fredrickson, 2013).

Pertinently, this approach is consistent with the values of ACT and the second wave of positive psychology because it adopts an integrated, process-orientated and contexualised view of psychological health (Hayes, 2013; Wong, 2011). The current research expands upon the work of Ryff (1989) and Keyes (2002) who posit prescribed dimensions of psychological health that pertain to individual and social functioning. In constrast, ACT and SDT posit facilitative processes and components that have a shared emphasis on understanding the person in the context of their life and which has greater applicability in the context of applied psychology professions (Steger et al, 2013; Wei et al, 2005; Mancini, 2008; Schneider, 2011; Lent, 2004).

From this point of view, the contextualised process-orientated processes and components such as those from ACT and SDT, uphold counselling psychology's philosophy to adopt a non-pathologizing approach and to understand the person from their subjective experience whilst offering facilitative processes conducive to empowering clients towards self-actualization and psychological health, without being prescriptive (Cooper, 2009; Strawbridge and Woolfe, 2003; White, 1973; Walsh, 2003, 2003a; Gelso and Woodhouse, 2003; Hicks and Mirea, 2012; Ryan and Deci, 2002; Hayes et al, 2012; Bhanji, 2011; Hayes, Pisterello and Levin, 2012).

It is also arguable in line with the suggestions made for further research that developing the understanding of the relationships between ACT and SDT components is advantageous because they uphold the three dimensions of psychological health; emotional, individual and social wellbeing, as defined by the WHO (Herman et al, 2005). This is also relevant within psychology broadly and fits within the competence enhancement model of psychological health that has been advocated within the BPS (BPS, 2006; Fledderus et al, 2010; Kinderman, 2009).

The findings offer a contrasting perspective of psychological health to the medical model approach and first wave of positive psychology, both of which adopt a hedonic philosophy and focus predominantly on increasing the pleasurable content of emotional experience and decreasing painful content of emotional experiences (Seligman, 1991; Duckworth et al, 2005; Fredrickson, 2001). Instead, ACT and SDT constructs contextualise facilitative components of psychological health to account for the functional role they assume in developing engaged and meaningful living (Ryan and Deci, 2002; Hayes et al, 2012; Lazarus, 2003; Held, 2004). This is pertinent to the way in which psychological dysfunction is understood and responded to by the public and mental health professionals (Johnstone, 2000; Rizq, 2012; Watkins and Schulman, 2008). Both ACT and SDT place an emphasis on processes affiliated with both dysfunction and psychological health that relate to the person's interaction within social and environmental domains, as opposed to the implication that psychological distress symptoms reflect a defect within the person (Johnstone, 2000; Rizq, 2012; Fairfax, 2009).

Never the less, further research is required to better understand the relationships between ACT and SDT components, specifically the extent to which they represent overlapping and unique facilitators of psychological health and to

conduct further research within clinical populations to assess the causal influence of the aforementioned components on psychological health over a period of time. This may develop an understanding of the implications of employing related forms of assessment and the application of associated interventions within clinical populations; to better understand how these components promote effective psychosocial functioning and psychological health beyond the remediation of symptoms of psychological dysfunction (Kinderman, 2009; Fairfax, 2009; Watkins and Schulman, 2008).

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Appendix 1.

Acceptance and Action Questionnaire II- 10 item version (AAQ II) - Bond and Hayes et al (submitted)

The following questionnaire is about how you manage your private experiences (e.g. your thoughts, images, memories, feelings and physical sensations). Please rate how true each statement is for you, where 1 = never true to 7= always true.

1	2	3	4	5	6	7
never true	**very seldom true**	**seldom true**	**sometimes true**	**frequently true**	**almost always true**	**always true**

1.	Its OK if I remember something unpleasant.	1 2 3 4 5 6 7
2.	My painful experiences and memories make it difficult for me to live a life that I would value.	1 2 3 4 5 6 7
3.	I'm afraid of my feelings.	1 2 3 4 5 6 7
4.	I worry about not being able to control my worries and feelings.	1 2 3 4 5 6 7
5.	My painful memories prevent me from having a fulfilling life.	1 2 3 4 5 6 7
6.	I am in control of my life.	1 2 3 4 5 6 7
7.	Emotions cause problems in my life.	1 2 3 4 5 6 7
8.	It seems like most people are handling their lives better than I am.	1 2 3 4 5 6 7
9.	Worries get in the way of my success.	1 2 3 4 5 6 7
10.	My thoughts and feelings do not get in the way of how I want to live my life.	1 2 3 4 5 6 7

Appendix 2.

