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An examination of the relationship between positive psychological functioning and depression

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Abstract

With unipolar depression one of the most disabling illnesses in the world, it is important to appropriately conceptualise this disorder in order to inform research, diagnosis, and treatment. While many psychological theories of depression include constructs of polarity, most research and diagnostic criteria have focused on a single dimension that concentrates on the presence of negative symptomatology. This is reflective of an illness model of mental health that predominantly considers the presence of negative symptoms in terms of mood, cognitions, behaviours, and overall functioning. Nevertheless, there is strong research evidence indicating that positive and negative aspects of psychological functioning are largely separate systems that both play a part in the assessment of a person's psychological well-being. It was the intention of this research to more closely examine the existence, influence, and assessment of a positive dimension of psychological functioning with regard to depression. Nevertheless, the current research did not reveal any differential influence of positive psychological functioning on the development of depression. Indeed, the impact of depression appeared to be so significant that it served to overwhelm many aspects of positive psychological functioning – making the point of whether they are separate systems moot in a practical sense. Possible mechanisms to account for this differential impact are discussed, along with suggestions for future research.

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Chapter 1 – Introduction

Unipolar major depression is one of the most disabling illnesses in the world, and is currently considered to be the second highest source of disease burden in established market economies. While the impact of many physical illnesses is decreasing with advances in treatment, depression appears to be resistant to this trend. Indeed, depression is now considered to be the leading cause of disability in the world, and is the fourth most prominent contributor to the global burden of disease (2001). By 2020, depression is expected to be the second most prominent contributor to the global burden of disease(Mathers & Loncar, 2005; WHO, 2001). Unipolar major depression is also considered to be the most common disorder leading to suicide (WHO, 2001), with up to 15% of people experiencing the disorder taking their own life (American Psychiatric Association, 2000).Depression also leads to high morbidity that affects personal and career potential and contributes to significant health costs (American Psychiatric Association, 2000). In fact, there is increasing evidence of a fundamental connection between physical illness, health behaviour pathways, and mental health—with depression able to reliably predict problems such as heart disease, smoking, and high-risk sexual behaviour(WHO, 2001). Consequently, it is critical that depression is appropriately conceptualised, defined, and researched if its personal and social impact on individuals and the community is to be minimised.

There are a number of psychological theories and models that seek to explain depression, many of which include constructs of polarity in order to conceptualise the cognitive factors underlying psychopathology. These include, for example, rational versus irrational beliefs (Ellis, 1977), positive versus negative appraisals (Lazarus, 1966), and positive versus negative self-statements (Meichenbaum, 1977). Even though these theories and approaches include polarity in their constructs, research has often reflected or focused on only one of the poles. For example, Beck (1989) emphasises the negative aspects of dysfunctional thinking and behaviour as the most critical elements to be addressed when treating depression. Conversely, Bandura (1977) considers a positive aspect of depression when he proposes that enhancing a person’s self-efficacy is a major contributor to change.

It appears, however, that a predominantly uni-polar perspective has also been adopted for characterising and operationally defining depression for diagnostic purposes. Major Depressive Disorder is currently distinguished by a symptomatology that reflects a largely negative conceptualisation of depression. For example, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 2000), which is based on statistical rates and research reports, includes factors such as: persistent depressed mood, loss of all interest and pleasure most of the day, nearly every day, sleep disturbance (which can be either increased or decreased sleep), fatigue or loss of energy, self-reproach or guilt, poor memory and concentration, and morbid thoughts of death or suicide.

The DSM-IV typifies depression in terms of the presence of a range of adverse symptoms. Indeed, Huppert and Whittington (2003) point out that depression scales employ a symptom approach wherein the method of scoring is unable to distinguish between the presence of symptoms and the absence of well-being. As such, the current conceptualisation of depression appears to be reflective of an illness model of mental health that defines psychopathology in terms of the presence of negative symptoms (MacLeod & Moore, 2000). Implicit in this model is the assumption that alleviation or elimination of these symptoms will lead a person toward a state of mental health, much along the lines of symptom reduction in physical illnesses. Indeed, as Peterson and Seligman (2001) note, mental health may currently mean little more than the absence of disease, distress, and disorder, with the resulting aim being simply to help people fall short of the relevant diagnostic criteria. But such an approach would do little to address ‘sub-clinical’ distress that may persist after diagnostic criteria can no longer be applied, and nor would it promote the development of well-being, which might be expected to minimise relapse and recurrence. Moreover, within the theoretical foundations such as those proposed by Ellis (1977), Lazarus (1966), or Meichenbaum (1977), negative psychological functioning currently seems to be the only ‘active’ or relevant dimension in terms of restoring mental health, since an illness model appears, for the most part, to disregard one of the poles in each of these theories—that is, positive aspects of psychological functioning. This view is also consistent with the ethos of therapeutic approaches such as Cognitive-Behaviour Therapy (CBT) (A. T. Beck, 1989; J. S. Beck, 1995), which seeks

predominantly to modify dysfunctional thinking and behaviour rather than specifically fostering positive aspects of psychological functioning, even though positive aspects of behaviour are encouraged and enhanced by practicing set tasks (e.g., scheduling pleasant events). This is considered to be reflective of psychology's focus on deficit when dealing with disorders, with symptom reduction being the principal way of achieving mental health. This significant bias in psychological research has been demonstrated by Diener, Suh, Lucas, and Smith (1999), who note that for every psychological article examining positive states, there are 17 articles that concentrate on negative psychological states. It could thus be construed that the presence of positive aspects of psychological functioning is somehow considered less relevant when it comes to researching and treating psychological disorders.

It would appear that psychology's focus on deficit and dysfunction may have placed the field in the position of knowing a great deal about these negative aspects of human functioning, while knowing relatively little about the positive aspects such as well-being (see, for example, Seligman & Csikszentmihalyi, 2000). As such, the extent to which aspects of positive psychological functioning in their own right are related to certain disorders, particularly mood disorders such as depression, may not be fully understood. In clinical terms, this may have a significant impact on prevention, recovery, and providing protection from relapse and recurrence. As noted by Keyes, Shmotkin, and Ryff (2002, p. 1019), "the absence of well-being is, to our minds, a neglected malaise among prevalent formulations of mental health that emphasise exclusively negative criteria." To the extent that the opposing poles of the theories mentioned earlier and, indeed, the general positive aspects of human experience and psychology are more than passive dimensions that simply come into existence in the absence of negative symptoms, the current assessment of depression and many therapeutic approaches may not adequately consider the full extent of the disorder.

As will be seen, the review of the literature suggests that various positive aspects of psychological functioning are under-represented in research into psychological disorders and perhaps, therefore, in the prevention and treatment approaches that have been developed from these studies. However, there are indications that positive and negative aspects of psychological functioning should be

considered as two separate psychological and biological systems, and that it might therefore be important to consider positive as well as negative experiences, cognitions, and affect in any efforts to understand psychological disorders as well as mental health in general. Consequently, the current research examined the role of positive psychological functioning with regard to depression, as well as examining the distinctions between different aspects and domains of positive psychological functioning. As such, the present research sought to: 1. Identify candidate components that would enable the assessment of a broad perspective of positive psychological functioning; 2. Analyse the relationship between positive psychological functioning and depression as assessed by the Edinburgh Depression Scale (EDS); 3. Determine which factors of positive psychological functioning are most salient to depression, both in terms of its development and progression; 4. Analyse how any labile factors, and perceptions and beliefs of any stable factors of positive psychological functioning, change during the development and progression of depression; and, 5. Assess the potential effectiveness of knowledge of positive psychological functioning for the prediction of depression, diagnosis, content and focus of therapy, therapeutic progress, and the development of preventive strategies and techniques.

The identification and assessment of how positive psychological functioning relates to depression was thought to have both theoretical and practical implications. The possible benefits of the research were thought to include: better explaining the aetiology of the disorder; enabling a more accurate diagnosis of depression (along with the identification of sub-types); guiding the content, focus, and process of therapy; monitoring ongoing progress of therapy; and assisting with the development of preventive strategies and techniques. If positive psychological functioning were found to be a significant and salient aspect of depression, it would extend our current knowledge and the way in which depression is conceptualised as a mood disorder. If indeed “absence of the positive is different from presence of the negative” (MacLeod & Moore, 2000, p. 8), then it would be important to include an assessment of the positive dimension in not only the theoretical basis of depression, but also in its diagnosis and treatment.

Even if the indications and implications of the empirical evidence already reviewed are incorrect, it was considered that there would still be value in the

proposed research. Firstly, it would provide clarification that while the positive aspects of a person's life are undoubtedly important to mental health and well-being, it is only the presence of the currently conceptualised negative dimension that leads to depression. However, knowledge of the role of positive psychological functioning would likely be a valuable adjunct to the therapy, even if it continued to focus almost exclusively on overcoming the symptomatology of depression. Since developing the positive aspects of a person's life might be an important component of treating people with depression, a clear identification of a person's strengths would enable the therapist to quickly tailor a treatment plan that draws on those individual aspects that are likely to provide the most positive leverage for the client. In addition, it would also be a clear indication to the person that while their current emphasis is on the more negative aspects of their life, there are actually many positives on which they can focus and draw on to help themselves overcome the disorder.

Regardless of the outcomes specific to depression, there were also thought to be a number of benefits that can be expected to flow from greater knowledge of the role and function of a person's positive life aspects and strengths. There does not currently appear to be a method that assesses the positive dimension of a person's life on a broad scale. Consequently, identifying candidates for such an assessment instrument would provide a valuable resource on which to base further research into the positive aspects of psychology, particularly in the cognitive and affective domains. In addition, it would also provide a focus that can be expected to be of value to the general process of therapy, regardless of the presenting problem. Since people seek therapy in order to overcome problems or deficits in their functioning, it would be valuable for therapists to be aware of the importance of the positive aspects of a person's life and strengths, and how they can assist with the therapeutic process.

The most significant potential limitation of the study was that a significant number of the participants suffering from depression were experiencing what is commonly referred to as post-natal depression – some 51% of the sample was constituted of pregnant women recruited from a maternity hospital. To the extent that this is a legitimate sub-type of depression, the findings and conclusions may have been biased towards this sub-type. However, the DSM-IV (American Psychiatric Association,

2000) characterises this disorder as a specifier to major depressive disorder. That is, the diagnosis under this system would be Major Depressive Disorder with Postpartum Onset. Consequently, since the diagnostic criteria relate mainly to the time of onset (within 4 weeks after childbirth) it was considered likely that the findings could be generalised to the broader scope of depression. This potential issue was also balanced by the inclusion of first-year undergraduate students in the sample.

The following chapters examine psychological theories of depression, an analysis of the adequacy of our current conceptualisation of depression, and an examination of aspects of positive psychological functioning that may play as important a role in depression as aspects of negative psychological functioning that form the current focus of theory and clinical practice. The examination of psychological theories of depression focuses on psychological theories, rather than biological or neuropsychological theories, and presents theories such as Negative Cognitive Styles, Learned Helplessness, and the Hopelessness Theory of Depression. The following chapter looks at evidence supporting the contention that positive and negative psychological functioning may be separate systems rather than ends of a continuum. This chapter considers research in the areas of information processing, affective structure, physiological factors, interpersonal factors, intrapersonal factors, diagnostic issues, attributions, relapse and recurrence, and well-being. The next chapter examines the background and research underpinning the measures chosen for the current research, covering the areas of positive psychology in general, psychological well-being, social well-being, gratitude, and emotional well-being.

Within the context outlined above, the current research therefore focused on questions that included: (1) Is there any evidence for the independence (orthogonality) of positive psychological functioning and depression? (2) Are there differential influences of positive psychological functioning factors with respect to depression? That is, are some factors affected more than others as a person develops depression, and do some factors appear to promote resilience? (3) Can knowledge of a person's positive psychological functioning assist with the prediction of whether that person may be at risk of developing depression?

Chapter 2 – Depression

There are a number of psychological theories that seek to account for the aetiology of depression, however the three most prominent are possibly the negative cognitive styles theory (A. T. Beck, 1987, 1989), the learned helplessness theory of depression(Seligman, 1974), and the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989). This section provides a brief background to each of the theories. It is acknowledged that there are a number of biological and neuropsychological theories that seek to explain depression, however this thesis focuses on the psychological mechanisms underlying the disorder.

Negative Cognitive Styles Theory of Depression

In essence, the negative cognitive styles theory of depression proposes that an individual's early experiences lead to the development of global negative schemata(A. T. Beck, 1987; Dubovsky, Davies, & Dubovsky, 2003). These depressive schemata reflect so-called all-or-nothing assumptions such as those presented in Table 1. Beck considers that a prolonged negative bias in the way in which information is processed leads to a thinking disorder that is characteristic of depression, which includes the application of selective abstraction, overgeneralisation, and negative self-attributions.

Table 1

Typical depressive schemata(Dubovsky, et al., 2003)

If I'm not completely happy, I'll be totally miserable.
If something isn't done exactly right, it's worthless.
If I'm not perfect, I'm a failure.
If everyone doesn't love me unconditionally, then no one loves me at all.
If I'm not in complete control, I'm helpless.
If I depend on anyone for anything, I'm totally needy.

With this model, if a person's experience appears to support their schema their mood remains positive. For example, if a person strives for perfection, relies only on themself, and manages to do something exactly right, then his or her mood will be positive. However, where their all-or-nothing assumption is challenged or contradicted, the negative aspects of the person's thinking are believed to become

dominant. Moreover, these negative cognitions are thought to be often reinforced by self-fulfilling prophecies where, for example, a person who feels helpless because they are unable to influence the outcome of a difficult and complex situation may extend this by avoiding even low-level, simple stresses. This results in the person's belief that he or she can do nothing to influence the environment being 'proven' in their eyes. The ultimate outcome is thought to be that systematic errors in thinking lead to catastrophising and the generalisation of individual negative events to global negative beliefs about the self, the world, and the future – known as the cognitive triad (A. T. Beck, 1987; Dubovsky, et al., 2003).

Beck (1987) has extended his original theory to include six overlapping models of the cognitive processes applicable to depression. These include the cross-sectional model, which states that the pervasive systematic negativity of cognitive processes is a necessary but not sufficient facet of depression. The structural model states that certain negatively biased schemas become markedly more relevant as a person develops depression, thus changing cognitive processes to produce a systematic bias in data abstraction, interpretation, and both short-term and long-term memory. The stressor-vulnerability model holds that specific patterns of schemas render a person vulnerable to specific stressors. The reciprocal-interaction model states that a person's interaction with key figures in his or her life relates to the predisposition, precipitation, aggravation, prolongation, and recurrence of depression. The psychobiological model seeks to integrate biological perspectives (such as genetic and neurochemical theories) with cognitive processes. Finally, the evolutionary model sees depression as a mechanism that may have been adaptive at some point in human development, but which is no longer so.

Beck (1987) observes that we are required to take in information from the environment, and that feedback is necessary for us to determine whether we are making accurate interpretations of our surroundings. We would thus then be in a position to assess the outcomes of the actions we have taken in response to these interpretations. Indeed, Beck states that without the capacity to abstract and assess information we would be unable to produce the behaviours (including cognitions) required to successfully function in the world. However, Beck considers that these processes are modified when a person develops depression. He states that a person

experiencing depression displays deficits in both the initial assessment of the information he or she receives, along with interpretive deficits regarding feedback on his or her behaviour.

Beck (1987, p. 10) explicitly states that "It seems unwarranted to assert that 'cognitions cause depression'. Such statements would be akin to saying that 'delusions cause psychosis'." He also views "deviant cognitive processes as intrinsic to the depressive disorder, not a cause of consequence" (p. 10). Nevertheless, the negative cognitive styles theory of depression focuses on the negative experiences of the disorder, and emphasises that it is the development of negative schemata that leaves a person vulnerable to developing depression. Consequently, to the extent that positive psychological functioning may be relevant to the development of depression in some way there appears to be little explicit consideration given to it. However, Beck makes some comments that appear to acknowledge the importance of positive psychological functioning to the development of the disorder. For example, Beck(1987, p. 23) states that a depressed person negates the self-serving bias that is usually present, and which promotes effective functioning. He also considers that people can "ward off, neutralise, or compensate for negativity" through the embedding of "positive attitudinal clusters or of coping structures." Thus, it may be important to consider the potential impact of positive psychological functioning on the experience and progression of depression, particularly in light of the research indicating that positive and negative psychological functioning may reflect separate psychological systems (see Chapter 3).

Learned Helplessness Theory of Depression

Seligman (1974, 1975) extended his earlier work on learned helplessness to include an account of how depression arises. In general terms, Seligman describes learned helplessness as consisting of three interlocked aspects. The first aspect is the existence of an environment in which an important outcome is beyond control; the second is when the person's response is one of giving up; the third is the accompanying expectation that the person is unable to control the outcome (Seligman, 1992). These are usually typified as the person making stable, global, and internal attributions for bad events, leading to depression (Maier & Watkins, 2000). Learned

helplessness is considered to be evident in the presence of six symptoms (see Table 2). Seligman proposes that there are parallels between the six symptoms of learned helplessness and depression and that, as such, learned helplessness can be used to account for the development and maintenance of depression.

Table 2

Symptoms of learned helplessness (Seligman, 1992, p. 82)

1. Lowered initiation of voluntary responses.
2. Negative cognitive set.
3. Time course.
4. Lowered aggression.
5. Loss of appetite.
6. Physiological changes

The first of the symptoms of learned helplessness involves a lowered initiation of voluntary responses (Seligman, 1992). Seligman considers that the depressive symptom of psychomotor retardation is equivalent to this aspect, and is manifested in behaviours such as the person becoming isolated and withdrawn, moving slowly, finding it difficult to take actions or make decisions, and generally giving the appearance of having given up. He also considers that lowered response initiation can account for intellectual deficits in people with depression by adversely affecting their motivation, as well as leading to social deficits.

A negative cognitive set is manifested in depressed people believing that they are more ineffective than they really are (Seligman, 1992). Indeed, Seligman draws a parallel with Beck's view that this is a universal hallmark of depression. However, in the Learned Helplessness Theory of Depression, this pessimism is not generalised to environmental factors. Rather, the person is pessimistic about the effects and outcomes of his or her own actions—the more depressed a person is, the more likely he or she is to believe that their actions matter no more than chance. In essence, it is "the belief that success or failure are independent of one's efforts" (Seligman, 1992, p. 87).

With regards to time course, Seligman (1992) notes that time usually heals—and that this applies equally to depression. With endogenous depression, mood has been found to go through regular cycles, while even with reactive depression the negative mood is self-limiting and will improve if the person waits long enough. Seligman believes that this has particular implications for people wishing to kill themselves. Because the low mood will almost always improve over the course of even a few weeks, he believes that it is very likely that the person's cognitive set would change and they would be less likely to find suicide an attractive option.

In terms of a lack of aggression, people with depression are so lacking in overt hostility towards others that it prompted Freud to make this the basis of his psychoanalytic theory of depression (Seligman, 1992). However, Seligman sees a lack of aggression as simply a further restriction of the range of voluntary responses in a person with depression. Another aspect of this restriction is considered to occur with loss of libido and appetite. This lack of interest in people who were formerly found attractive and in food itself has a direct correlation with the deficits in appetite, sexual interest, and social skills seen in helpless animals.

The physiological changes that Seligman (1992) sees as most important with depression are norepinephrine depletion and cholinergic activity. He notes that the catecholamine hypothesis claims that norepinephrine is depleted in the central nervous system of people with depression. There is a parallel in animals experiencing learned helplessness, in that norepinephrine depletion produces social withdrawal and depressive-like behaviour in monkeys, and prompts a failure to escape shock in rats. Indeed, Seligman notes that when the cholinergic system is activated in 'normal' people, feelings of depression arise within minutes, with the person feeling helpless, suicidal, and self-hatred. These symptoms can be rapidly relieved when a cholinergic blocker is administered, similar to the reversal of learned helplessness when the drug has been administered in cats.

With respect to the aetiology of depression, Seligman (1992) states that learned helplessness arises when an organism learns that responding is independent of reinforcement. Consequently, the Learned Helplessness Theory of Depression holds that depression is caused by the belief that action is futile. That is, someone with

depression either believes or has learned that the aspects of his or her life that relieve suffering, bring fulfilment, or provide nurturance are beyond control. As a corollary to this theory, Seligman(1992) states that "what produces self-esteem and a sense of competence, and protects against depression, is not only the absolute quality of experience, but the perception that one's own actions controlled the experience. To the degree that uncontrollable events occur, either traumatic or positive, depression will be predisposed and ego strength determined. To the degree that controllable events occur, a sense of mastery and resistance to depression will result" (p. 99). The implication here, which Seligman (1992) states explicitly, is that relief from depression is not to be provided through symptom reduction. Rather, depression therapy should focus on helping the person to re-gain his or her belief that significant events are within their control and that they therefore have influence over the outcomes. Such an approach would not only treat a discrete depressive episode, but would also be expected to be a preventive measure for future occurrences. In his summary of treatment approaches, Seligman (1974) also highlights that many therapies to that point emphasised aspects that might now be considered consistent with positive psychological functioning. For example, he states that Beck's cognitive therapy for depression aims to change negative cognitive sets in a depressed person to more positive ones, and that it is the therapist's task to develop an optimistic expectational schema.

Hopelessness Theory of Depression

Abramson, Metalsky, and Alloy (1989) sought to revise the Learned Helplessness Theory of Depression, on the grounds that the original article did not present a clearly articulated theory of depression. It was their contention that Abramson, Seligman, and Teasdale (1978, cited in Abramson, et al., 1989) simply presented an attributional account of human helplessness, and merely discussed the implications of this account for depression. In locating Hopelessness Depression as a sub-type of depression, Abramson et al. note that depression is actually a group of disorders that are heterogeneous with regard to symptoms, cause, course, therapy, and prevention.

Abramson et al. (1989) consider that hopelessness is a proximal sufficient cause of hopelessness depression's symptomatology, in which a person holds an expectation

that certain highly desired outcomes will not occur, or that certain highly aversive outcomes will occur. This expectation is accompanied by an expectation that there is nothing that the person can do that will change the likelihood of either of these outcomes. As such, they consider that helplessness is a necessary component of hopelessness, but it is not sufficient to actually produce hopelessness. They further define two aspects of their theory, where generalised hopelessness is when a person possesses a negative-outcome or helplessness expectancy about many areas of his or her life, and circumscribed pessimism, which exists when a person exhibits the same expectancy about only a limited domain. In clinical terms, generalised hopelessness is believed to lead to severe symptoms of hopelessness depression, whereas circumscribed pessimism leads to fewer or less severe symptoms, or both.

With respect to the causal pathway of hopelessness depression, a specific sequence of events is thought to give rise to a proximal sufficient cause for a depressive episode (see Figure 1, Abramson, et al., 1989). Abramson et al. consider that one advantage of the hopelessness theory over other theories is that it specifies a sequence of events in a causal chain that culminate in a proximal sufficient cause for a depressive episode. They state that each event in the chain contributes to the likelihood of an episode of hopelessness depression, but that no discrete event is necessary or sufficient for this to occur. Rather, each event contributes to the occurrence or formation of the next link in the causal chain.

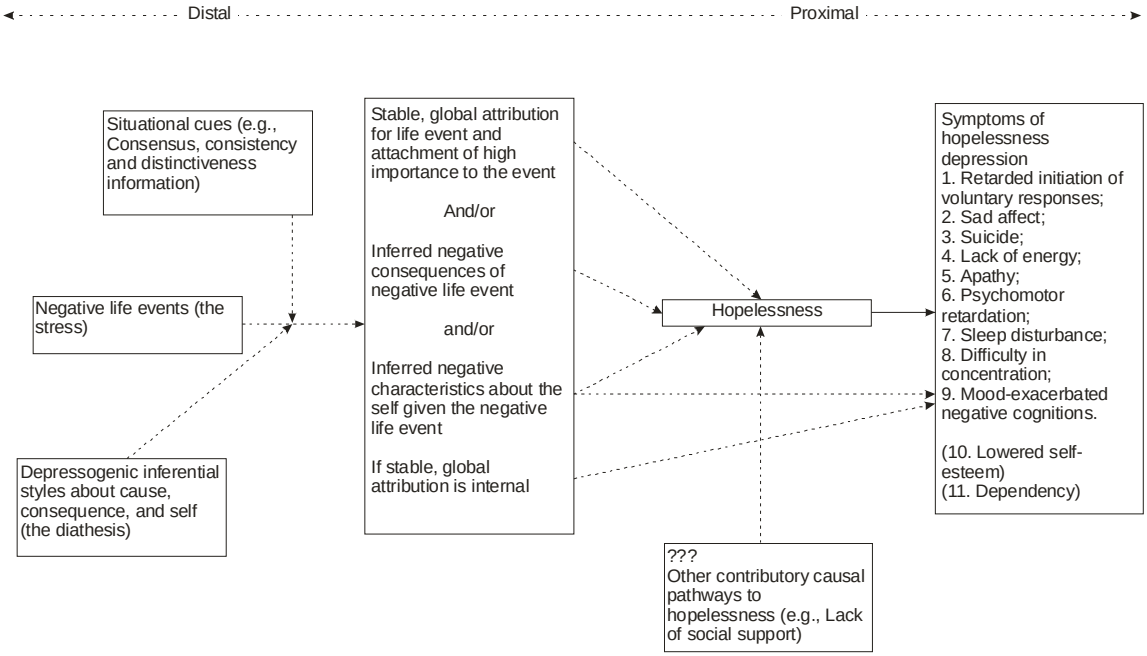


Figure 1. Causal chain specified in the hopelessness theory of depression (Abramson et al., 1989, p. 360)

The genesis of this causal chain is the perceived occurrence of negative life events or the non-occurrence of positive life events. Whether these events lead to depression is considered to depend on at least three types of inferences that people may make. These inferences serve to modulate whether the individual becomes hopeless and so develop hopelessness depression (Abramson, et al., 1989). A person may make "(a) inferences about why the event occurred (i.e., inferred cause or causal attribution), (b) inferences about consequences that will result from the occurrence of the event (i.e., inferred consequences), and (c) inferences about the self given that the event occurred (i.e., inferred characteristics about the self)" (Abramson, et al., 1989, p. 360).

With reference to inferences about why the event occurred, Abramson et al.(1989) consider that the highest degree of risk is associated with inferred stable, global causes, coupled with the event carrying with it a high degree of importance. This constellation of inferences is considered more likely to prompt relatively generalised hopelessness and, in turn, the symptoms of hopelessness depression. Inferred negative consequences are believed to moderate the relationship between negative

life events (including the non-occurrence of positive life events) and hopelessness depression by influencing the likelihood of becoming hopeless.

It is considered that with each of the preceding theories of depression, the focus and emphasis has been on explaining how an individual develops the set of negative symptoms that characterise the diagnostic criteria of the disorder. Such a reductionist approach, which is reminiscent of a medical approach to physical illness, has largely ignored the influence of, or impact on, positive psychological functioning in a formal sense. This is in spite of Beck (1987, 1989) and Seligman (1974, 1975) appearing to at least implicitly acknowledge the need to engage in developing positive psychological functioning in treatment. These approaches have not considered the extent to which "absence of the positive is different from presence of the negative" (MacLeod & Moore, 2000, p. 8), leading to a possible consequential risk of depression not being adequately conceptualised. There are strong indications that positive and negative psychological functioning represent the operation of separate functional systems, and so they might be expected to differentially and concordantly play a part in the aetiology of depression. The next chapter examines the research evidence for positive and negative psychological functioning reflecting separate systems.

Chapter 3 – Separate Systems

There is strong evidence from a wide variety of research that in psychological terms: (1) positive and negative psychological functioning largely reflect separate functional systems; and, (2) they *both* play a part in determining a person's overall psychological well-being. As mentioned, however, the dominant view of mood disorders in particular appears to largely ignore the possibility that positive psychological functioning is relevant to the development and maintenance of depression. This chapter will examine areas relevant to the current research in which there is evidence of this functional separation and independence.

Information Processing

Schwartz and Garamoni (1989) have proposed and developed an information-processing model of positive and negative cognition. Known as the 'States of Mind' (SOM) model, it simultaneously considers positive and negative dimensions in order to determine a balance between the two that can be used to describe psychopathology. Within this model, *positive* and *negative* refer to either the evaluative-affective content of cognitions (e.g., good/bad, happy/sad), or their functional impact (e.g., goal facilitating/goal inhibiting, adaptive/maladaptive). The SOM model includes five states of mind that comprise different proportions of positive and negative cognition: positive dialogue, internal dialogue of conflict, negative dialogue, positive monologue, and negative monologue. Schwartz and Garamoni hypothesise that people are very accurate in monitoring their thoughts and feelings in order to maintain a balance of positive and negative elements that is determined by a cognitive-affective set point. Self-regulatory actions are considered to operate in order to return a person to this set-point if the actual state of mind varies significantly from it. The optimal set point is considered to be a ratio of positive to negative elements closely approximating the golden section proportion of .618, with any deviations of significant duration in either direction representing increasing degrees of psychopathology.

Within this SOM model, *positive dialogue* is considered to be the state of mind that characterises a well-adjusted individual (termed a realistic optimist), whose positive cognitions constitute .618 of the internal dialogue, with negative cognitions comprising the remaining .382. This state of mind is thought to result in a state of

general positivity in cognition and mood while, at the same time, giving maximal attentiveness to negative, threatening events. Conversely, while maintaining the same balance, *negative dialogue* reverses the proportions between the two domains. This results in a person who can be characterised as being moderately anxious or depressed, since the set point is established at an unfavourable balance. Interestingly, Schwartz and Garamoni (1989) propose that such individuals will also experience stress and become anxious when experiencing positive changes. This is something that they consider may underlie resistance to therapeutic change. An *internal dialogue of conflict* is defined as a state of mind in which the positive and negative elements of cognition are each symmetrically balanced at .5 of the overall structure. This state of mind is believed to be associated with indecision and doubt, resulting in mild levels of anxiety, depression, and obsessionality. An internal dialogue of conflict can be adaptive, however, and may even be necessary for growth and development when it is a transitory state of conceptual conflict. *Positive monologue* represents a state of mind that is typified by positive cognitions constituting .69 or more of the total. Since it also lacks a set-point, this state of mind is considered to be unstable and results in the person striving to return to one of the three previous balanced states of mind. People with this state of mind experience hypomania or mania, or become excessively assertive. The final state of mind, *negative monologue*, is one in which negative cognitions comprise .69 or more of the total, resulting in an undiluted negativity with which extremely severe psychopathological states are associated. Similar to an internal dialogue of conflict, a negative monologue may be adaptive in the early stages of coping with catastrophe. However, it is thought to be more normally typified by profound depressive states and acute panic.

Schwartz and Garamoni (1989) conducted a re-analysis of 27 studies of normal, anxious, and depressed people in order to test whether the model adequately described existing data. This re-analysis provided evidence to demonstrate that the model could adequately account for the data in all cases except positive and negative monologue. Insufficient data prevented them from making a proper analysis of the severe psychopathological conditions considered to be related to these particular states of mind. Nevertheless, Schwartz and Garamoni consider that the re-analysis demonstrates the importance of undertaking bi-dimensional assessment of cognition

and affect in research into psychopathology. Their evidence indicates that it would be inappropriate to focus exclusively on one dimension, since any given state of mind is best described by a blending of positive and negative elements. The authors consider that their findings also have a number of clinical implications, with psychotherapists being advised to conceptualise the change process in terms of moving towards the healthy balance of positive and negative elements reflected by the SOM model. Rather than focusing only on positive thinking or the reduction of dysfunctional thoughts and beliefs (as is the current focus of many psychological interventions), therapy should seek to develop realistic and balanced thinking in which negative elements serve as important inhibitory, motivating, and buffering functions.

Affective Structure

Depression is classified in the DSM-IV (American Psychiatric Association, 2000) as a mood disorder. Consequently, it might be expected that any definition or conceptualisation of depression should consider mood in its entirety. Watson and Tellegen (1985) have noted that there is empirical evidence to support the presence of two bipolar dimensions within an affective structure. Their re-analysis of nine major studies found two independent, uncorrelated dimensions of Positive Affect and Negative Affect. Positive Affect is considered to represent the degree to which a person expresses a zest for life, while Negative Affect is the extent to which a person feels upset or unpleasantly aroused. Within each of these dimensions, it is possible for a person to be in a state of emotional arousal or high affect. For example, someone who is high in Positive Affect may be considered active, elated, enthusiastic, or excited. Someone who is low in Positive Affect may be thought of as drowsy, dull, sleepy, or sluggish. Conversely, a person high in Negative Affect may be distressed, fearful, hostile, nervous, or scornful, while someone low in Negative Affect would be considered calm, placid, at rest, or relaxed. Because these dimensions are believed to be orthogonal, it is also possible to consider emotional states involving an interaction between the two. For example, someone who is high in Positive Affect and also low in Negative Affect is characterised as being in the Pleasantness domain, and would be described as content, happy, kind, satisfied, or warm hearted.

Figure 2 depicts the various interactions between the two dimensions. As well as being of interest in the wider study of affect and mood, Watson and Tellegen point out that these dimensions may also be important when seeking to understand psychopathology. They cite studies demonstrating that Positive and Negative Affect are differentially related to ratings of anxiety and depression. For example, Hall (1977, cited in Watson & Tellegen, 1985) found that depression was more related to low Positive Affect than to Negative Affect, while anxiety was highly related to Negative Affect but unrelated to Positive Affect. In fact, Tellegen (1985) proposes that a description of depression as lowered Positive Affect (specifically, nonpleasurable disengagement) is consistent with one of the required diagnostic criteria: that of loss of interest or pleasure (American Psychiatric Association, 2000). Watson and Tellegen also note that brain asymmetry may be indicated, in that the left cerebral hemisphere plays an important role in the regulation of Positive Affect, whereas the right cerebral hemisphere is more important in the regulation of Negative Affect (Sackeim & Weber, 1982, cited in Watson & Tellegen, 1985). The author considers that since depression is a mood disorder, and mood should be examined in terms of two independent dimensions, it is necessary to consider depression in terms of these positive and negative dimensions, along with the concepts of balance proposed by the SOM model (Schwartz & Garamoni, 1989).

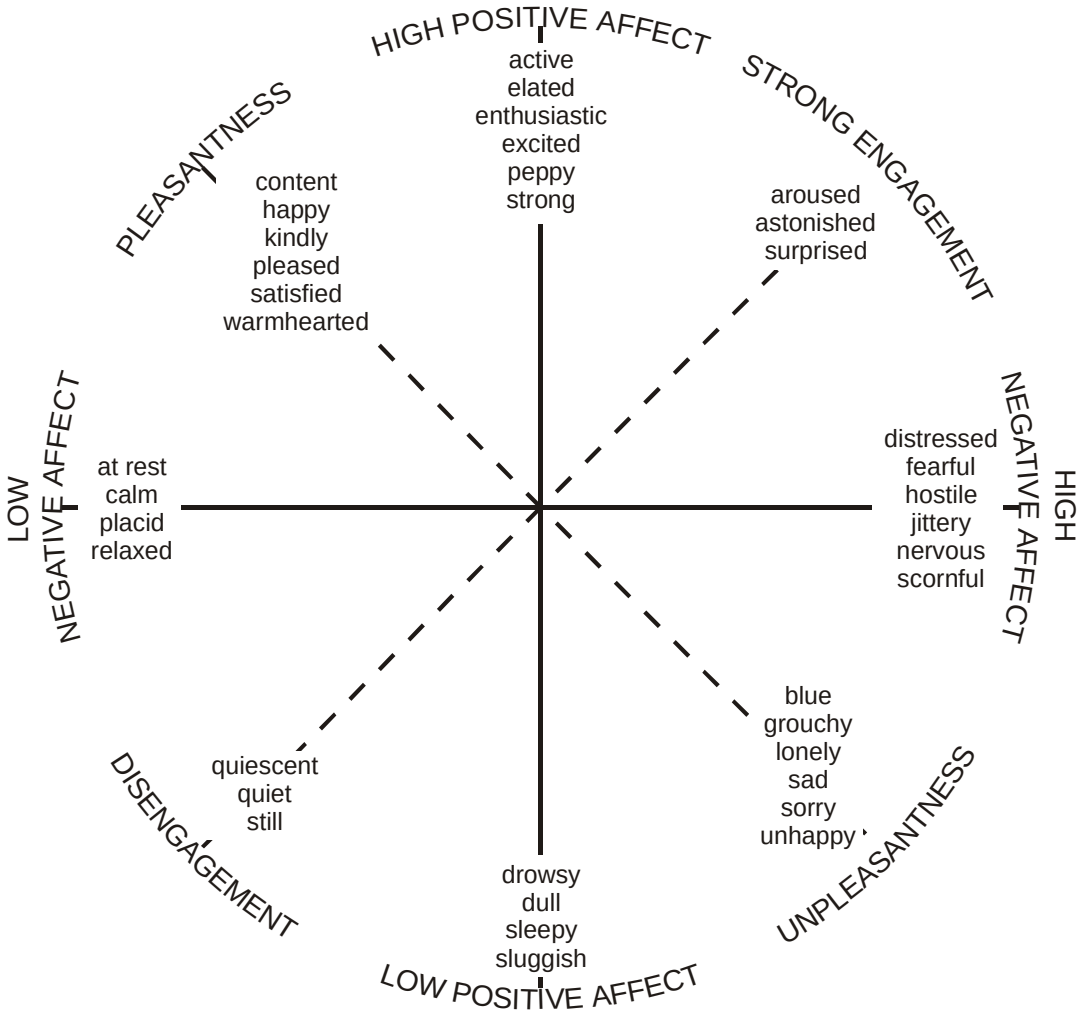


Figure 2.The two-factor structure of affect (Watson &Tellegen, 1985).

Physiological Factors

As mentioned by Sackeim and Weber (1982, cited in Watson & Tellegen, 1985), there is support for positive affect being influenced by physiological factors that are separate from those affecting negative affect. Ashby, Isen, and Turken (1999) have developed a neuropsychological theory of positive affect, refuting that it represents the opposite end of a continuum from negative affect. They consider that positive affect is associated with increased dopamine levels, which result in many of the behaviours and cognitions associated with positive affect such as consolidation of long-term memory, the enhanced operation of working memory, and the ability to engage in creative problem solving. They do not believe that negative affect is simply a reduction in dopamine levels, which would be the case if the two forms of affect were indeed polar opposites. Rather, they demonstrate that only positive affect is

significantly influenced by dopamine levels, and that negative affect is not the opposite of positive affect in either its behavioural or cognitive effects. This is supported by Ashby et al.'s findings that lower dopamine levels result in anhedonia (flattened affect) rather than negative affect. Indeed, Ashby et al. consider that happiness and sadness are mediated by independent neural pathways in addition to being localised in different cerebral hemispheres, as noted by Watson and Tellegen (1985). Consequently, it appears that it would not be sufficient to simply reduce negative affect in order to concomitantly increase positive affect—something that current therapeutic interventions appear to have as a basic assumption.

Interpersonal Factors

A number of studies in a wide range of areas have also supported the importance of concurrently considering positive and negative elements when examining psychological functioning. In a summary of his research, Fincham (1997) proposed that positive marriage quality and negative marriage quality are best considered as two separate dimensions. In examining response latency in terms of the time taken (in milliseconds) to make an evaluative response about a partner, Fincham found that such judgements are multidimensional, and are comprised of positive and negative domains. The studies have also found gender differences—for husbands the negative dimension was shown to account for significantly more variance in overall marriage quality, while for wives the positive dimension accounted for significantly more variance. Fincham concludes that positive and negative dimensions of marital quality are relatively independent, and can each be separately studied, with the relative strength of each dimension likely to be important when seeking to understand marital quality and its impact on other areas of functioning. As well as supporting the existence of separate positive and negative dimensions in individual psychological functioning, Fincham's study also demonstrates the importance of these dimensions at an interpersonal level.

Intrapersonal Factors

Dua (1993) conducted a series of six studies that sought to examine the impact of negative and positive affect on stress, depression, self-esteem, assertiveness, Type A behaviours, psychological health, and physical health. Dua considers that a person's psychological health and any psychological problems that he or she may face are best

predicted through positive and negative affect mediated by thoughts *and* day-to-day experiences. He constructed the Thoughts and Real-Life Experiences (THARL) scale in order to measure the degree to which people's thoughts and day-to-day experiences produce positive and negative affect. The THARL was administered to a total of 454 participants over the six studies, with the results in all studies supporting the premise that negative affect due to thoughts was correlated with negative affect due to day-to-day experiences, and that positive affect due to thoughts was correlated with positive affect due to day-to-day experiences. In addition, the studies demonstrated that: high negative affect and low positive affect were associated with depression; well-being was correlated with low negative affect and with high positive affect; high negative affect was associated with low self-esteem (there was no influence of positive affect on self-esteem); and assertiveness was not correlated with either positive or negative affect. As such, this series of studies suggests that in order to assess depression, well-being, and self-esteem, it is necessary differentially and concurrently to consider the relative contributions of positive and negative affect, as well as the impact of daily life events at an intrapersonal level. Dua's findings agree in part with those of Schwartz and Garamoni (1989), who also found that positive and negative affect play differential roles in depression.

Diagnostic Issues

An important aspect of research into positive and negative dimensions relates to whether knowledge of how a person is placed on both aspects is useful to the diagnostic and therapeutic process. For example, would being able to differentiate between the two dimensions enable the identification of depressive sub-types? In this regard, Jolly, Dyck, Kramer, and Wherry (1996) examined 60 adults diagnosed with unipolar major depression in a study examining the relation among sociotropy and autonomy, positive and negative affect, and two subtypes of depression. Sociotropy (or social dependency) describes a person's investment in positive interchange with other people, while autonomy refers to an individual's investment in preserving and increasing his or her independence, mobility, and personal rights. A sociotrope depends on external sources of social interaction for gratification, motivation, direction, and modification of their ideas or behaviour. An autonomous person's sense

of well-being depends on internal factors that enable them to preserve the integrity and autonomy of his or her domain and to direct their own activities. The study employed a range of measures, including the Positive and Negative Affect Schedule (PANAS), the Personal Style Inventory II, the Beck Depression Inventory, and the Symptom Checklist 90 (SCL 90R). Jolly et al. found that there are differential effects of positive and negative affectivity, as well as indications that they are related to some personality constructs. Negative affectivity and sociotropy were found to be very similar and positively correlated, in that depressed sociotropic people tend to be distressed and experience a range of negative emotional states (e.g., fear, anger, sadness, guilt, contempt, and disgust). Conversely, there was a strong negative correlation between positive affect and autonomy, with depressed autonomous individuals being highly self-critical and possessing low self-esteem. Low positive affect was found to be a factor that could differentiate depressed autonomous people from depressed sociotropic people. The study also found that negative affectivity did not discriminate between anxious or depressive symptoms, as shown by Schwartz and Garamoni (1989) and Dua (1993). More importantly, negative affectivity did not differentiate subtypes of depressive phenomena, while positive affectivity demonstrated a strong relationship with autonomous depressive symptoms. As such, knowledge of a positive dimension that included an assessment of positive affectivity would enable the differential diagnosis of at least these two depressive sub-types.

Attributions

As well as being able to differentiate between depressive sub-types, information about a person's positive dimension may also assist with therapeutic outcomes. Johnson, Han, Douglas, Johannet, and Russell (1998) conducted a study that examined whether people's attributions for positive life events predicted recovery from depression. This research examined 52 depressed inpatients of a psychiatric facility, and assessed whether people who attribute positive life events to global and stable causes will become hopeful and, therefore, less depressed when positive events actually occur. Johnson et al. found that such attributions did indeed lead to decreased hopelessness that, in turn, decreased depressive symptoms. As well as demonstrating the contribution of both positive life events and attributions associated with these events to recovery from depression, the research found that assessing people in these

terms in order to predict recovery was more effective than measuring depressotypical symptoms during the course of therapy. Indeed, depressotypic cognitions were found not to predict recovery at all, suggesting that positive cognitions (such as enhancing attributions for positive life events) may be more important in recovering from depression than depressotypical cognitions such as those outlined in the diagnostic criteria of the DSM-IV (American Psychiatric Association, 2000).

Relapse and Recurrence

In spite of much research into developing effective treatments for depression, there are still high rates of relapse—anywhere between 20% and 36% according to Williams (1992). As such, understanding and dealing with the factors that reduce relapse and recurrence are critical to not only the outcome of a particular therapeutic intervention, but also to prevention of relapse and recurrence. Once again, the importance of positive functioning and events has been demonstrated in addressing these issues. Ilardi, Craighead, and Evans (1997) noted that there is only equivocal support for the role of negative attributions for events with regard to depression onset or relapse in their study of factors that predicted relapse in 50 depressed patients over four years. They found neither dysfunctional attitudes nor negative event attributions to be significantly associated with depressive relapse. Rather, positive attributions that included the tendency to make internal, stable, and global attributions for positive events were a significant and substantial buffer against relapse, as shown in Johnson et al. (1998). Since positive event attributions are more important than negative event attributions as determinants of relapse risk, Johnson et al. consider that positive event attributions may help build resilience to subclinical dysphoric states that occur before remission.