Basic psychological needs satisfaction - ***Basic Psychological Need Scale (BPNS) – La Guardia and Ryan et al. (2000)***

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following scale to respond:

1	2	3	4	5	6	7
not at all true			somewhat true			very true

1. I feel like I am free to decide for myself how to live my life.
2. I really like the people I interact with.
3. Often, I do not feel very competent.
4. I feel pressured in my life.
5. People I know tell me I am good at what I do.
6. I get along with people I come into contact with.
7. I pretty much keep to myself and don't have a lot of social contacts.
8. I generally feel free to express my ideas and opinions.
9. I consider the people I regularly interact with to be my friends.
10. I have been able to learn interesting new skills recently.
11. In my daily life, I frequently have to do what I am told.
12. People in my life care about me.
13. Most days I feel a sense of accomplishment from what I do.
14. People I interact with on a daily basis tend to take my feelings into consideration.
15. In my life I do not get much of a chance to show how capable I am.
16. There are not many people that I am close to.
17. I feel like I can pretty much be myself in my daily situations.
18. The people I interact with regularly do not seem to like me much.
19. I often do not feel very capable.

20. There is not much opportunity for me to decide for myself how to do things in my daily life.

21. People are generally pretty friendly towards me.

Autonomy: 1, 4(R), 8, 11(R), 14, 17, 20(R)

Competence: 3(R), 5, 10, 13, 15(R), 19(R)

Relatedness: 2, 6, 7(R), 9, 12, 16(R), 18(R), 21

Appendix 3.

Resilience - ***Connor-Davidson Resilience Scale (CD-RS) - Connor and Davidson (2003)***

The following questions are about your current circumstances, abilities and beliefs. Please read the following statements and provide a rating for each one based on your reflection of the last month. Please rate you answer based on the following guide; 0= not true at all, 1= rarely true, 2= sometimes true, 3= often true, and 4= true nearly all of the time

1 I am able to adapt to change

2 I have close and secure relationships

3 Sometimes fate or God can help

4 I can deal with whatever comes

5 Past successes gives me confidence for new challenge

6 I see the humorous side of things

7 Coping with stress strengthens

8 I tend to bounce back after illness or hardship

9 Things happen for a reason

10 I give my best effort no matter what

11 I can achieve my goals

12 When things look hopeless, I don't give up

13 I know where to turn for help

14 Under pressure, I am able to focus and think clearly

15 I prefer to take the lead in problem solving

16 I am not easily discouraged by failure

17 I think of self as strong person

18 I make unpopular or difficult decisions

19 I can handle unpleasant feelings

20 I have to act on a hunch

21 I have a strong sense of purpose

22 I am in control of my life

23 I like challenges

24 I work to attain my goals

25 I have pride in my achievements

Appendix 4.

Intrinsic & Extrinsic Goals and Aspirations – *Aspirations Index (AI)* (Kasser and Ryan, 1996)

Long term goals or aspirations are things people hope to accomplish over the course of their lives. You are asked to rate on a scale of 1-7, first, how important the goal is for you (1=not at all, 4= moderately, 7=very) and second, how much you have attained this goal so far.

Extrinsic goals:

1. To be a very wealthy person
2. To have many expensive possessions
3. To be famous
4. To be admired by lots of different people
5. To have people comment on how attractive I look
6. To keep up with fashions in hair and clothing

Intrinsic goals:

1. At the end of my life, to be able to look back on my life as meaningful and complete
2. To grown and learn new things
3. To feel that there are people who really love me, and whom I really love
4. To have deep and enduring relationships
5. To help others improve their lives
6. To work to make the world a better place

Appendix 5.

Fewer Symptoms – *General Health Questionnaire 12 (GHQ12)*- Goldberg and Williams (1988)

The following questions are about your general health, please reflect on each question and rate your response for each question based on your experiences of the past 4 weeks, where 0 = never 1=sometimes 2=frequently 3=always.

Have you recently……	0 = Never	1= Sometimes	2= Frequently	3= Always
1. Been able to concentrate on whatever you are doing?				
2. Lost much sleep over worry?				
3. Felt that you are playing a useful part in things?				
4. Felt capable of making decisions about things?				
5. Felt constantly under strain?				
6. Felt you couldn't overcome your difficulties?				

7. Been able to enjoy your normal day to day activities?
8. Been able to face up to your problems?
9. Been feeling unhappy and depressed?
10.Been losing confidence in your self?
11.Been thinking of your self as a worthless person?
12.Been feeling reasonably happy, all things considered?