Well-Being

Huppert and Whittington (2003) developed a new method of measuring positive well-being, based on the 30-item version of the General Health Questionnaire (GHQ-30), which focuses on psychological rather than somatic symptoms. The GHQ-30 asks whether the respondent has experienced each of the 30 symptoms, with half of the questions worded positively, and half negatively. Huppert and Whittington proposed that by more closely examining the positive responses to the positively

worded items, they would be able to develop a meaningful measure of positive well-being that is based upon a widely used and accepted psychometric instrument. Their research was conducted on 9,003 participants taking part in the British Health and Lifestyle Survey from 1984-1985, and who were demonstrated to be representative of the adult British population.

Huppert and Whittington (2003) contend that their results confirm the relative independence of positive and negative affect. This is because of: (1) the different distributional properties of the positive and negative well-being scales; (2) the differing pattern of scores for men (but not women) across the three age groups that were examined; and (3) the observed positive and negative scores that were significantly different to what they expected. Further, they note that it might be expected high scores on positive well-being would be associated with few psychiatric symptoms, and that low scores on positive well-being would be associated with a higher number of psychiatric symptoms. However, the data showed that the respondents with low scores on *both* scales reported few symptoms. Thus, these participants reported few symptoms, but were lacking in positive well-being, as opposed to those with high scores on both scales, who reported more symptoms mixed with a degree of positive well-being.

In their examination of health and social factors that might be related to well-being, Huppert and Whittington (2003) found that negative well-being is associated with physical health problems and a lack of social support, but that these factors are not as strongly associated with positive well-being. They point out that this finding has important implications for assessing quality of life, since if such an assessment focuses on examining negative measures there is a danger of drawing incorrect conclusions about the impact of a treatment or health condition. Rather, they state that a valid measure of quality of life would need to include positive as well as negative well-being.

Huppert and Whittington (2003) also highlight a difference between their research and the traditional way of considering the impact of unemployment. The view that unemployment is associated with depression was not supported by their data. Instead, they found that a lack of paid employment was more strongly associated with a reduction in positive well-being than by an increase in psychological symptoms such as depression and anxiety. They propose that this discrepancy of views has arisen

because of the confounding of positive and negative affect in depression scales, thus eliminating the possibility of distinguishing between the presence of symptoms and the absence of well-being.

Chapter 4 – Measures

The current study employed a number of measures of positive psychological functioning, along with a measure of depression. Because of the broad research questions being considered, it was thought important to include as wide a range of measures of positive psychological functioning as was reasonably possible. The measures were applied on two occasions (Time 1 and Time 2), with the hope being to capture participants who made a transition from not being depressed to depressed (see Chapter 5 – Method for more information).

Depression

The EDS was developed to detect postnatal depression, as opposed to being a measure of symptom severity (Eberhard-Gran, Eskild, Tambs, Opjordsmoen, & Samuelsen, 2001). The instrument has been reported to have good sensitivity (68%–96%), good specificity (78%–100%), and positive predictive value (PPV) of approximately 70% (Quigley, Myer, & Howland, 2006). Indeed, the PPV was found to be approximately 89% in a recent Australian study (Milgrom, Ericksen, Negri, & Gemmill, 2005). In addition to its focus on the detection of postnatal depression, the EDS has been found to have satisfactory specificity (85%) and sensitivity (79%) in a community sample of non-postnatal women (John L. Cox, Chapman, Murray, & Jones, 1996), which supports its use with this group and, therefore, in the current research. Furthermore, Green (1998) has demonstrated that the EDS can also be used as a continuous measure of dysphoria, both postnatally and antenatally, for research purposes. The internal consistency of the combined items in the present study was .89 for the Time 1 data.

Positive Psychology

The current conceptualisation of the field of positive psychology and the degree of research interest in the area appears to stem largely from articles such as that by Seligman and Csikszentmihalyi (2000). Seligman and Csikszentmihalyi note that psychology's focus has predominantly been on pathology, within a disease model of human functioning. Rather than being a wide-ranging 'science of mind' or 'science of behaviour' (Reber, 1995), Seligman and Csikszentmihalyi propose that psychology has largely ignored aspects such as well-being, happiness, contentment, and satisfaction.

While this view has received increased attention in the past few years, it is not a new perspective. Maslow (1954, p. 354, cited in Linley, Joseph, Harrington, & Wood, 2006) stated that "The science of psychology has been far more successful on the negative than on the positive side. It has revealed to us much about man's shortcomings, his illness, his sins, but little about his potentialities, his virtues, his achievable aspirations, or his full psychological height. It is as if psychology has voluntarily restricted itself to only half its rightful jurisdiction, and that, the darker, meaner half." Indeed, Seligman, Steen, Park, and Peterson (2005) note that the development of Character Strengths and Virtues: A Handbook and Classification (2004, cited in Seligman, et al., 2005) was largely in response to the field of psychology's inability to describe, classify, and 'diagnose' psychological well-being. According to Seligman and Csikszentmihalyi (p. 5), the field of positive psychology aims to "catalyse a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities." More recently, positive psychology has been defined as "the scientific study of optimal human functioning. At the meta-psychological level, it aims to redress the imbalance in psychological research and practice by calling attention to the positive aspects of human functioning and experience, and integrating them with our understanding of the negative aspects of human functioning and experience. At the pragmatic level, it is about understanding the wellsprings, processes and mechanisms that lead to desirable outcomes" (Linley, et al., 2006, p. 8).

As might be expected in a relatively new area of research interest, a wide range of methods have been developed to assess the various aspects of positive psychological functioning. As such, it was considered necessary to reflect this wide range of current methods and foci in order to ensure, as far as possible, that positive psychological functioning was appropriately assessed. The following sections examine each of the broad areas selected for consideration during the current research.

Psychological Well-Being. Ryff (1989b) has developed an instrument for measuring psychological well-being (PWB) in response to what she saw as neglect when it comes to defining PWB's essential features. Her development of the instrument was based on the integration of several theoretical domains, which she thought would assist in the definition of dimensions of positive functioning that had not arisen from prior research. Ryff(1989b) believed that this previous literature failed

to identify important facets of positive functioning because of its lack of any theoretical rationale. Ryff (1989b) drew on a number of perspectives, including Maslow's self-actualisation, Rogers' fully functioning person, Jung's views on individuation, and Allport's work on maturity. These perspectives were supplemented by Erikson's psychosocial stage model, Buhler's basic life tendencies that work toward the fulfilment of life, Neugarten's descriptions of personality change in adulthood and old age, and Jahoda's positive criteria of mental health. Ryff (1989a) had previously presented an integration of these approaches as a parsimonious summary of well-being, and proposed six core dimensions that are thought to present different challenges that people must meet as they seek to achieve positive psychological functioning (Ryff, 1989b; Ryff & Keyes, 1995). According to Keyes, Shmotkin, and Ryff (2002, p. 1008), "people attempt to feel good about themselves even while aware of their own limitations (1. Self-acceptance). They also seek to develop and maintain warm and trusting interpersonal relationships (2. Positive relations with others) and to shape their environment so as to meet personal needs and desires (3. Environmental mastery). In sustaining individuality within a larger social context, people also seek a sense of self-determination and personal authority (4. Autonomy). A vital endeavour is to find meaning in one's efforts and challenges (5. Purpose in life). Lastly, making the most of one's talents and capacities (6.Personal growth) is central to PWB" (dimension numbering added).

Ryff's (1989b) development of the PWB instrument employed a sample of 321 men and women, drawn from three age categories: young (*n*=133, mean age=19.53 years, *SD*=1.57), middle-aged (*n*=108, mean age=49.85 years, *SD*=9.35), and older adults (*n*=80, mean age=74.96 years, *SD*=7.11). In terms of formal education, some 60% of her middle-aged participants had completed four years of university (with nearly one-third having completed graduate school), and 47% of her older participants had completed four years of university (approximately 30% of whom had undertaken graduate school). As well as being well educated, her participants were also considered to be healthy, and most rated their financial status as excellent or good. With regard to marital status, almost all of the young participants were single, most of the middle-aged participants were married, and approximately half of the older participants were

married. In addition, most of the participants described themselves as Catholic or Protestant. While Ryff acknowledged that these demographic characteristics limit the generalisability of her findings, she considered that they provided a useful context in which to assess optimal psychological functioning.

Ryff (1989b) sought to construct a self-report instrument that would serve as an indicator of the six dimensions of PWB that had been derived from the various theoretical formulations she examined. Table 3 presents the scale definitions in terms of high and low scorers.

Table 3

Definitions of Theory-Guided Dimensions of Well-Being (taken from Ryff, 1989b, p. 1072)

Autonomy
High-Scorer: Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behaviour from within; evaluates self by personal standards.
Low-Scorer: Is concerned about the expectations and evaluations of others; conforms to social pressures to think and act in certain ways; relies on judgements of others to make important decisions.
Environmental Mastery
High-Scorer: Has a sense of mastery and competence in managing the environment; controls a complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.
Low-Scorer: Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.
Personal Growth
High-Scorer: Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing one's potential; sees improvement in self and behaviour over time; is changing in ways that reflect more self knowledge and effectiveness.

Low-Scorer: Has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested in life; feels unable to develop new attitudes or behaviours.

Positive Relations with Others

High-Scorer: Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.

Low-Scorer: Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; not willing to make compromises to sustain important ties with others.

Purpose in Life

High-Scorer: Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

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

Self-Acceptance

High-Scorer: Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life.

Low-Scorer: Feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities; wishes to be different than what one is.

As part of the development of the instrument, Ryff (1989b) compared the results to six existing measures of psychological functioning, chosen because they were well-known assessments of psychological well-being and adjustment for middle-aged and older adults. These measures included Bradburn's (1969, cited in Ryff, 1989b) Affect Balance Scale, the Life Satisfaction Index (Neugarten, Havighurst, & Tobin, 1961, cited in Ryff, 1989b), Rosenberg's (1965, cited in Ryff, 1989b) Self-Esteem Scale, the

Revised Philadelphia Geriatric Center Morale Scale (Lawton, 1975, cited in Ryff, 1989b), Levenson's (1974, cited in Ryff, 1989b) Locus of Control subscales, and Zung's (1965, cited in Ryff, 1989b) Self-Rating Depression Scale (SDS). Ryff found that the new PWB scale correlated positively and significantly with the previous measures of positive psychological functioning (with coefficients ranging from .25 to .73), and negatively and significantly with previous measures of negative psychological functioning (with coefficients ranging from −.30 to −.60). Ryff contended that these findings are preliminary evidence for the validity of her PWB scales. In addition, even though Ryff found high intercorrelations between sub-scales such as self-acceptance and environmental mastery (which correlated .76), and self-acceptance and purpose in life (which correlated .72), she reported that the scales showed differential patterns of correlation with other measures. Ryff also highlights the findings that the correlated dimensions load onto different factors and show differential age profiles. Taken together, Ryff considered that these factors provide sufficient evidence that the dimensions represent different facets of positive psychological functioning.

Ryff and Keyes (1995) later examined the factor structure of the PWB instrument. In addition, they sought to replicate the age and sex differences from the original study, and compare the relationship to happiness, life satisfaction, and depression. Their telephone study employed a sample of 1,108 adults over the age of 25 years. As with Ryff's (1989b) original study, the participants were categorised according to age, with 133 younger adults (aged between 25 and 29), 805 midlife adults (aged between 30 and 64), and 160 older adults (aged above 65). In addition, the sample could again be considered well educated, healthy, with few financial challenges, and in long-term relationships. Whereas Ryff's original study had employed 20-item scales, Ryff and Keyes used three of the 20 items because of the time and cost restrictions of a telephone study. Nevertheless, the abridged scales correlated between .70 and .89 with the original scales. Ryff and Keyes (1995) employed structural analyses of the data, and tested five models that they considered might adequately explain the data. They found that a six-factor model with a superordinate single construct best explained the data. They considered that this superordinate construct represented a single domain of well-being. Ryff and Keyes proposed that

"there is a hierarchical structure in which general well-being has its effects through the six content domains specified a priori by guiding psychological theory" (p. 723).

A dominant theme in Ryff's (Ryff, 1989a, 1989b; Ryff & Keyes, 1995) work has been the apparent inadequacy of traditional measures of well-being such as happiness and life satisfaction. She considers that the use of happiness as a construct subject to empirical examination has perhaps partly arisen because of Bradburn's (1969, cited in Ryff, 1989b) translation and subsequent conceptualisation of the Greek word eudaimonia. Bradburn translated 'eudaimonia' as 'happiness', and operationally defined it as the balance between positive and negative affect. However, Ryff considered that eudaimonia is defined more precisely as "the feelings accompanying behaviour in the direction of, and consistent with, one's true potential" (Waterman, 1984, p. 16, cited in Ryff, 1989b). It is the consequent emphasis on happiness (described as short-term affective well-being) that Ryff considers has prompted much of the literature to take a narrow perspective of positive psychological functioning. This aspect was further examined by Keyes, Shmotkin, and Ryff (2002), in which they contrasted hedonic well-being (characterised as happiness and, to a lesser extent, life satisfaction) and eudaimonic well-being (characterised as dealing with human potential). Keyes, Shmotkin, and Ryff sought to examine whether hedonic and eudaimonic well-being were taxonomically distinct. In this context, they characterised hedonic well-being as subjective well-being (SWB), and eudaimonic well-being as psychological well-being (PWB). SWB incorporates the concepts of life satisfaction (which is reflective of a person's perceived distance from their aspirations in life) and happiness (which is often thought of as the balance between positive and negative affect). In contrast, Keyes, Shmotkin, and Ryff note that while SWB commonly defines well-being in terms of overall life satisfaction and happiness, PWB takes the perspective of human development and the optimal resolution of existential life challenges. These include aspects such as self-actualisation, full functioning, maturity, and individuation. They considered that both perspectives examine different features of what it means to be well, with SWB involving global evaluations of affect and life quality, and PWB involving thriving through meeting existential challenges of life.

Keyes, Shmotkin, and Ryff (2002) found that SWB and PWB are related but distinct facets of well-being. They consider that their research adds weight to the notion that personal happiness depends on a commitment to a meaningful and purposeful life. Consequently, they believe that a consideration of both aspects can operate to better define what it means to experience well-being, or a lack thereof. They also state that SWB and PWB might interact, such that "higher SWB may help preserve positive feelings when PWB is not possible because of lack of opportunities, lack of resources, or compromised personal health and vitality. Alternatively, the high demands of striving to make the most of one's talents may undermine SWB but boost PWB" (Keyes, et al., 2002, p. 1018).

Social Well-Being. Keyes (1998) notes that humans possess public and private selves, and proposes that the two aspects are potential sources of personal challenges. Consequently, he believes that a person's success in meeting these challenges may directly affect well-being. Keyes also notes that while most existing models emphasise a private, idiographic perspective of well-being, since people exist within social structure and communities it is important to investigate social well-being if we are to better understand issues such as mental health and optimal functioning. Consequently, he argues for an equal consideration of the social as well the personal nature of well-being. He sees the benefits of social life as including "social integration and cohesion, a sense of belonging and interdependence, and a sense of shared consciousness and collective fate" (Durkheim, 1951, cited in Keyes, 1998, p. 122). As such, Keyes sought to develop and test a model of social well-being that is reflective of positive social health.

Similar to Ryff (1989b), Keyes (1998) proposed that there are a number of theory-based social challenges that need to be met as a person moves toward social well-being (see Table 4). He considers that there are a number of social structural factors that provide the sources for social well-being. These factors are believed to either facilitate or constrain a person's ability and opportunity to respond successfully to these challenges, and include social stratification, aging, and educational attainment.

Table 4

Dimensions of Social Well-Being (taken from Keyes, 1998, pp. 122-123)

Social Integration	Is the evaluation of the quality of one's relationship to society and community. Healthy individuals feel that they are a part of society. Integration is therefore the extent to which people feel they have something in common with others who constitute their social reality (e.g., their neighbourhood), as well as the degree to which they feel that they belong to their communities and society.
Social Acceptance	Is the construal of society through the character and qualities of other people as a generalised category. Individuals who illustrate social acceptance trust others, think that others are capable of kindness, and believe that people can be industrious. Socially accepting people hold favourable views of human nature and feel comfortable with others.
Social Contribution	Is the evaluation of one's social value. It includes the belief that one is a vital member of society, with something of value to give to the world.
Social Actualisation	Is the evaluation of the potential and the trajectory of society. This is the belief in the evolution of society and the sense that society has potential which is being realised through its institutions and citizens. Healthier people are hopeful about the condition and future of society, and they can recognise society's potential. Socially healthier people can envision that they, and people like them, are potential beneficiaries of social growth. Social actualisation is the sense that society controls its destiny.
Social Coherence	Is the perception of the quality, organisation, and operation of the social world, and it includes a concern for knowing about the world. Healthier people not only care about the kind of world in which they live, but also feel that they can understand what is happening around them. Such people do not delude themselves that they live in a perfect world; they have maintained or promoted the desire to make sense of life.

Gratitude. McCullough, Kilpatrick, Emmons, and Larson (2001) have noted that, as with many other positive emotions, research has largely neglected gratitude. However, they highlight that such examination may be particularly relevant in the area of positive psychological functioning in order to promote a more complete understanding of well-being, coping, and adjustment. McCullough et al. propose that gratitude may be a moral affect, since it is normally displayed when people are the recipients of prosocial behaviour. As such, they view gratitude as both a response to moral behaviour and as a motivator of moral behaviour. Indeed, the functions that gratitude serves appear to link with many aspects of positive psychological functioning. McCullough et al. note that gratitude is a typical response to the perception that someone else has acted to promote one's well-being, although Emmons and Crumpler(2000) note that one must be prepared to be indebted to another otherwise gratitude can become simply an obligation to repay. It also seems to promote pro-social behaviour, is correlated with personality traits such as agreeableness, and is also an important component of a person's spirituality.

This link to positive psychological functioning has been demonstrated empirically. Emmons (unpublished manuscript, cited in Emmons & Crumpler, 2000) examined three groups of undergraduate students who were asked to either simply record up to five major events that most affected them during a week, five hassles or minor stresses, or five things in their lives for which they were grateful or thankful. He found that participants who expressed gratitude felt better about their lives as a whole, and were more optimistic about their expectations for the following week. This group also reported fewer physical complaints and spent significantly more time exercising, in addition to reporting more progress towards their personal goals. Emmons believed that this supported the notion that gratitude can be considered a human strength.

McCullough, Emmons, and Tsang (2002) developed the Gratitude Questionnaire–6 (GQ–6) in order to examine gratitude in both general terms and in relation to constructs such as life satisfaction, vitality, happiness, hope, optimism, and spirituality, as well as its association with the Big Five personality traits. Their participants included 1,228 adult volunteers for the instrument development, and 156 undergraduate students for the other aspects of the study. The instrument was found

to have an internal consistency of .82, and was considered to be reflective of a single underlying factor. Furthermore, the ratings were correlated with measures of positive psychological functioning such as happiness, satisfaction with life, hope, optimism, and a lack of depressive and anxiety symptoms. A confirmatory factor analysis indicated that gratitude is related, but not equivalent, to these factors. The study on undergraduate students revealed that grateful people tend to have higher levels of emotionality and well-being, are more pro-social, and have higher levels of spirituality or religiousness. Such people were also found to be higher in positive emotions and more satisfied with life, as well as expressing lower levels of negative emotions such as depression, anxiety, and envy.

Emotional Well-Being. Diener, Oishi, and Lucas (2003) define subjective well-being in terms of how people evaluate their lives, which can reflect their "emotional reactions to events, their moods, and judgments they form about their life satisfaction, fulfillment, and satisfaction with domains such as marriage and work" (p. 404). They consider that the individual facets of SWB consist of positive affect, lack of negative affect, and life satisfaction, and that these should be measured individually because of their demonstrated independence, a view supported by Bradburn and Caplovitz (1965, cited in Diener, et al., 1999).

Diener, Smith, and Fujita (1995) examined this separability with regard to pleasant and unpleasant affect, focusing on the structure of long-term affective experience. Their study involved 222 college students enrolled in a semester course on subjective well-being research. The participants completed self-report personality and affect scales, and provided reports from friends or family members, along with self-reports, on their emotions and experiences for 52 days. With regard to the independence of positive and negative affect, they found that they are separable, but not orthogonal.

As part of a study examining the relationship between well-being (defined by affect) and age, Mroczek and Kolarz (1998) developed a measure of positive and negative affect that was later used by Keyes, Shmotkin, and Ryff (2002). Two 6-item scales were used, with alphas of .87 for negative affect and .91 for positive affect. The scales ask participants to employ a 30-day response frame in order to capture affect

levels that are more generalised than immediate or daily moods. This time frame was also considered to produce a measure that was sensitive to both contextual and personality factors. This measure of positive and negative affect was employed for the current research.

As presented above, the current study sought to employ measures that span a wide range of positive psychological functioning. Not only did the research reviewed as the basis for selecting these measures appear to indicate that they are appropriate and sufficient for examining positive psychological functioning, it also provided a foundation for adoption of the measures rather than developing further instruments for the current research alone. In addition, the adoption of the Edinburgh Depression Scale was considered to be an appropriate measure given the population examined in the current research: that is, a female population, many of whom were pregnant at the time.

Chapter 5 – Method

Design

The current research sought to assess the extent to which positive psychological functioning is indeed different from the negative psychological functioning of depression, how it relates to depression, whether it changes as depressive symptoms develop, and whether any components of positive psychological functioning are more relevant than others to depression's progression (including symptomatology). The negative psychological functioning was assessed in terms of the depressive symptomatology that is measured by the EDS.

Participants' EDS scores were compared to their positive psychological functioning scores obtained by administering measures of psychological well-being, social well-being, affect, and gratitude—both for overall scores and sub-scales. Collecting data from both instruments at two times enabled correlational and regression analysis of the data, over time.

Analysis included determining the extent to which the positive dimension of psychological functioning is different to the negative dimension. This involved comparing scores from the various aspects of positive psychological functioning with EDS scores. It was expected that the Time 1 testing would identify women who produce a range of EDS scores—ranging from low (i.e., not depressed) to high (i.e., depressed). Thus, the intention was to compare scores from the positive dimension instrument with a range of EDS scores. This initial analysis focused on: 1. Assessing the nature and extent of any correlation between the overall scores of the two dimensions; and, 2. Which of the sub-scales (if any) appear to relate to the degree of depressive symptomatology.

The addition of Time 2 data for both instruments enabled an analysis of both the stability of components of the positive dimension as measured by the protocol (in cases where EDS scores do not significantly change), as well as the nature and extent of any change in the positive dimension for those women who went on to develop depression. The protocol's sub-scales were assessed in terms of the degree to which one or more of them correlated with both high-risk EDS scores and whether it was possible to better distinguish women who develop depression from those who do not.

Protocol analysis also included an assessment of the differences between women who scored high on the EDS and those who did not, and a determination of how overall and sub-scale scores were related to the two groups.

Groups that were considered to be at a higher risk of developing depression were included in the research because it was necessary to compare the responses of women who developed depression at Time 2 with those who did not. In this way, it was hoped that positive psychological functioning factors that serve to protect against depression could be identified, as well as factors that, in their absence, might render some women more likely to develop depression. First-year undergraduate students were selected because of their experience of a significant life transition, as well as this being a transition usually associated with high hopes for success and the laying of a foundation for a future career. In this way, it was expected that the experience of some of these students would differ from their expectations, thus prompting a depressive episode or higher levels of depressive symptomatology. With respect to the maternity sample, it was expected that some of these women would go on to develop post-natal depression. Indeed, research has suggested that the incidence of postnatal depression is as high as 13% (O'Hara & Swain, 1996).

Participants

Only female participants were recruited for the research for two reasons. Firstly, women have been found to experience depression at a much higher rate than men (Kessler, Berglund, Demler, Jin, & Walters, 2005; Kessler et al., 1994), with some estimates putting the rate as high as 3:1 (Culbertson, 1991). Secondly, while the primary symptoms and eventual course of the disorder may be similar in both men and women, there is evidence of masculine-specific modes of experiencing and expressing depression, mainly in an oblique or idiosyncratic way (Cochran & Rabinowitz, 2003).Indeed, Cochran and Rabinowitz point out that males should be evaluated for depression in terms of masculine and culture-specific features. Consequently, it was considered advisable to focus the research on female participants in order to ensure that problems with the identification of the disorder were minimised as well as maximising the potential impact and application of the findings to the most relevant demographic group.

Participants were recruited from two sources. The first source (students) was comprised of first-year female undergraduate university students studying at Edith Cowan University in Perth, Western Australia. The second source (maternity) was comprised of pregnant women. These women were recruited from Osborne Park Hospital and King Edward Memorial Hospital in Perth, Western Australia. A total of 574 participants completed and returned Time 1 questionnaires, including 279 women in the student sample, and 295 women in the maternity sample. The mean age of the student sample was 24.82 years (*SD*=8.77), while the mean age of the maternity sample was 28.63 years (*SD*=5.01). Of the participants who completed and returned Time 1 questionnaires, 207 women in the student sample completed and returned Time 2 questionnaires, compared to 202 women in the maternity sample, representing an overall response rate for Time 2 data of 71.38%.

The student sample was recruited through addresses in lectures that outlined the nature of the study. Those students who were interested in participating were provided with an information sheet, a consent form, a copy of the questionnaire (see Appendices 1 – 4), and a reply-paid envelope in which to return the completed questionnaire. The maternity sample was recruited through addresses to ante-natal classes at Osborne Park Hospital and through personal approaches by the researcher in ante-natal clinics at King Edward Memorial Hospital. As with the student sample, those women who were interested in participating were provided with an information sheet, a consent form, a copy of the questionnaire, and a reply-paid envelope in which to return the completed questionnaire.

Measures

Depression. The Edinburgh Postnatal Depression Scale (EDS) (J. L. Cox, Holden, & Sagovsky, 1987) was used to assess whether participants were likely to be depressed at either Time 1 or Time 2, as well as providing a continuous measure of dysphoria or negative affect. The EDS was developed to detect postnatal depression, as opposed to being a measure of symptom severity (Eberhard-Gran, et al., 2001). The instrument has been reported to have good sensitivity (68%–96%), good specificity (78%–100%), and positive predictive value (PPV) of approximately 70% (Quigley, et al., 2006) or higher (Milgrom, et al., 2005). In addition to its focus on the detection of postnatal

depression, the EDS has been found to have satisfactory specificity (85%) and sensitivity (79%) in a community sample of non-postnatal women (John L. Cox, et al., 1996), which supports its use with this group. Furthermore, Green (1998) has demonstrated that the EDS can also be used as a continuous measure of dysphoria, both postnatally and antenatally, for research purposes. The internal consistency of the combined items was .89 for the Time 1 data.

Psychological Well-Being. Participants completed Ryff's (1989b) scales of psychological well-being. Ryff sought to integrate a range of perspectives about well-being in a way that would allow for the development of an assessment instrument. She considered that the various theories and perspectives could be distilled into the dimensions of Self-Acceptance, Positive Relations with Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth. See page 40 for more information about the instrument. The internal consistency of the combined items was .97 for the Time 1 data.

Social Well-Being. Participants completed Keyes' (1998) scales of social well-being. The internal consistency of the combined items was .88 for the Time 1 data.

Gratitude. Participants completed McCullough, Emmons, and Tsang's (2002) Gratitude Questionnaire–6 (GQ–6). The internal consistency of the combined items was .82 for the Time 1 data.

Emotional Well-Being. Participants completed the Positive and Negative Affect scales developed by Mroczek and Kolarz (1998). The internal consistency of the combined items was .92 for the Time 1 data. The internal consistency for the Positive Affect items was .91, while the internal consistency for the Negative Affect items was .84 for the Time 1 data.

In addition to the specific measures of depression and positive psychological functioning, participants were also asked to provide demographic information in a range of areas. See Appendix 4 for details of the information requested.

Chapter 6 – Introduction to Results

Where relevant in these results, Welch's ANOVA was employed whenever a violation of the assumption of homogeneity of variance was noted. Welch's ANOVA is considered preferable where heterogeneity of variance is indicated, particularly when there are unequal group sizes (Howell, 1997). In addition, Games-Howell post-hoc analyses have been used whenever there were different numbers of participants in each of the groupings. Games-Howell post-hoc analyses (which are based on Welch's correction to the degrees of freedom) are necessary when variances are unequal, and also take into account unequal group sizes (Howell, 1997; Newsom, 2006).

Factor Analysis

While the factors used seem, at face value, to measure different aspects of psychological well-being, a factor analysis was conducted in order to assess the extent to which this was the case. Principal factors extraction with varimax rotation was performed on the 14 items constituting positive psychological functioning for the 574 participants who provided data at Time 1. Principal components extraction was used prior to principal factors extraction to estimate number of factors, presence of outliers, absence of multicollinearity, and factorability of the correlation matrices. With an α = .001 cutoff level, 15 of the 573 participants produced scores that identified them as outliers; these cases were deleted from principal factors extraction. An examination of the correlation matrix indicated that only two of the correlations were less than 0.3. In addition, the KMO measure of sampling adequacy was 0.94, and Bartlett's test of sphericity was large and significant (5,508.61, p = .00). These results indicated that the matrix was suitable for factoring. The scree plot (see Figure 3) suggests that there is one predominant factor, although there were two factors with eigenvalues greater than 1.00. With a cut of .45 for inclusion of a variable in the interpretation of a factor, three of the variables were complex (see Table 5).

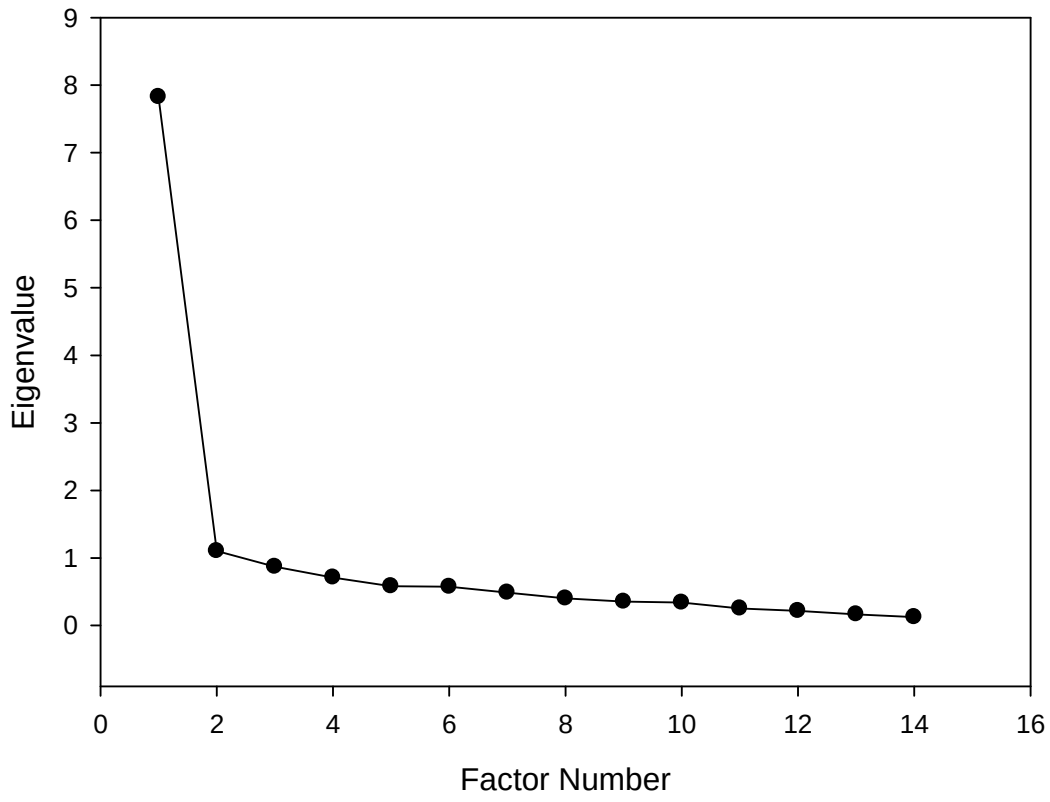


Figure 3. Scree plot for principal factors extraction of positive psychological functioning factors at Time 1.

Table 5

Factor loadings for positive psychological functioning variables at Time 1 – varimax rotation

Variable	Factor 1	Factor 2
Self-Acceptance	.85	
Environmental Mastery	.83	
Purpose in Life	.77	
Negative Affect	.69	
Personal Growth	.70	
Autonomy	.75	
Positive Affect	.66	
Positive Relations with Others	.66	.47
Social Actualisation		.80
Social Integration		.71
Social Acceptance		.78
Social Contribution	.48	.58
Gratitude	.57	.52
Social Coherence		.58

When oblique rotation was requested, factors interpreted as Intrinsic (Self-Acceptance, Environmental Mastery, Purpose in Life, Negative Affect, Personal Growth, Autonomy, and Positive Affect) and Extrinsic (Positive Relations with Others, Social Actualisation, Social Integration, Social Acceptance, Social Contribution, Gratitude, and Social Coherence) correlated .72. No complex variables were revealed, and Social Coherence and Gratitude did not load onto either factor. Nevertheless, there was a clear distinction between the social well-being variables and all other variables (see Table 6).

Table 6

Factor loadings for positive psychological functioning variables at Time 1 – oblique rotation

Variable	Factor 1	Factor 2
Self-Acceptance	.96	
Environmental Mastery	.93	
Purpose in Life	.77	
Autonomy	.72	
Personal Growth	.68	
Negative Affect	.67	
Positive Affect	.58	
Positive Relations with Others	.53	
Social Actualisation		.80
Social Acceptance		.75
Social Integration		.73
Social Contribution		.48
Social Coherence		
Gratitude		

Discussion

Factor analysis suggests a clear distinction between Psychological Well-Being and Social Well-Being, with Positive Affect and the Absence of Negative Affect seemingly related to Psychological Well-Being. The fact that Gratitude did not load onto either factor may be supportive of previous research indicating that Gratitude is a distinctly separate construct to others within the realm of positive psychological functioning. Perhaps the reason why it did not load onto either factor was because of the strength of the other two factors in the analysis.

Time 1 – Background Analyses

The mean EDS score for the total sample at Time 1 was 7.46 (*SD* = 5.51). There was a significant difference between the student and maternity samples in terms of EDS score; the assumption of homogeneity of variance was violated, however students

(*M* = 9.30, *SD* = 5.72) reported significantly higher EDS scores than the maternity sample (*M* = 5.72, *SD* = 4.70), *t*(538.57) = 8.18, *p*< .05.

Maternity Sample

179 women (61.3%) reported that their pregnancy was planned, with 184 women (62.4%) reporting that they did not experience any health problems during their pregnancy. Of those women who did report experiencing problems with their pregnancy, Table 7 depicts the range of problems experienced.

Table 7

Frequency of problems experienced during pregnancy

Problem	Frequency	Percentage
Gestational Diabetes Mellitus	9	3.1
Pre-Eclampsia	2	0.7
Excessive Vomiting	33	11.2
Venous Complications	23	7.8
Genitourinary Tract Infection	5	1.7
Ante-Partum Haemorrhage/Threatened Miscarriage	11	3.7
Other Problems	50	16.9

With regard to participants in the maternity sample being asked to indicate how they felt in general about becoming a mother, some chose to endorse points in between the primary marked points, and these were included in the analysis as half-points (e.g., 7.5). Figure 4 depicts the range of endorsements on this scale. It is apparent from these frequencies that most women were very positive about becoming a mother.

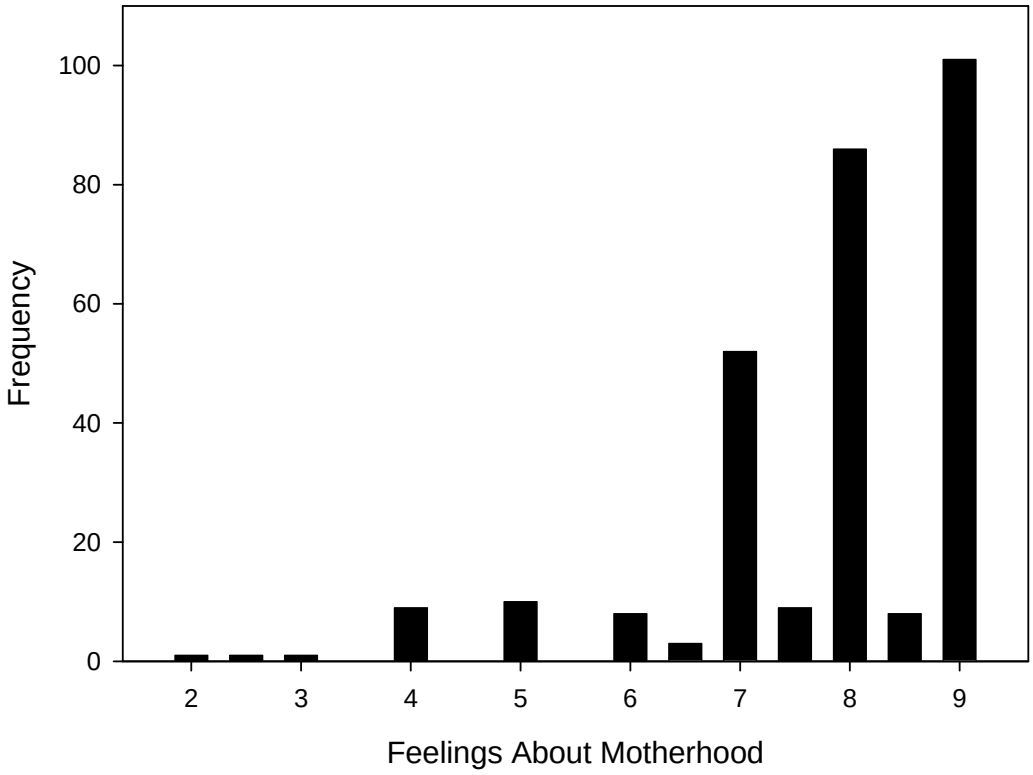


Figure 4. Maternity sample participants' Feelings about Motherhood. Higher scores indicate more positive feelings.

Complete Sample

Based on their EDS scores, participants were classified into their depression status. The EDS provides for three categories: people with scores of 0–9 are considered to be Not Depressed, those with scores of 10–12 are considered to have Borderline Depression, while those with scores ≥13 are considered to be Depressed. In terms of the total sample, 387 women (67.4%) were classified as Not Depressed, 87 (15.2%) were classified as having Borderline Depression, and 100 (17.4%) were classified as being Depressed. Figure 5 illustrates the different frequencies in each category based on whether the participant was a student or from the maternity sample.

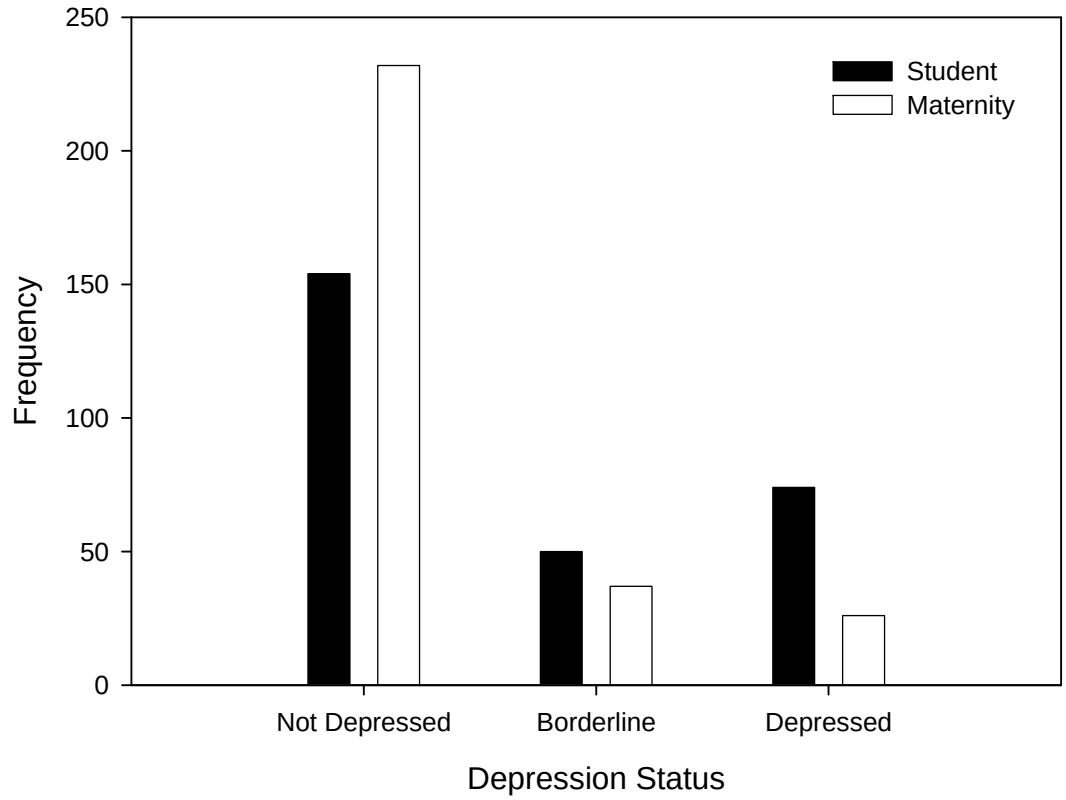


Figure 5. Number of women in EDS depression categories according to whether they are from the student or maternity samples.

Analyses were conducted in order to determine whether any of the demographic factors may have been associated with levels of depression. With respect to the highest level of education achieved, a one-way ANOVA revealed a main effect of education level $F(6, 560) = 2.66$, $p < .05$. All assumptions underlying the ANOVA were met. Post-hoc analyses revealed that participants who had completed Year 12 as their highest level of education reported significantly higher scores on the EDS than people who had completed Bachelor's degrees. No other significant differences were noted. Figure 6 illustrates the mean EDS scores of each level of highest education achieved, while Table 8 shows the number of participants in each education category. Figure 7 compares the number of participants from the student and maternity samples according to the highest level of education achieved.

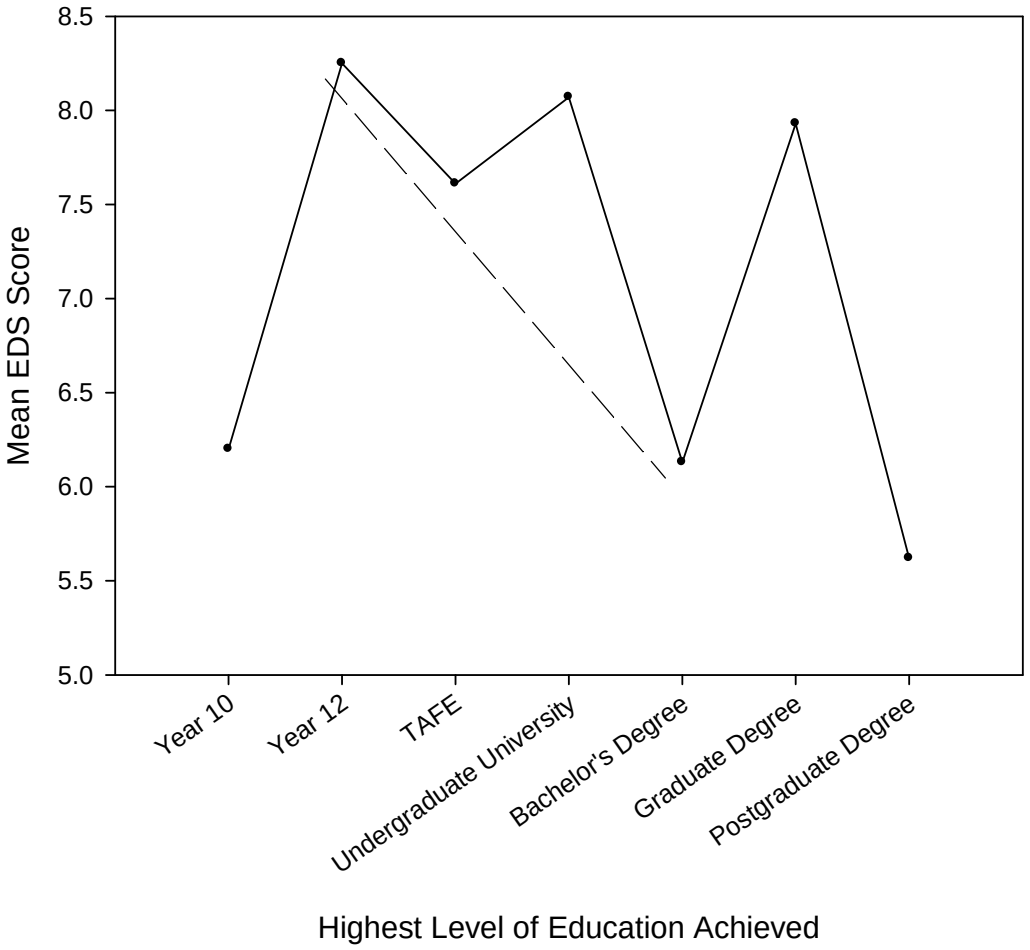


Figure 6. Mean EDS score by highest level of education achieved. Dashed lines indicate significant differences.