Appendix 6.

Vitality – *The Subjective Vitality Scale (SVS) - Ryan and Frederick (1997)*

Please respond to each of the following statements in terms of how you are feeling right now. Indicating how true each statement is for you at this time, using the following scale from 1-7: 1=Not at all true, 4= Somewhat true, 7= Very true.

1. At this moment I feel alive and vital.
2. Currently I feel so alive I just want to burst.
3. At this time I have energy and spirit.
4. I am looking forward to each new day.
5. At this moment I feel alert and awake.
6. I feel energised right now.

Appendix 7.

Life Satisfaction – ***Satisfaction With Life Scale (SWLS) - Diener, Diener, Emmons, Larsen and Griffin (1985)***

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Neither Agree or Disagree, 5 = Slightly Agree, 6 = Agree, 7 = Strongly Agree

_____1. In most ways my life is close to my ideal.

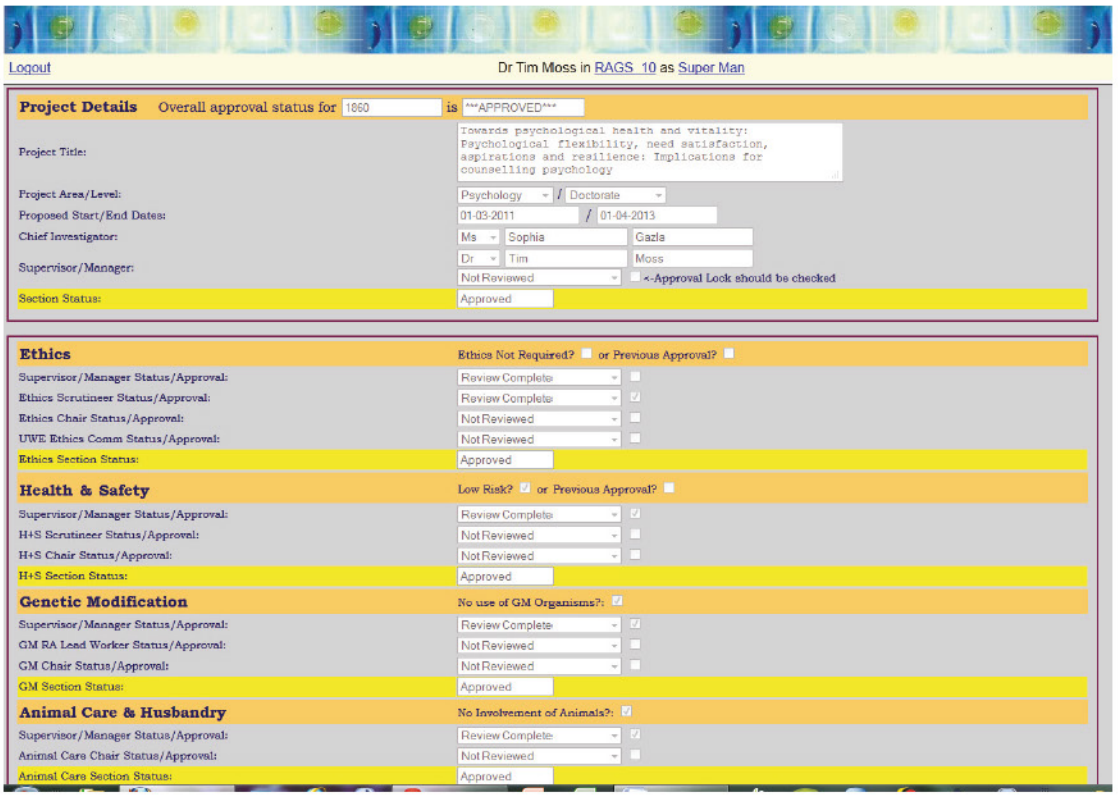
_____2. The conditions of my life are excellent.

_____3. I am satisfied with life.

_____4. So far I have gotten the important things I want in life.

_____5. If I could live my life over, I would change almost nothing.

Appendix 8. Certificate of ethical approval – University of the West of England



Logout Dr Tim Moss in RAGS_10 as Super Man

Project Details Overall approval status for 1860 is ***APPROVED***

Project Title:	Towards psychological health and vitality: Psychological flexibility, need satisfaction, aspirations and resilience: Implications for counselling psychology
Project Area/Level:	Psychology / Doctorate
Proposed Start/End Dates:	01-03-2011 / 01-04-2013
Chief Investigator:	Ms Sophia Gazla
Supervisor/Manager:	Dr Tim Moss
	Not Reviewed <-Approval Lock should be checked
Section Status:	Approved

Ethics	Ethics Not Required? or Previous Approval?
Supervisor/Manager Status/Approval:	Review Complete
Ethics Scrutineer Status/Approval:	Review Complete
Ethics Chair Status/Approval:	Not Reviewed
UWE Ethics Comm Status/Approval:	Not Reviewed
Ethics Section Status:	Approved
Health & Safety	Low Risk? or Previous Approval?
Supervisor/Manager Status/Approval:	Review Complete
H+S Scrutineer Status/Approval:	Not Reviewed
H+S Chair Status/Approval:	Not Reviewed
H+S Section Status:	Approved
Genetic Modification	No use of GM Organisms?:
Supervisor/Manager Status/Approval:	Review Complete
GM RA Lead Worker Status/Approval:	Not Reviewed
GM Chair Status/Approval:	Not Reviewed
GM Section Status:	Approved
Animal Care & Husbandry	No Involvement of Animals?:
Supervisor/Manager Status/Approval:	Review Complete
Animal Care Chair Status/Approval:	Not Reviewed
Animal Care Section Status:	Approved

Appendix 9. Participant Information Sheet

UWE BRISTOL University of the West of England

ID no.

Participant Information

Towards psychological health and life satisfaction:

Psychological flexibility, aspirations, psychological need satisfaction and resilience

Please take the time to read the following information carefully.

Hello there, my name is Sophie Gazla, I am currently training as a Counselling Psychologist and I am conducting this piece of research for my doctoral thesis. Please take the time to read through this information sheet before you decide to participate.

What is the purpose of the research?

The purpose of this research is two fold; First is to investigate whether the way we process and manage our thoughts and feelings relates to the type of aspirations we value and the degree to which we have attained them; how well our psychological needs are satisfied within our environment and social relationships, and how we manage with difficult events. Second is to investigate if these are related to the level of fulfilment and general sense of wellbeing in our life.

The aim is to get a new understanding of what makes people happy and live fulfilling and meaningful lives by investigating current theories within psychology research. It is hoped this will assist the Counselling Psychology profession to develop future research and design new ways of working with people therapeutically. More details about the study and a brief outline of the literature will be given once you have completed the study.

What will you be asked to do?

You will be given a link to a website where you will be asked to complete a survey that consists of a series of questionnaires online. First, you will be asked to read the information sheet and give your consent to take part. Please answer all questions as honestly as possible by rating against the score that reflects your experiences. You are making an important contribution!

What happens if you decide at any point that you do not want to carry on with the study?

Participating in this study is voluntary and you are free to withdraw your information without reason, at any time **two weeks** from the date you complete and submit the questionnaire. This is because individual data is difficult to remove once data analysis has started. Please email at Sophia2.Gazla@live.uwe.ac.uk

Will my participation in the study be kept confidential?

All information collected for the purpose of the study will remain confidential; data stored on paper will be held in locked filing cabinets and data stored on computers will be password protected. All identifying information will be

kept separately from data solely for the purpose of withdrawing participant data. Only anonymous data will be discussed with the research supervisors or written up in report form.

What happens at the end of the research study?

At the end of the study, the data will be analysed and the findings will be written up and submitted as part of my Doctoral thesis. The findings may also be submitted for publication in academic journals, all identifying features will be removed in order to maintain anonymity.

What are the benefits/risks of taking part?

It is possible that it will lead you to reflect on your sense of fulfilment and wellbeing with life. This could leave you feeling distressed or overwhelmed. It could be beneficial and lead to a greater awareness of your experiences. You are contributing to a new piece of research designed to help understanding and facilitate psychological wellbeing! However, if you find that taking part provokes any level of discomfort or concern then please get in touch with the following supportive agencies:

Mind – For better mental health	*Samaritans*	*Befrienders*
www.mind.org.uk	www.samaritans.org.uk	www.befrienders.org
mindinfo line: 0300 123 3393	08457 909090	
info@mind.org.uk	jo@samaritans.org	

If you have concerns, or if you would like any further information, you can contact me by e-mail Sophia2.Gazla@uwe.ac.uk or my research supervisors, Dr Tim Moss, at Tim.Moss@uwe.ac.uk or Dr Toni Dicaccavo, at Toni.Dicaccavo@uwe.ac.uk.