Table 8

Frequency of participants in each education level

Education Level	Frequency	Percentage
Year 10	46	8.1
Year 12	191	33.7
TAFE	107	18.9
Undergraduate Degree	87	15.3
Bachelor's Degree	100	17.6
Graduate Degree	15	2.6
Postgraduate Degree	21	3.7

Note: Seven participants did not disclose the highest level of education that they had achieved.

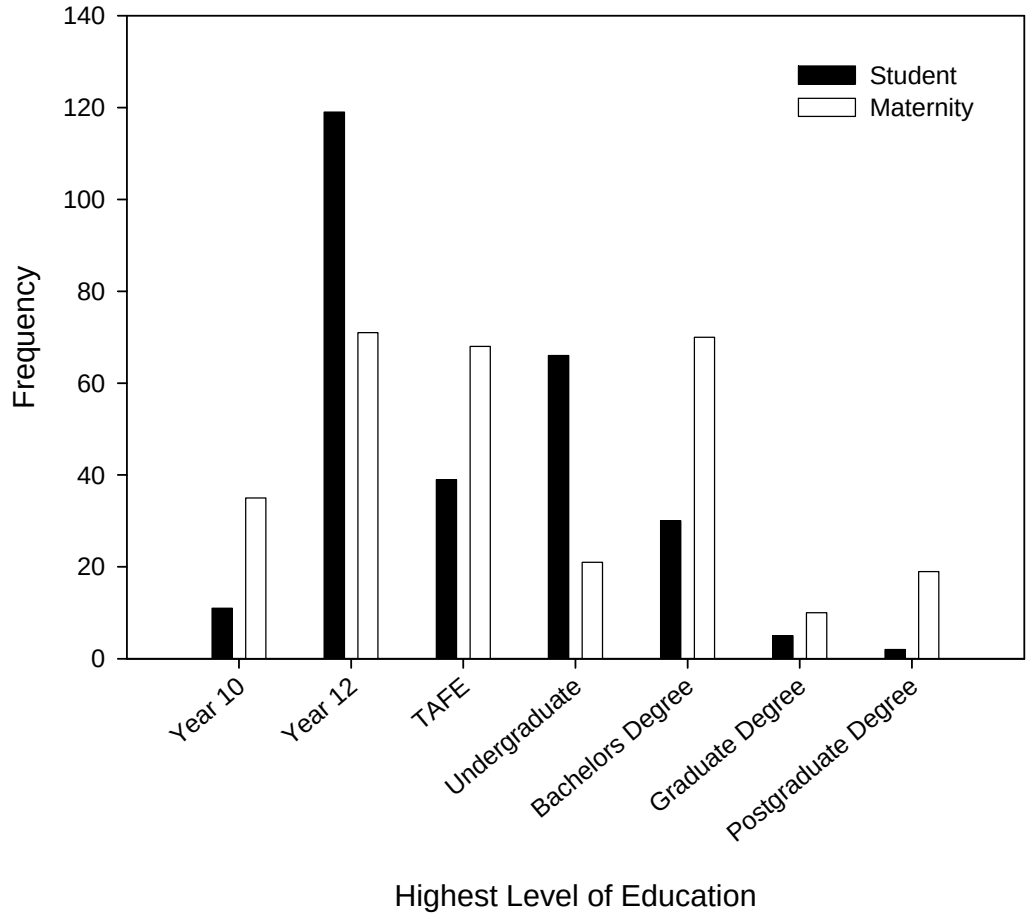


Figure 7. Frequencies of highest level of education achieved by participant group.

A one-way ANOVA was conducted in order to determine whether there were any significant differences on EDS score in terms of employment status. The assumption of homogeneity of variance was violated. A main effect of employment status was observed, $F(4, 101.68) = 17.80$, $p < .05$. Figure 8 illustrates the mean EDS scores of each type of employment status, along with significant differences. It would appear that people employed full-time have significantly lower levels of depression than those in any other form of employment, with the exception of home duties. Table 9 shows the number of participants in each form of employment. Figure 9 compares the number of participants from the student and maternity samples according to their form of employment.

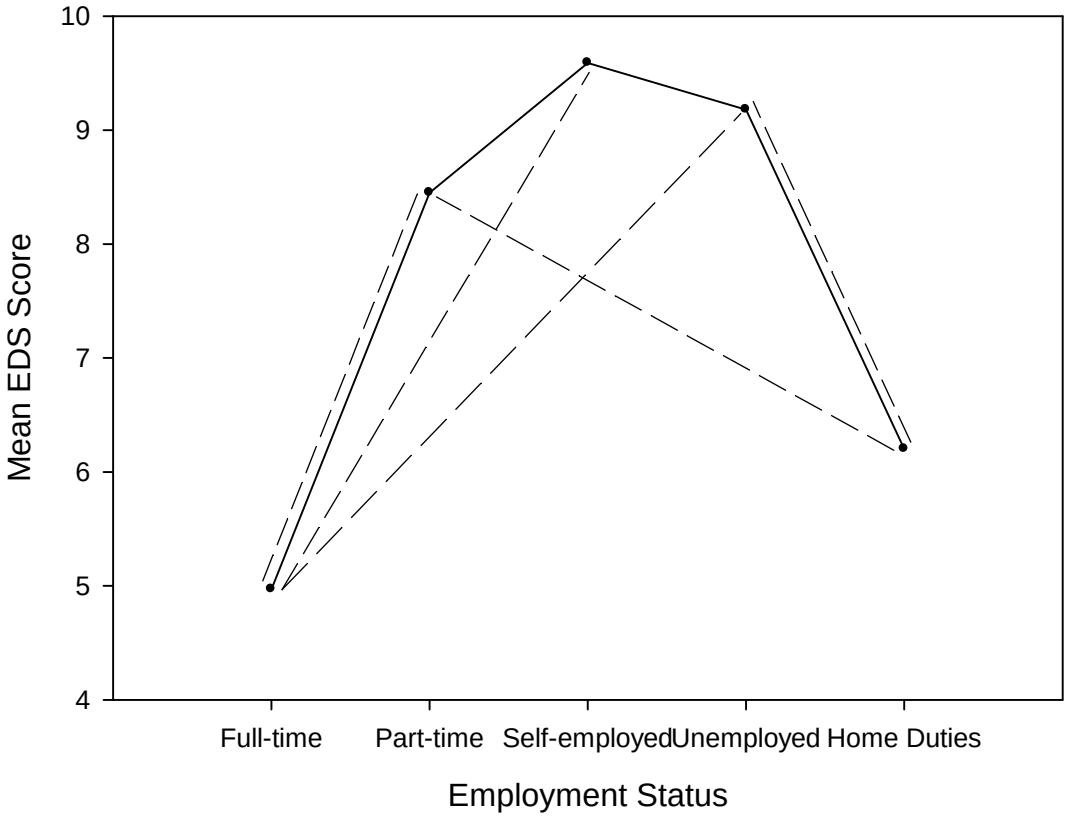


Figure 8. Mean EDS score by employment status. Dashed lines indicate significant differences.

Table 9

Frequency of participants in each form of employment

Employment Status	Frequency	Percentage
Full-Time	131	23.1
Part-Time	202	35.6
Self-Employed	17	3.0
Unemployed	115	20.3
Home Duties	102	18

Note: Seven participants did not disclose their employment status.

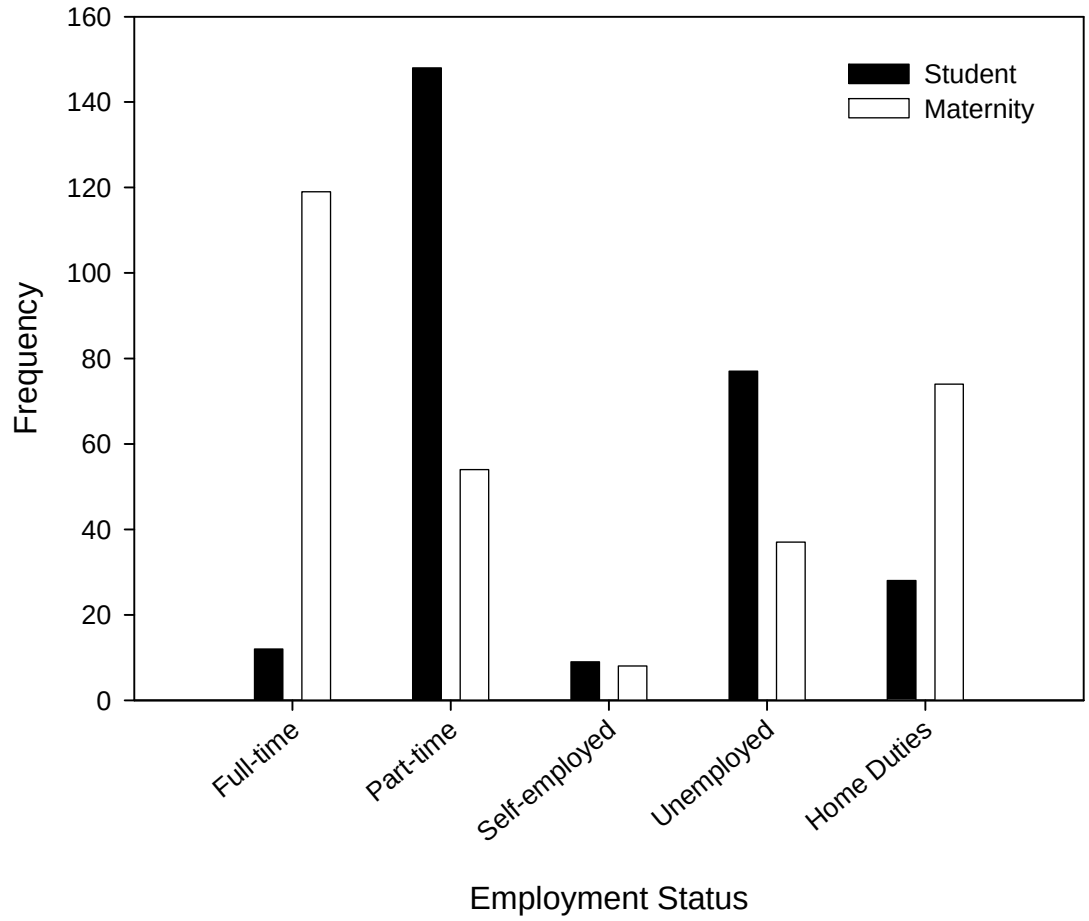


Figure 9. Frequencies of employment status by participant group.

A one-way ANOVA was conducted in order to determine whether there were any significant differences on EDS score in terms of relationship status. There was only one participant who reported being widowed, and she was re-coded as single for the purposes of all analyses. The assumption of homogeneity of variance was violated. A main effect of relationship status was observed, $F(5, 52.79) = 15.20$, $p < .05$. Figure 10 illustrates the mean EDS scores of each type of relationship status, along with significant differences. It would appear that, in general, being married or in a relationship leads to lower levels of depression than being single. Table 10 shows the number of participants in each form of relationship. Figure 11 compares the number of participants from the student and maternity samples according to their relationship status.

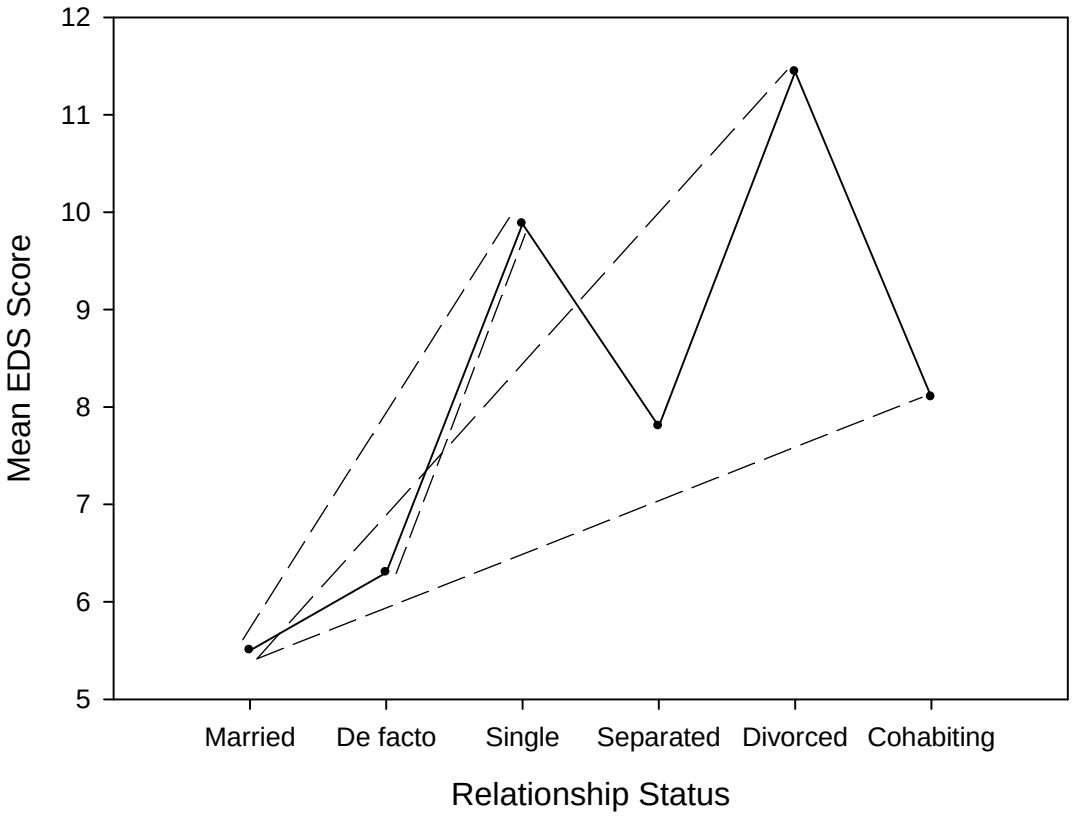


Figure 10. Mean EDS score by relationship status. Dashed lines indicate significant differences.

Table 10

Frequency of participants in each type of relationship

Relationship Status	Frequency	Percentage
Married	199	34.8
De facto	116	20.3
Single	193	33.7
Separated	15	2.6
Divorced	9	1.6
Cohabiting	40	7.0

Note: Two participants did not disclose their relationship status. One participant reported that she was widowed; for the purposes of analysis, she was included in the Single category.

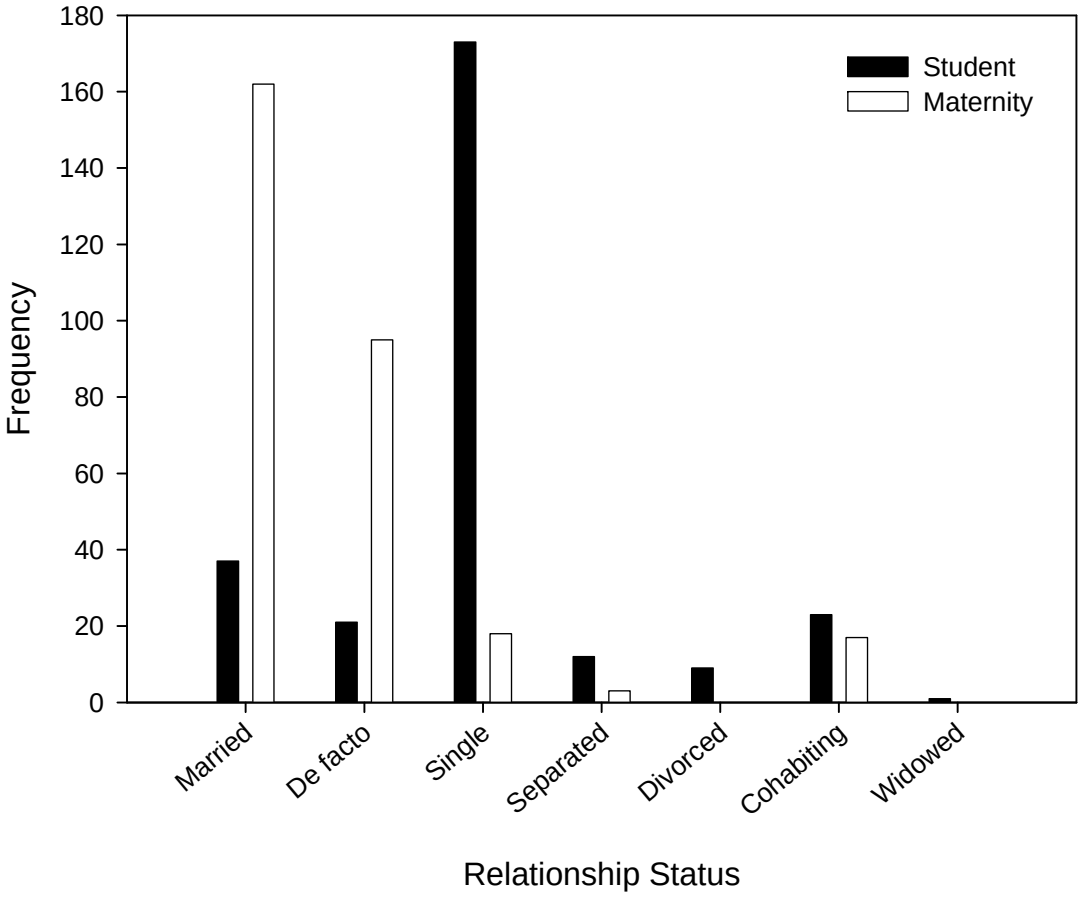


Figure 11. Frequencies of relationship status by participant group.

A one-way ANOVA was conducted in order to determine whether there were any significant differences on EDS scores in terms of health status. The assumption of homogeneity of variance was violated. A main effect of health status was observed, $F(4, 41.52) = 19.53$, $p < .05$. Figure 12 illustrates the mean EDS scores of each type of health status, along with significant differences. It would appear that higher levels of health are associated with lower levels of depression. Table 11 shows the number of participants reporting each type of health status category. Figure 13 compares the number of participants from the student and maternity samples according to their health status.

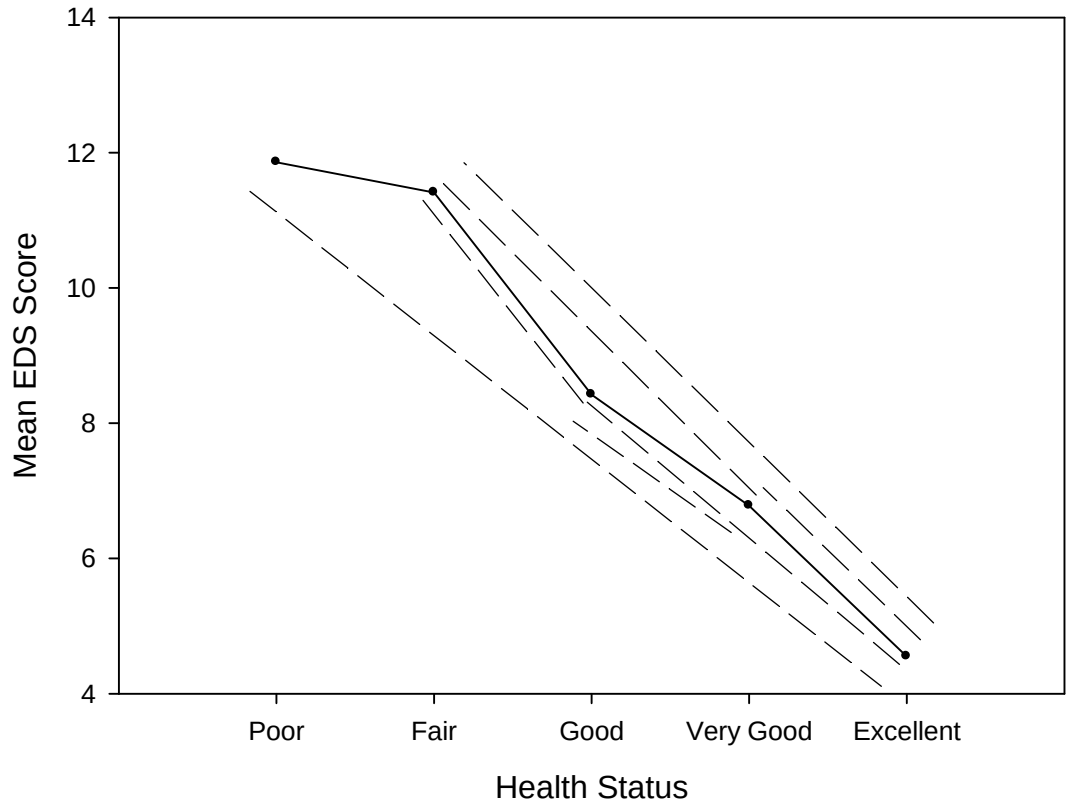


Figure 12. Mean EDS score by health status. Dashed lines indicate significant differences.