I hope you enjoy taking part!

University of the West of England, Frenchay Campus, Coldharbour Lane, Bristol, BS16 1QY

Appendix 10. Participant consent form

University of the West of England
BRISTOL

ID no.

Consent Form

Title of study:

Towards psychological health and life satisfaction:

Psychological flexibility, aspirations, needs satisfaction and resilience

- I confirm that I have read and understood the Participant Information Sheet for the study entitled "***Towards psychological health and life satisfaction: Psychological flexibility, aspirations, need satisfaction and resilience"*** (Yes/ No)

- Please provide your name, email address and a password (that you will remember). This is in case you decide you do not want to take part after you have submitted the survey. Your name, email address or password will not be kept with your responses, you will be allocated a number to ensure anonymity and confidentiality.

- I understand that by consenting to take part in this study I am able to withdraw my data at any time two weeks after the questionnaire is submitted without having to give reason by informing Sophie Gazla (Sophia2.Gazla@uwe.live.ac.uk)

- I understand that I will never be personally identified in any report that stems from this research.

- I confirm that I am over the age of 18.

- I am aware that my information will remain confidential and that I will remain anonymous

- I consent to take part in this study

Appendix 11. Participant debrief sheet

University of the West of England
BRISTOL

Debrief sheet

Towards psychological health and life satisfaction:

Psychological flexibility, aspirations, psychological need satisfaction and resilience

Thank you for taking part in this study! Here is some information about the purpose of this study:

This research aims to investigate how having psychological flexibility relates to a) whether people invest in intrinsic or extrinsic aspirations b) psychological need satisfaction and c) individuals' capacity for resilience. And, how these relate to our sense of life satisfaction, vitality and wellbeing.

Psychological flexibility refers to the way that we manage our private internal experiences for example our thoughts, memories, images, feelings and physical sensations. It is the ability to tend to difficult or uncomfortable internal experiences without avoiding them or needing to control them and at the same time acting in accordance with our true values and goals. According to Hayes (1999) having psychological flexibility is most conducive to our wellbeing since it allows us to engage in meaningful activities despite unpleasant internal experiences.

Intrinsic and extrinsic goals and aspirations - Intrinsic aspirations are motivated by an internal desire and fulfilment from an activity whereas extrinsic aspirations are motivated by an external pressure or reward. The literature supports the idea that investing in intrinsic rather than extrinsic goals and aspirations are associated with life satisfaction and wellbeing (Deci and Ryan, 2001). It is expected that people who have an increased level of psychological flexibility are more likely to pursue of intrinsic rather than extrinsic goals and in turn will have a greater sense of life satisfaction and wellbeing.

Psychological needs satisfaction - According to the Self-Determination theory (Ryan and Deci, 2000) people have three psychological needs that must be satisfied within their environment and social relationships to foster wellbeing, these are; autonomy, competence and relatedness. It is expected that people with greater psychological flexibility are more likely to have these needs met and therefore will experience a higher sense of life satisfaction and wellbeing.

Resilience - is the ability to effectively cope with and overcome personal difficulties or unpleasant life events (Connor and Davidson, 2003). It is expected that people with greater psychological flexibility are more likely to be able to tend to and manage aversive private experiences and stresses within the environment whilst being able to continue with their daily living and therefore experience a sense of life satisfaction and wellbeing.

It is hoped that this research can assist the Counselling Psychology profession to develop new ways of understanding how psychological constructs foster wellbeing and facilitate people to lead meaningful and satisfying lives with intention to inform therapeutic practice and provide a direction for future research.

Please remember that you have the right to withdraw your information from the study **two weeks** from the date the questionnaire is submitted. To do this, please email me at Sophia2.Gazla@live.uwe.ac.uk.

If you have any questions or comments about the study you can contact myself Sophia2.Gazla@uwe.live.ac.uk or the research supervisors Dr Toni Dicaccavo Toni.Dicaccavo@uwe.ac.uk and Dr Tim Moss Tim.Moss@uwe.ac.uk.

Many thanks for taking part!

Sophie Gazla

It is possible that you may have experienced some distress as a result of reflecting on your experience. If this is the case, please get in touch one of the agencies provided below to find one in your local area:

Mind – For better mental health	Samaritans	Befrienders
www.mind.org.uk	www.samaritans.org.uk	www.befrienders.org
mindinfo line: 0300 123 3393	08457 909090	
info@mind.org.uk	jo@samaritans.org	

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