Table 11

Frequency of participants in each health status category

Health Status	Frequency	Percentage
Poor	7	1.2
Fair	51	8.9
Good	206	35.9
Very Good	213	37.1
Excellent	97	16.9

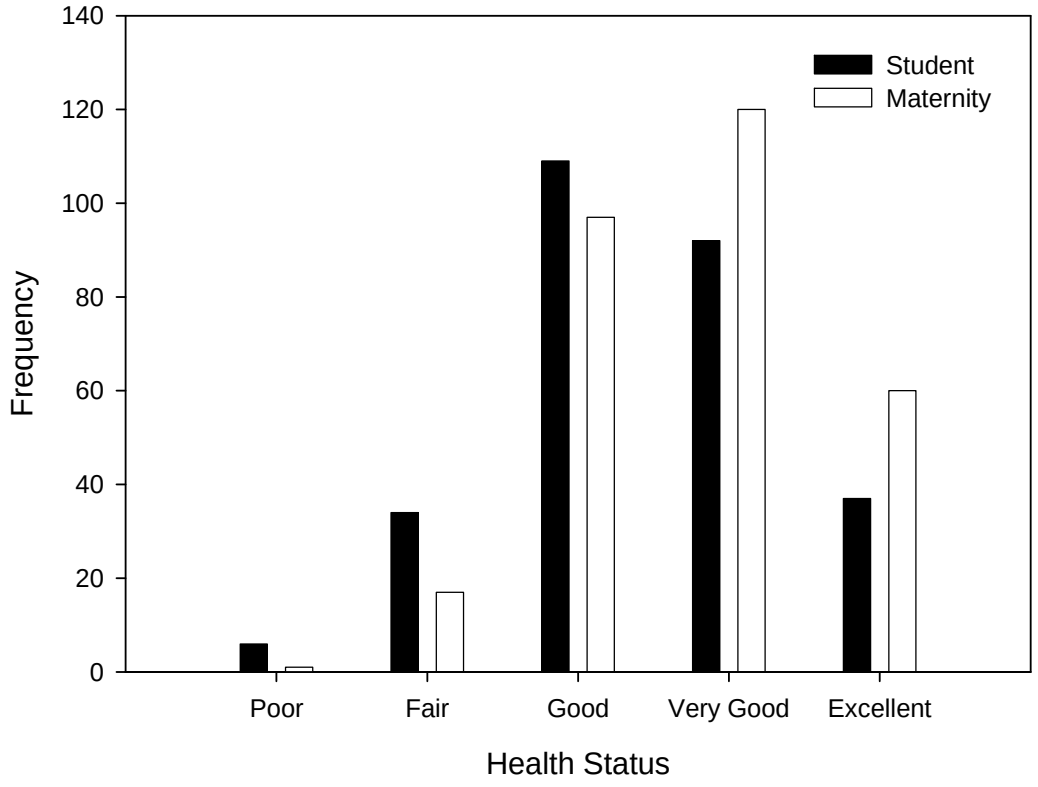


Figure 13. Frequencies of health status by participant group.

Education Level. One-way ANOVAs were conducted in order to determine the effect of education level on positive psychological functioning. For Psychological Well-Being, the assumption of homogeneity of variance was violated with respect to Positive Relations with Others and Self-Acceptance. Analyses revealed a main effect of education level for all positive psychological functioning components: Autonomy, $F(6, 560) = 3.59$, $p < .05$; Environmental Mastery, $F(6, 560) = 2.84$, $p < .05$; Personal Growth, $F(6, 560) = 2.04$, $p < .05$; Positive Relations with Others, $F(6, 106.12) = 7.64$, $p < .05$; Purpose in Life, $F(5, 560) = 3.58$, $p < .05$; and Self-Acceptance, $F(6, 106.92) = 10.50$, $p < .05$. Post-hoc analyses revealed that participants who had completed a postgraduate degree as their highest level of education reported significantly higher scores for Autonomy than all other levels of education with the exception of Year 10. With respect to Environmental Mastery, participants who had completed either a bachelor's degree or a postgraduate degree reported significantly higher scores than those who had completed Year 12. With regard to Personal Growth, participants who had

completed a postgraduate degree reported significantly higher scores than those who had completed Year 12. With regard to Positive Relations with Others, participants who had completed a postgraduate degree reported significantly higher scores than all other levels of education with the exception of a graduate degree. With regard to Purpose in Life, participants who had completed a bachelor's degree reported significantly higher scores than those who had completed Year 12, while those who had completed a postgraduate degree reported significantly higher scores than those who had completed Year 10, Year 12, or TAFE. With regard to Self-Acceptance, participants who had completed a bachelor's degree reported significantly higher scores than those who had completed Year 12, while those who had completed a postgraduate degree reported significantly higher scores than those who had completed all other levels of education with the exception of a graduate degree. No other significant differences were noted. Figure 14 illustrates the mean Psychological Well-Being scores for each level of highest education achieved.

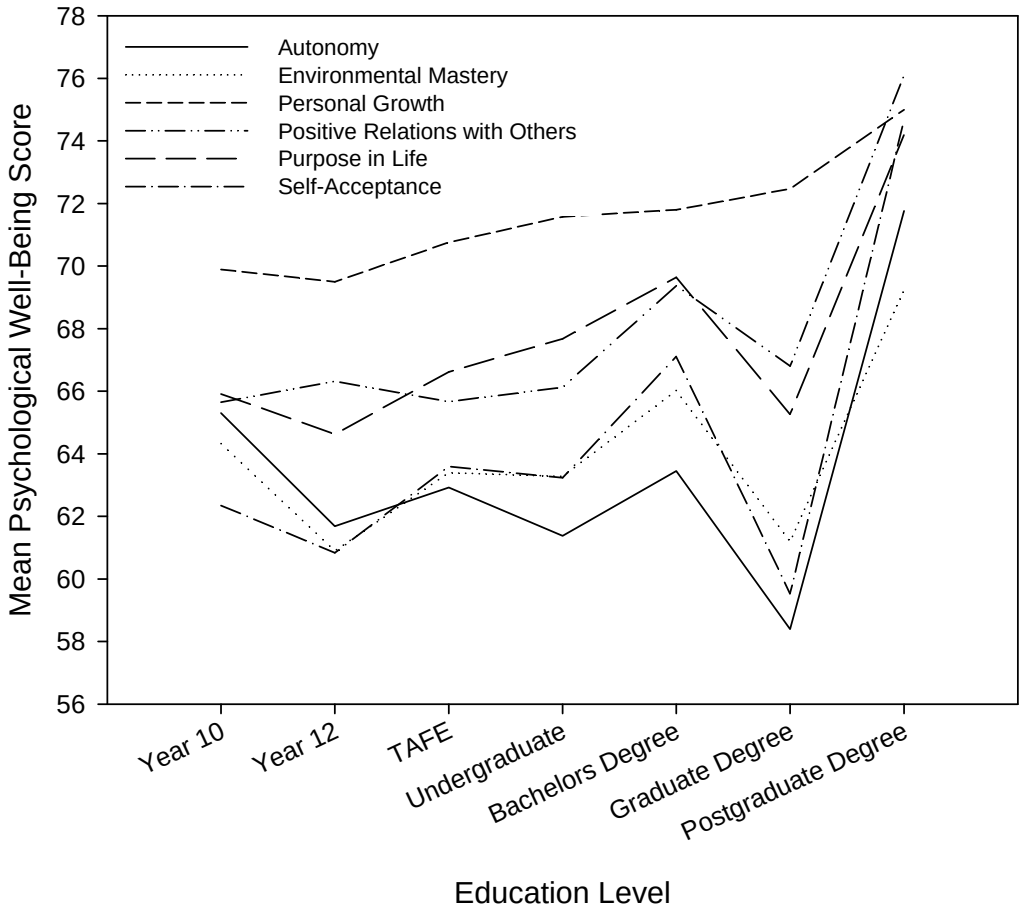


Figure 14. Mean Psychological Well-Being score by education level.

The assumption of homogeneity of variance was violated for Gratitude, and so Welch's ANOVA was employed. No main effect of education level was noted. Figure 15 illustrates the mean Gratitude score for each level of highest education achieved.

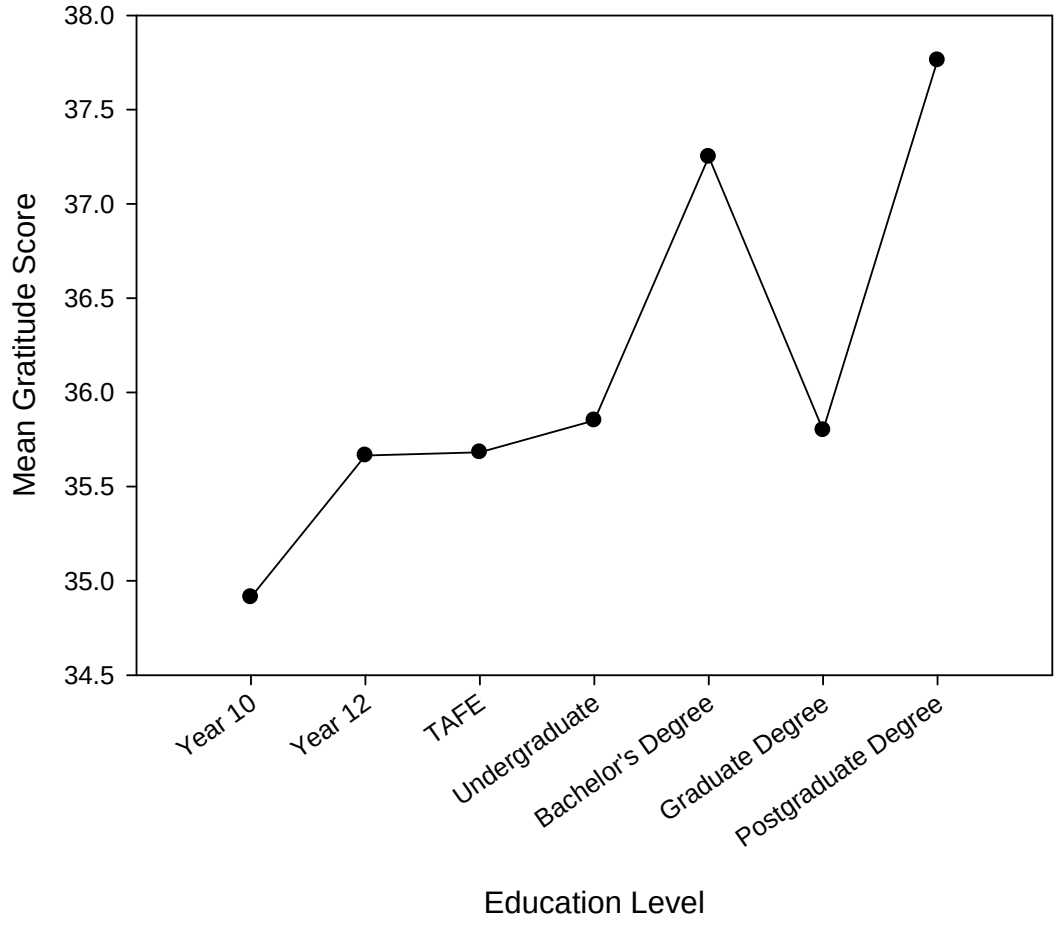


Figure 15. Mean Gratitude score by education level.

The assumption of homogeneity of variance was violated for the absence of negative affect. No main effect of education level was noted for positive affect. A main effect of education level on the absence of negative affect was found, $F(6, 103.42) = 2.51$, $p < .05$.Post-hoc revealed that those participants with a bachelor's degree reported a significantly higher absence of negative affect than participants who had completed Year 12. Figure 16 illustrates the mean Positive Affect and absence of Negative Affect scores for each level of highest education achieved.

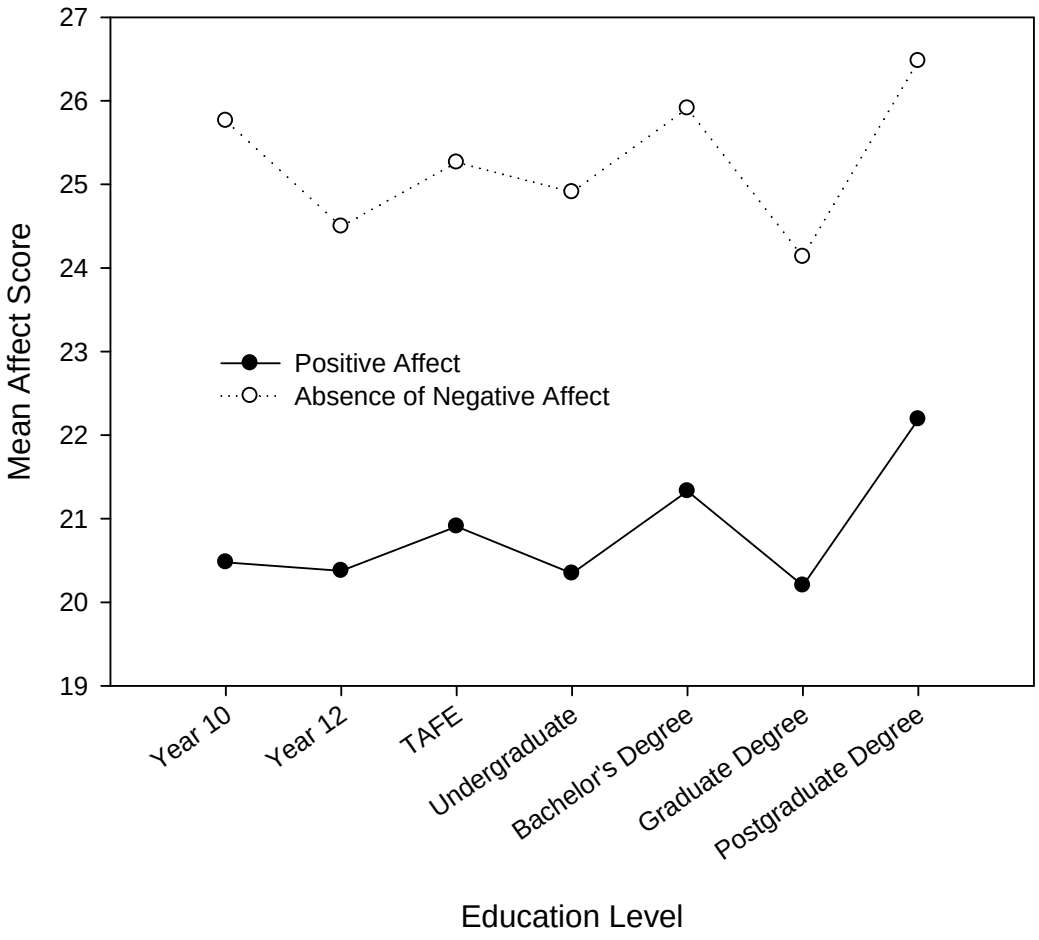


Figure 16. Mean Positive Affect and absence of Negative Affect scores by education level.

With regard to Social Well-Being, the assumption of homogeneity of variance was violated for Social Integration. A main effect of education level was found for all social well-being factors: Social Coherence, $F(6, 559) = 2.58$, $p < .05$, Social Integration, $F(6, 102.15) = 2.66$, $p < .05$, Social Acceptance, $F(6, 559) = 2.15$, $p < .05$, Social Contribution, $F(6, 559) = 4.92$, $p < .05$, and Social Actualisation, $F(6, 559) = 2.54$, $p < .05$.Post-hoc analyses revealed that, for Social Coherence, participants with a postgraduate degree reported significantly higher scores than those who had completed Year 12 or an undergraduate degree. With regard to Social Integration, no significant differences were noted. With regard to Social Acceptance, participants with a bachelor's degree reported significantly higher scores than those who had completed Year 12. With regard to Social Contribution, participants with a bachelor's degree

reported significantly higher scores than those who had completed Year 12, and those with a postgraduate degree reported significantly higher scores than those who had completed Year 12 or TAFE. With regard to Social Actualisation, participants with a bachelor's degree reported significantly higher scores than those who had completed Year 12. Figure 17 illustrates the mean Social Well-Being score for each level of highest education achieved.

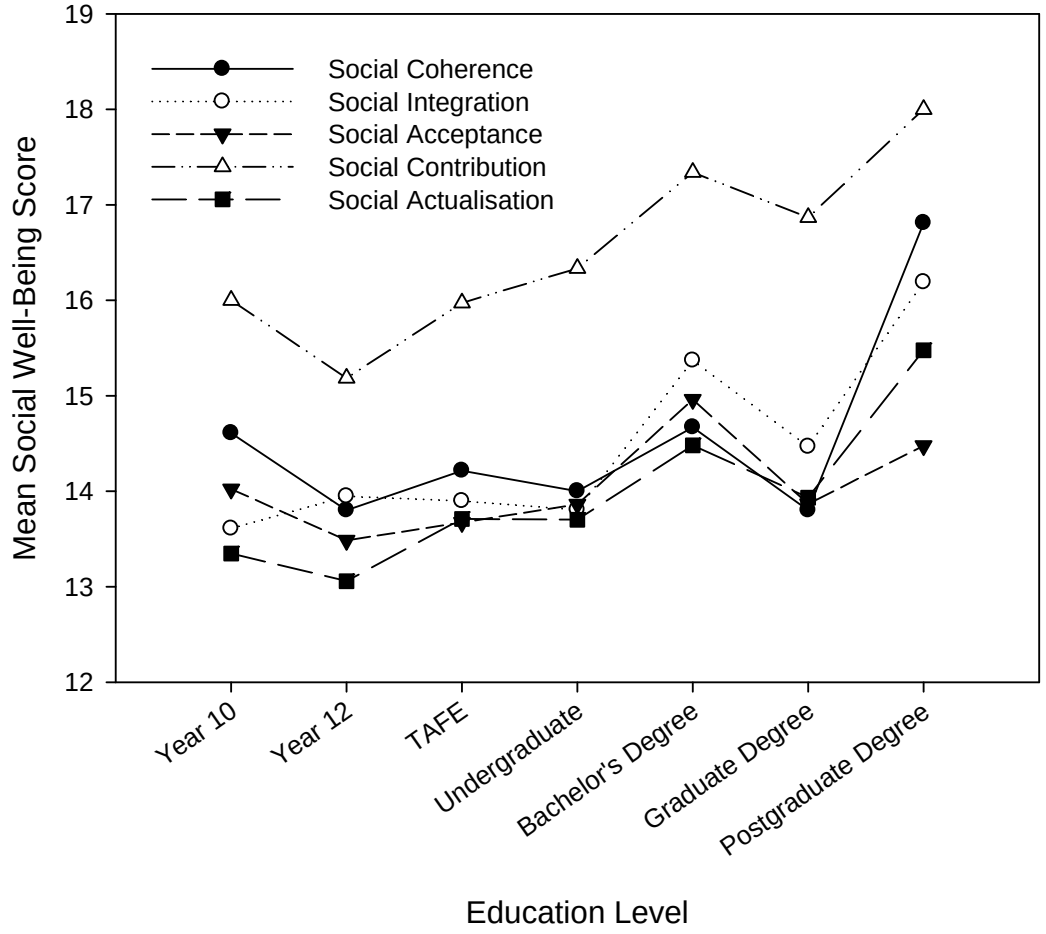


Figure 17. Mean Social Well-Being scores by education level.

Employment Status. One-way ANOVAs were conducted in order to determine the effect of employment status on positive psychological functioning. For Psychological Well-Being, the assumption of homogeneity of variance was violated with respect to Environmental Mastery, Positive Relations with Others, Purpose in Life, and Self-Acceptance. Analyses revealed a main effect of employment status for all

positive psychological functioning components, with the exception of Personal Growth: Autonomy, $F(4, 562) = 6.66$, $p < .05$; Environmental Mastery, $F(4, 102.65) = 18.65$, $p < .05$; Positive Relations with Others, $F(4, 102.15) = 7.95$, $p < .05$; Purpose in Life, $F(4, 102.48) = 5.15$, $p < .05$; and Self-Acceptance, $F(4, 102.00) = 12.59$, $p < .05$. Post-hoc analyses revealed that participants who worked full-time reported significantly higher scores for Autonomy than all other types of employment with the exception of those who were self-employed. With respect to Environmental Mastery, participants who worked full-time also reported significantly higher scores than all other types of employment with the exception of those who were self-employed. In addition, those who undertook home duties reported significantly higher scores than those who reported that they were unemployed. With regard to Positive Relations with Others, participants who worked full time reported significantly higher scores than all other types of employment with the exception of those who were self-employed. With regard to Purpose in Life, participants who worked full-time reported significantly higher scores than those who worked either part-time or were unemployed. With regard to Self-Acceptance, participants who worked full-time reported significantly higher scores than all other types of employment, with the exception of those who were self-employed. Figure 18 illustrates the mean Psychological Well-Being scores for each type of employment status.

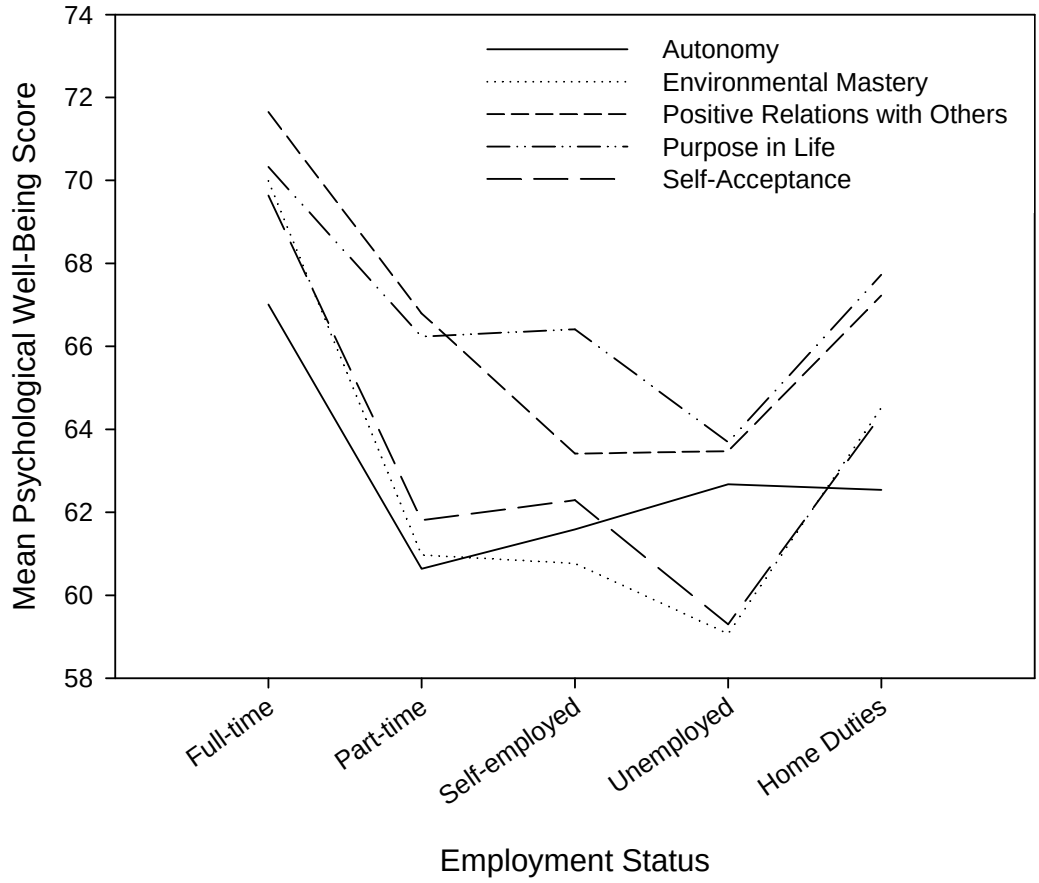


Figure 18. Mean Psychological Well-Being score by employment status.

The assumption of homogeneity of variance was violated for Gratitude. A main effect of employment status was noted, $F(4, 101.49) = 3.61$, $p < .05$. Post-hoc analyses revealed that participants who worked full-time reported significantly more Gratitude than those who were unemployed. Figure 19 illustrates the mean Gratitude score for each category of employment status.

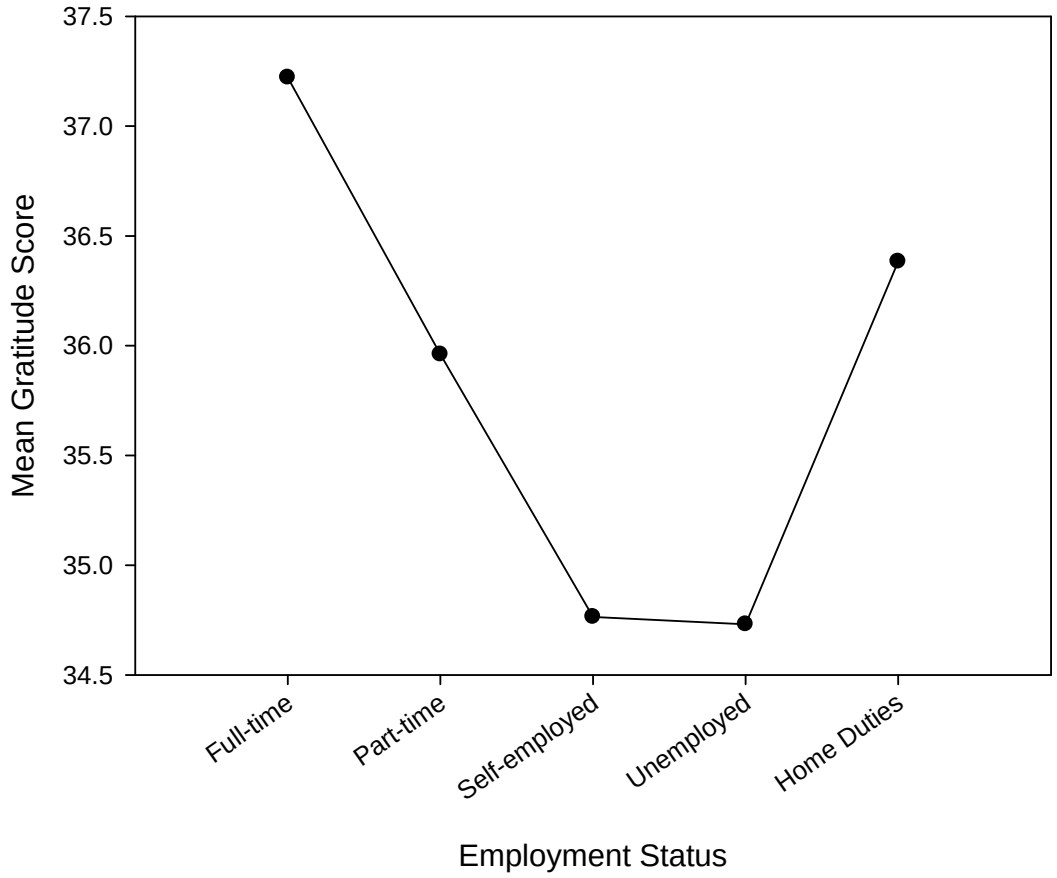


Figure 19. Mean Gratitude score by employment status.

For Positive Affect and the absence of Negative Affect, the assumption of homogeneity of variance was violated in both cases. A main effect of employment status was noted for positive affect, $F(4, 101.31) = 7.68$, $p < .05$, and the absence of negative affect, $F(4, 101.26) = 18.77$, $p < .05$. For positive affect, post-hoc analyses revealed that participants who worked full-time reported significantly higher scores than those who were unemployed. For the absence of negative affect, participants who worked full-time reported significantly higher scores than all other categories, with the exception of those who were self-employed. Figure 20 illustrates the mean Positive Affect and absence of Negative Affect scores for each category of employment status.

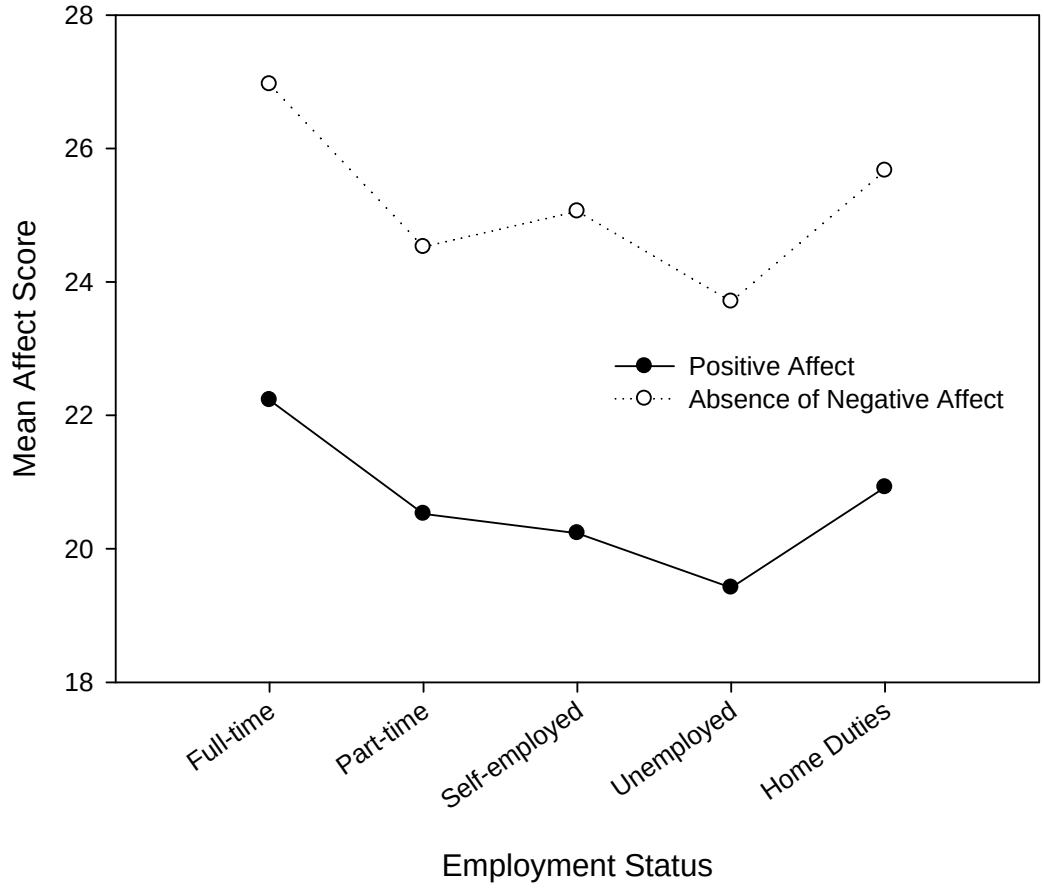


Figure 20. Mean Positive Affect and absence of Negative Affect scores by employment status.

With regard to Social Well-Being, the assumption of homogeneity of variance was violated for Social Contribution. Analyses revealed a main effect of employment status for Social Integration, $F(4, 561) = 3.66$, $p < .05$; Social Acceptance, $F(4, 561) = 3.36$, $p < .05$; and Social Contribution, $F(4, 102.90) = 2.08$, $p < .05$.Post-hoc analyses revealed that, for Social Integration and Social Acceptance, participants who were employed full-time reported significantly higher scores than those who were unemployed. The analyses also revealed that for Social Contribution, participants who were employed full-time reported significantly higher scores than any other employment type, with the exception of self-employed. Figure 21 illustrates the mean Social Well-Being scores for each category of employment status.

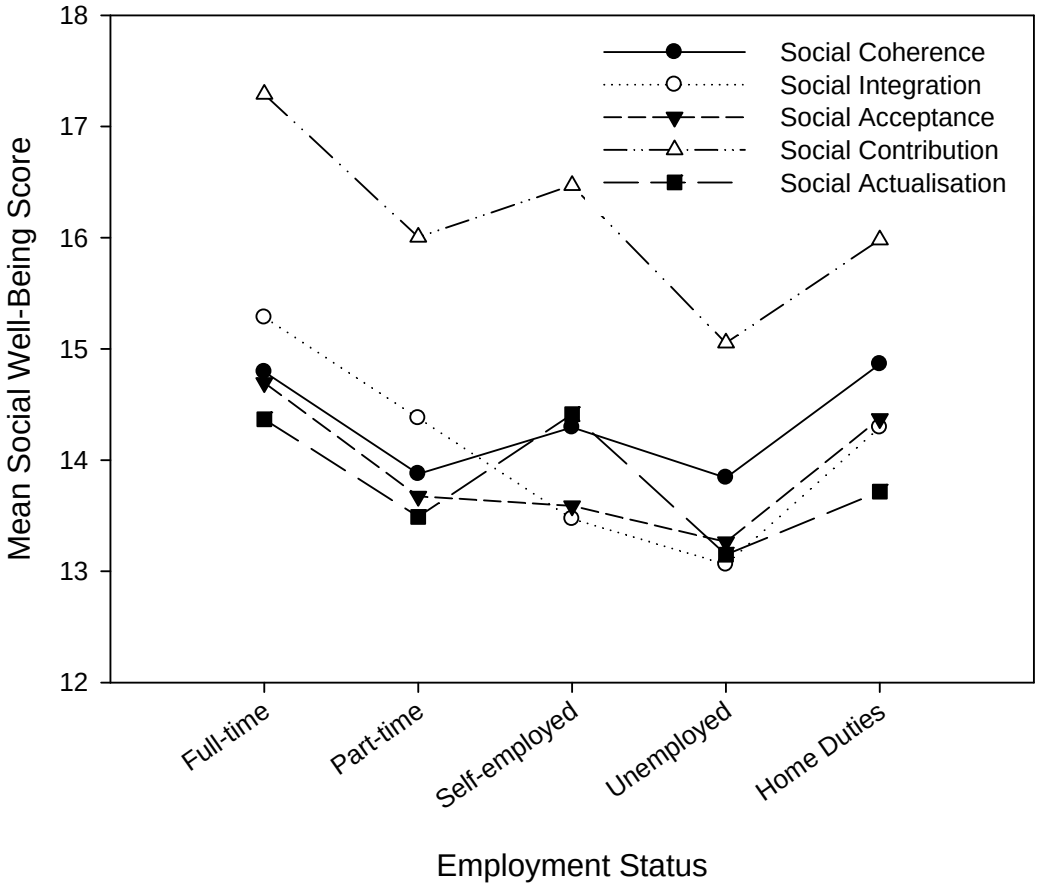


Figure 21. Mean Social Well-Being scores by employment status.

Relationship Status. One-way ANOVAs were conducted in order to determine the effect of relationship status on positive psychological functioning. For Psychological Well-Being, the assumption of homogeneity of variance was violated for Environmental Mastery, Purpose in Life, and Self-Acceptance. Analyses revealed a main effect of relationship status for all aspects of psychological well-being, with the exception of Personal Growth: Autonomy, $F(5, 566) = 3.29$, $p < .05$; Environmental Mastery, $F(5, 52.45) = 16.26$), $p < .05$; Positive Relations with Others, $F(5, 566) = 6.40$, $p < .05$; Purpose in Life, $F(5, 52.16) = 7.25$, $p < .05$; and Self-Acceptance, $F(5, 51.87) = 11.37$, $p < .05$. Post-hoc analyses revealed that, for Autonomy, participants who were married or in de facto relationships reported significantly higher scores than those who were single. For Environmental Mastery, participants who were married or in de facto relationships again reported significantly higher scores than those who were single,

while participants who were married also reported significantly higher scores than those who were cohabiting. With regard to Positive Relations with Others, participants who were married reported significantly higher scores than those who were single or cohabiting. For Purpose in Life, participants who were married reported significantly higher scores than those who were single. For Self-Acceptance, participants who were married reported significantly higher scores than those who were either single or cohabiting. Figure 22 illustrates the mean Psychological Well-Being score for each category or relationship status.

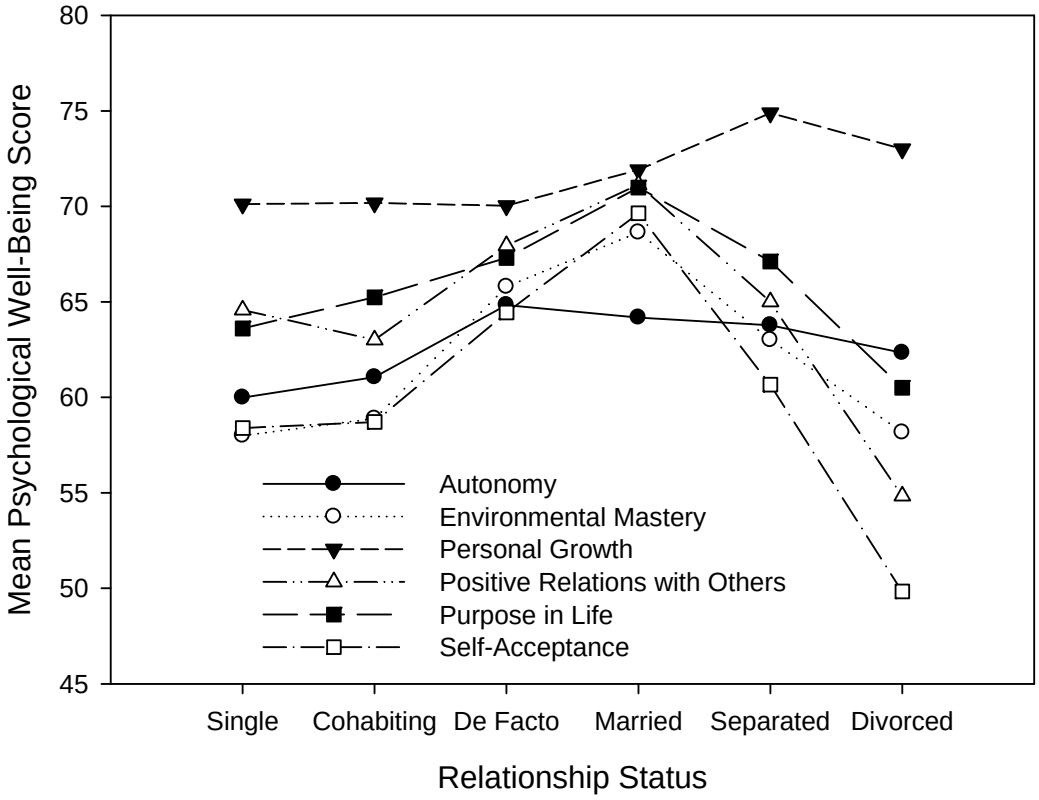


Figure 22. Mean Psychological Well-Being score by relationship status.

The assumption of homogeneity of variance was violated for Gratitude. A main effect of relationship status was noted, $F(5, 52.12) = 3.11$, $p < .05$. Post-hoc analyses revealed that participants who were married reported significantly higher Gratitude scores than those who were single. Figure 23 illustrates the mean Gratitude score for each category of relationship status.

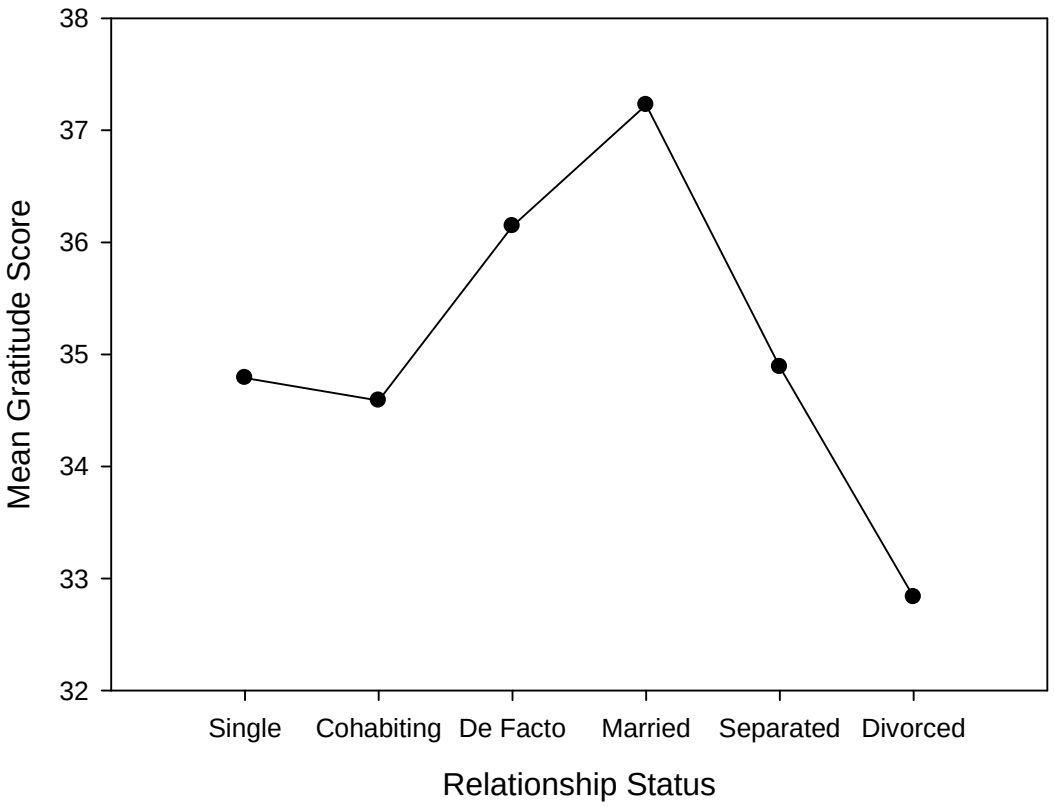


Figure 23. Mean Gratitude score by relationship status.

For Positive Affect and the absence of Negative Affect, the assumption of homogeneity of variance was violated in both cases. A main effect of relationship status was noted for positive affect, $F(5, 52.64) = 7.83$, $p < .05$, and for the absence of negative affect, $F(5, 51.72) = 13.89$, $p < .05$. With regard to both positive affect and the absence of negative affect, post-hoc analyses revealed that participants who were married reported significantly higher scores than those who were either single or divorced. Figure 24 illustrates the mean scores for Positive Affect and the absence of Negative Affect for each category of relationship status.

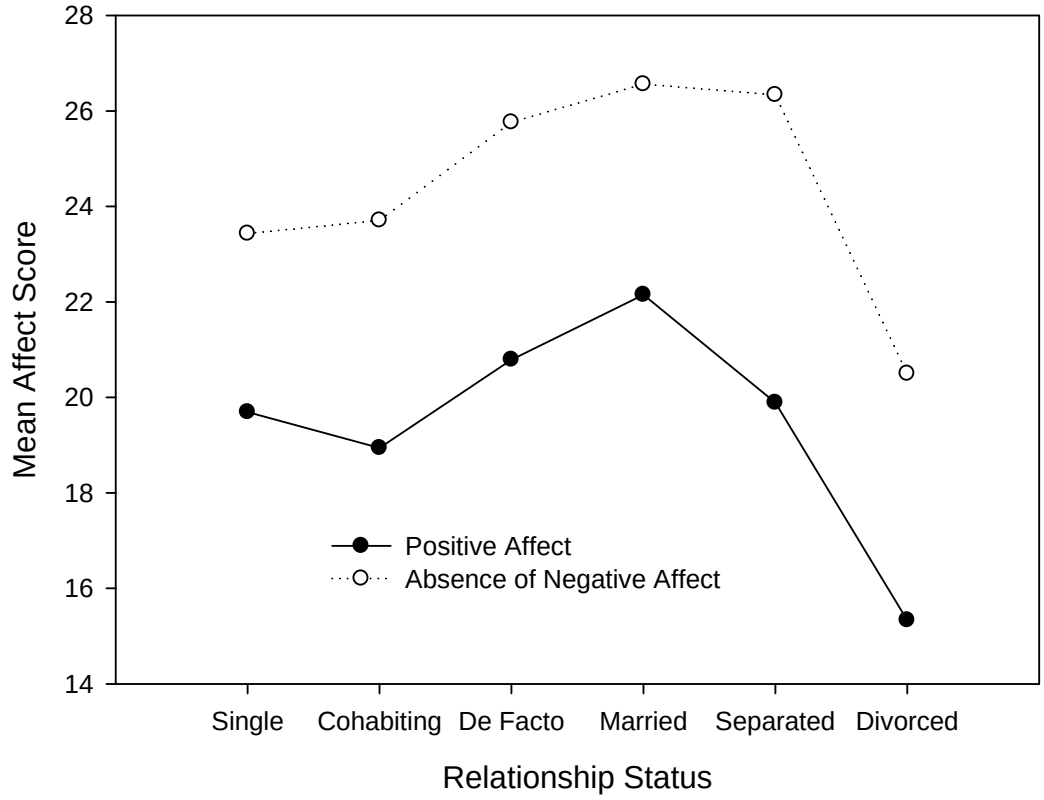


Figure 24. Mean Affect scores by relationship status.

With regard to Social Well-Being, the assumption of homogeneity of variance was violated for Social Integration and Social Contribution. A main effect of relationship status was noted for Social Integration, $F(5, 52.08) = 2.38$, $p < .05$; Social Acceptance, $F(5, 565) = 3.16$, $p < .05$; Social Contribution, $F(5, 53.02) = 2.70$, $p < .05$; and Social Actualisation, $F(5, 565) = 2.67$, $p < .05$. No main effect was noted for Social Coherence. Post-hoc testing revealed that in all instances, participants who were married reported significantly higher scores than those who were single. Figure 25 illustrates the mean Social Well-Being score for each category of relationship status.

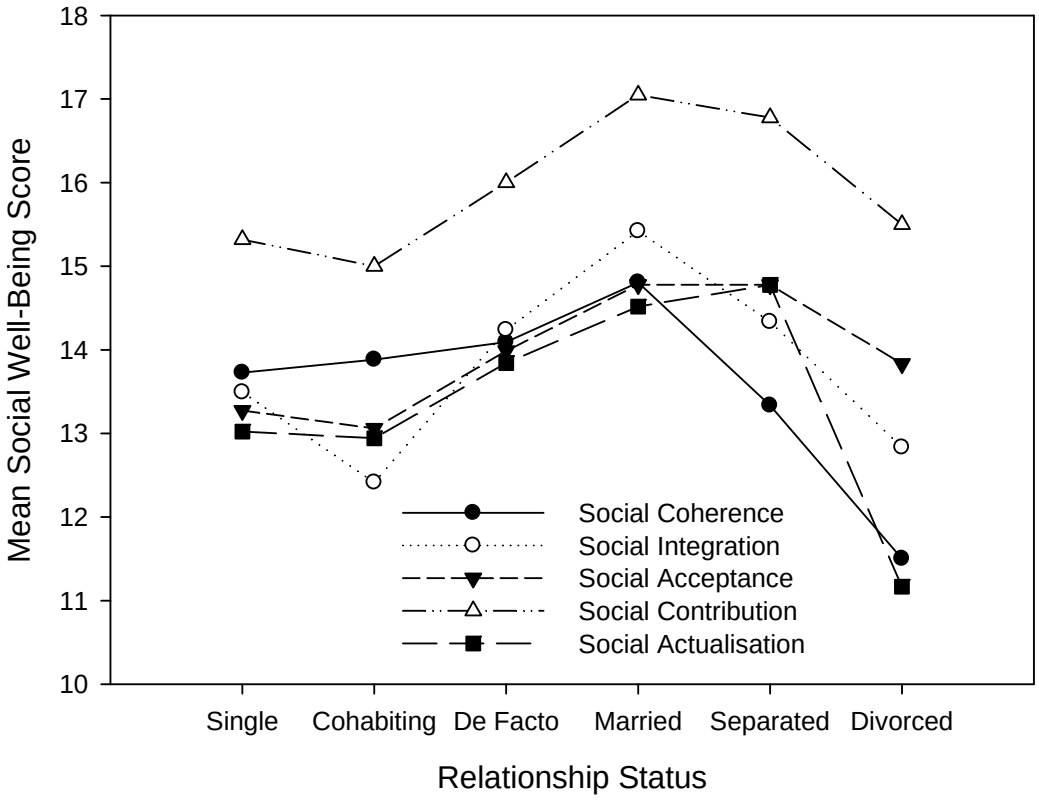


Figure 25. Mean Social Well-Being score by relationship status.

Health Status. One-way ANOVAs were conducted in order to determine the effect of health status on positive psychological functioning. For Psychological Well-Being, the assumption of homogeneity of variance was violated for all factors except Personal Growth. Analyses revealed a main effect of health status for all aspects of psychological well-being: Autonomy, $F(4, 41.58) = 5.89$, $p < .05$; Environmental Mastery, $F(4, 41.48) = 23.97$, $p < .05$; Personal Growth, $F(4, 569) = 5.65$, $p < .05$; Positive Relations with Others, $F(4, 41.50) = 13.66$, $p < .05$; Purpose in Life, $F(4, 41.57) = 12.54$, $p < .05$; and Self-Acceptance, $F(4, 41.47) = 20.57$, $p < .05$. Post-hoc analyses revealed that, for Autonomy, participants who reported Fair health reported significantly lower scores than those who reported Good, Very Good, or Excellent Health. A similar finding applied for Environmental Mastery, and in addition participants who reported Good, Very Good, or Excellent health reported significantly lower scores than those in better health categories. For Personal Growth, participants who reported Fair health reported significantly lower scores than those who reported Excellent health, as did those who

reported Good health. For Positive Relations with Others, those who reported either Fair or Good health reported significantly lower scores than those who reported either Very Good or Excellent Health. For Purpose in Life, those who reported Fair health reported significantly lower scores than those who reported Good, Very Good, or Excellent Health, while those who reported Good health reported significantly lower scores than those who reported Very Good or Excellent Health. For Self-Acceptance, those who reported Fair, Good, or Very Good health reported significantly lower scores than those in better health categories. Figure 26 illustrates the mean Psychological Well-Being scores for each category of health status.

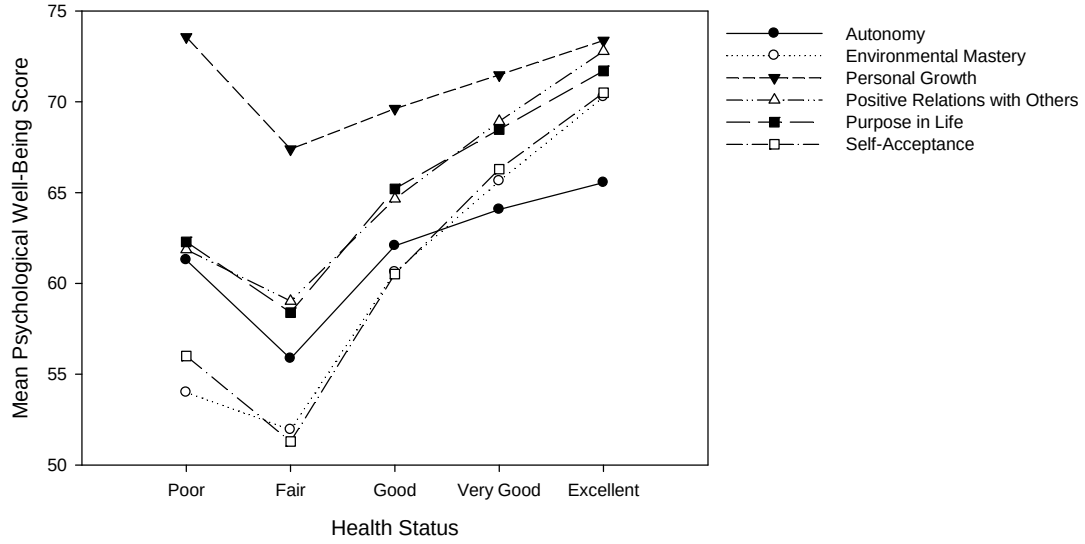


Figure 26. Mean Psychological Well-Being score by health status.

With regard to Gratitude, the assumption of homogeneity of variance was violated. There was a main effect of health status, $F(4, 41.98) = 11.00$, $p < .05$. Post-hoc analyses revealed that those who reported Fair or Good health reported significantly lower scores than those who reported either Very Good or Excellent health. Figure 27 illustrates the mean Gratitude for each category of health status.

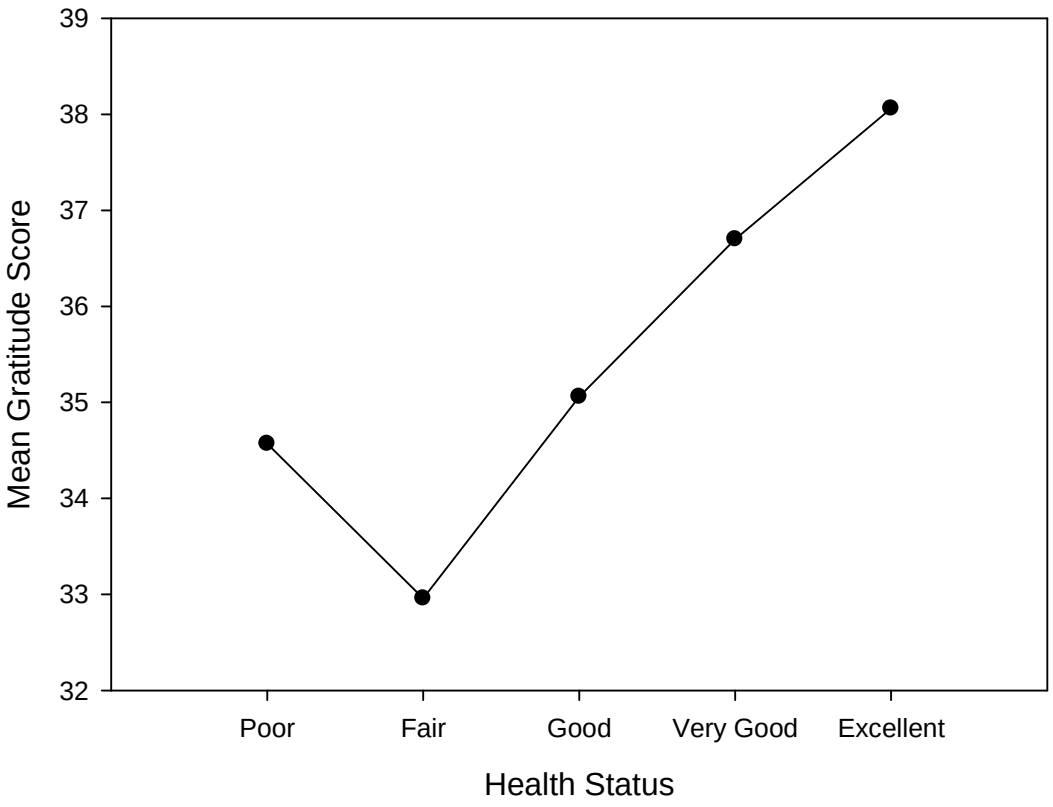


Figure 27. Mean Gratitude score by health status.

With regard to Positive Affect and the absence of Negative Affect, the assumption of homogeneity of variance was violated in both cases. There was a main effect of health status for both Positive Affect, $F(4, 41.44) = 22.47$, $p < .05$ and the absence of Negative Affect, $F(4, 41.51) = 19.98$, $p < .05$.Post-hoc analyses revealed that those who reported Fair, Good, or Very Good health reported significantly lower scores than those in better health categories in both cases. Figure 28 illustrates the mean scores for Positive Affect and the absence of Negative Affect for each category of health status.

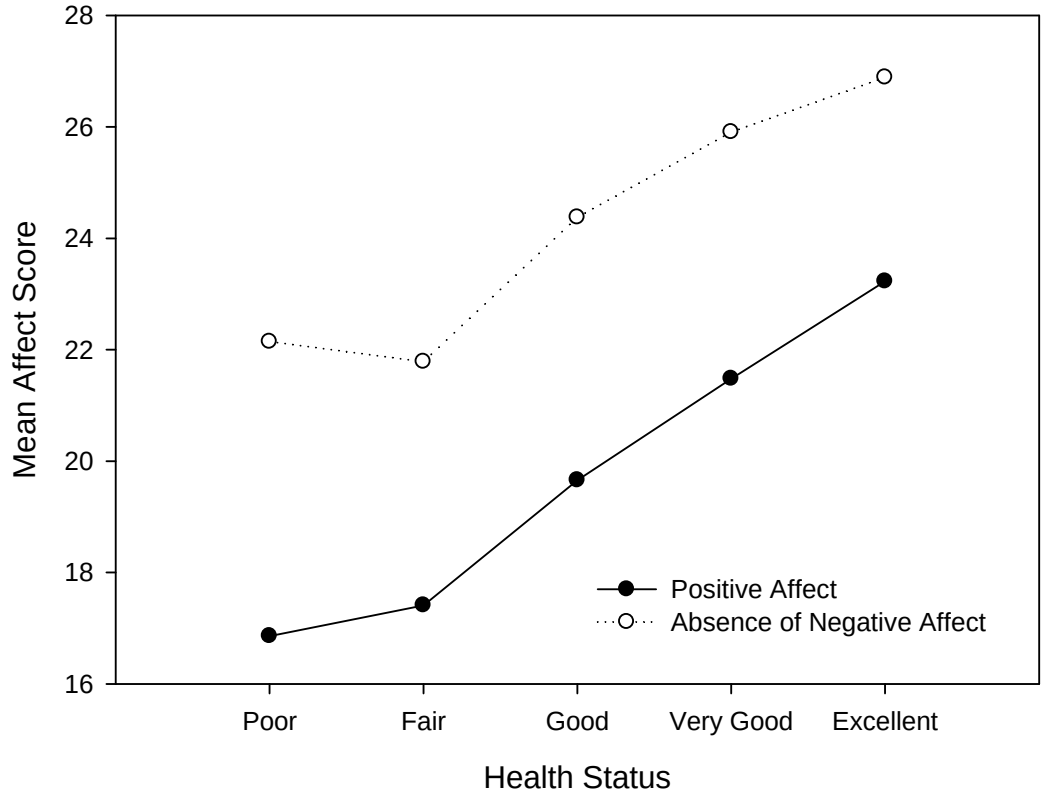


Figure 28. Mean Affect scores by health status.

With regard to Social Well-Being, the assumption of homogeneity of variance was violated for Social Integration, Social Contribution, and Social Actualisation. Analyses revealed a main effect of health status for all aspects of Social Well-Being: Social Coherence, $F(4, 568) = 3.43$, $p < .05$; Social Integration, $F(4, 41.64) = 12.79$, $p < .05$; Social Acceptance, $F(4, 568) = 4.51$, $p < .05$; Social Contribution, $F(4, 41.51) = 10.02$, $p < .05$; and Social Actualisation, $F(4, 41.29) = 7.21$, $p < .05$. Post-hoc analyses revealed that, for Social Coherence, those who reported Fair health reported significantly lower scores than those who reported Excellent health. For Social Integration, Social Contribution, and Social Actualisation, those who reported either Fair or Good health reported significantly lower scores than those who reported either Very Good or Excellent health. For Social Acceptance, those who reported Fair health reported significantly lower scores than those who reported either Very Good or Excellent health. Figure 29 illustrates the mean Social Well-Being scores for each category of health status.

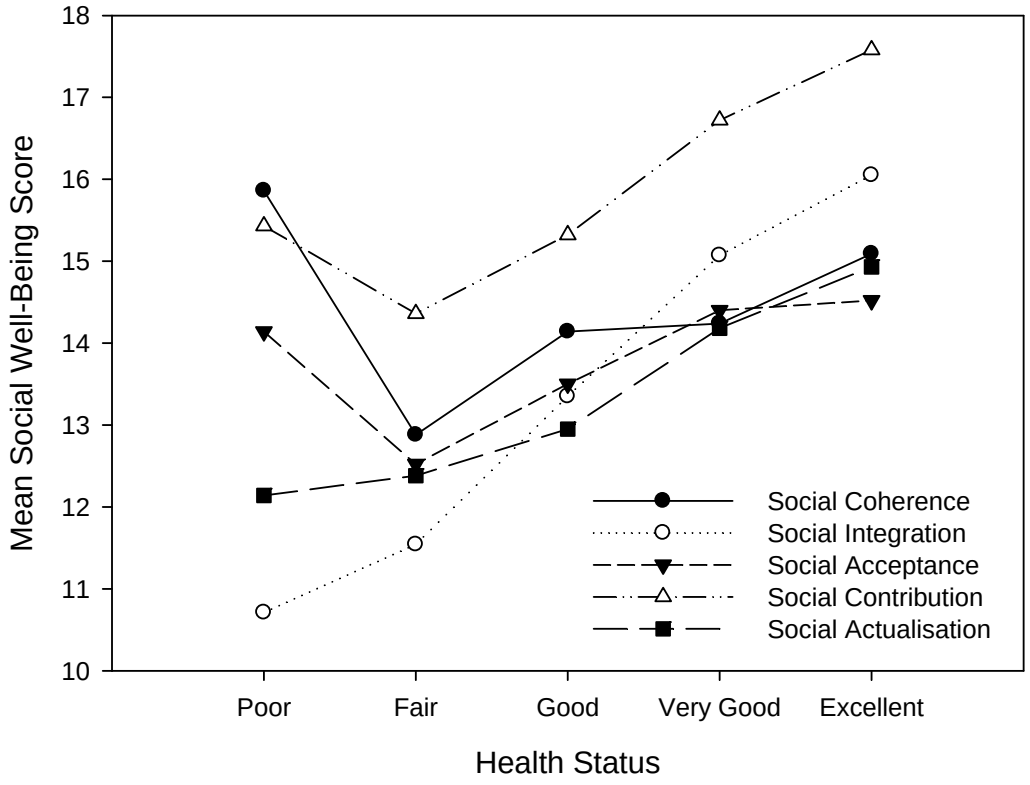


Figure 29. Mean Social Well-Being score by health status.

Discussion

Although the mean EDS score for the entire sample indicated that the likelihood of depression was low, the student sample was only just below the cut-off for borderline depression and displayed significantly higher EDS mean scores than the maternity sample. Indeed, more than twice as many students were considered to be depressed than those participants in the maternity sample.

Overall, it would appear that factors associated with socioeconomic well-being are linked to depression status. Participants holding Bachelor's degrees display significantly lower levels of depression than those who have completed Year 12 of high school. In addition, participants who work full-time display significantly lower levels of depression than any other form of employment, with the exception of women who undertake home duties. It is considered that these two factors are likely to be correlated, and form the basis of overall economic well-being for most of the sample.

Indeed, in combination, it would be expected that students experience lower levels of economic well-being than their maternity sample counterparts.

Another component of socioeconomic well-being is whether a person is in a stable relationship. In this sample, participants who reported being either married or in a de facto relationship generally reported lower EDS scores than those in solitary relationships (single, separated, or divorced). With regard to the student sample, most of the participants reported being single, while most of the maternity sample reported being either married or in a de facto relationship. Consequently, to the degree to which being in a stable relationship acts as a buffer against depression, this may be a factor contributing to the higher levels of depression reported in the student sample. This is consistent, particularly with regard to the student sample, with Eisenberg, Gollust, Golberstein, and Hefner's (2007) findings that being married or in a de facto relationship are associated with fewer mental health problems.

One area in which there does not appear to be any difference between the groups is in regard to participants' health status. Nevertheless, a participant's health status appears to be a major contributing factor to her mental health, with mean EDS scores decreasing in a linear fashion as health status improves.

Psychological Well-Being

Five hundred and seventy-four participants provided information regarding their psychological well-being. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. Figure 30 depicts psychological well-being at Time 1. One-way ANOVAs were conducted in order to determine whether the student and maternity samples reported different levels on each of the scales. The assumption of homogeneity of variance was violated for Environmental Mastery, Positive Relations with Others, Purpose in Life, and Self-Acceptance. The analysis revealed that students reported significantly lower levels of psychological well-being than the maternity sample on Autonomy, $F(1, 572) = 17.72$, $p < .05$; Environmental Mastery, $F(1, 549.50) = 64.31$, $p < .05$; Positive Relations with Others, $F(1, 556.77) = 12.12$, $p < .05$; Purpose in Life, $F(1, 550.38) = 8.87$, $p < .05$; and Self-Acceptance, $F(1,$

532.44) = 33.19, *p*< .05. There was no significant difference between the groups on Personal Growth.

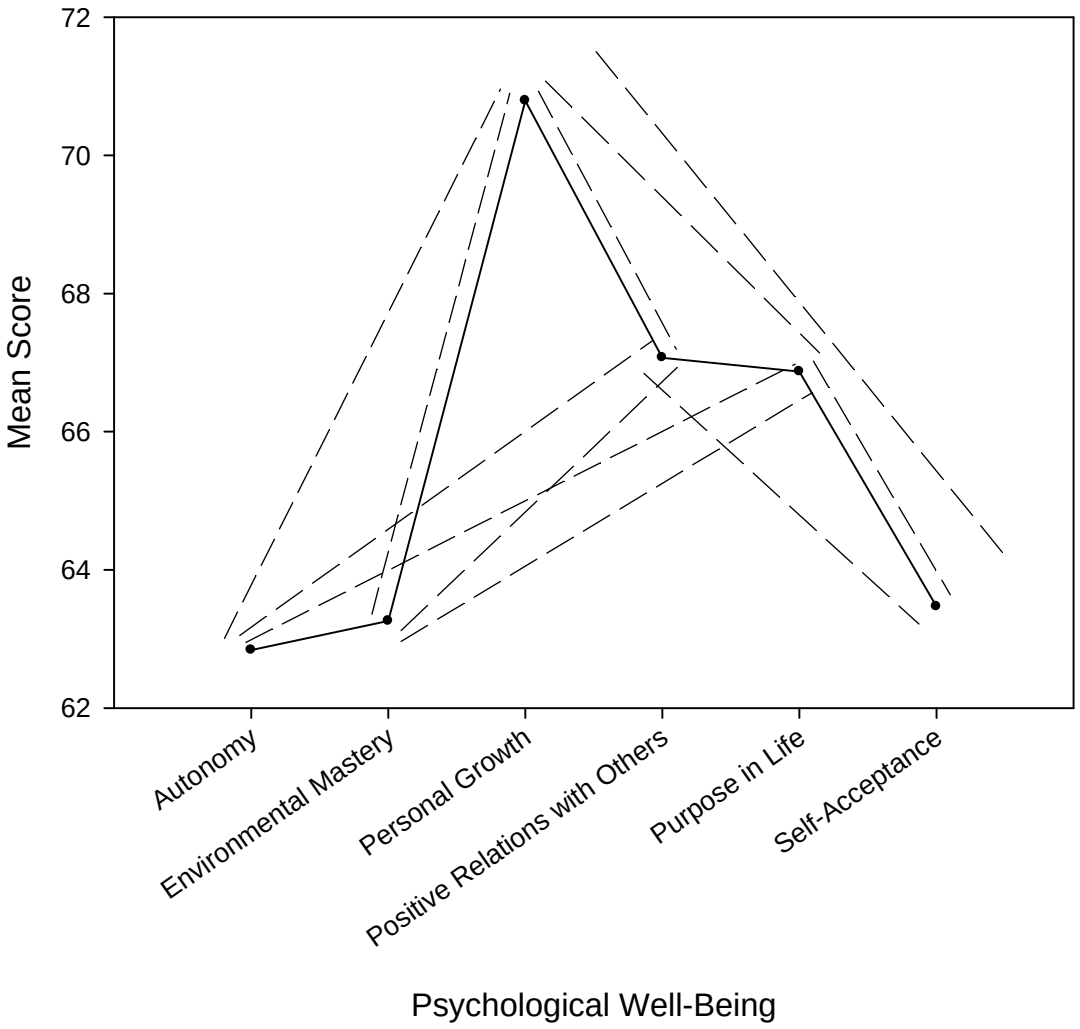


Figure 30. Psychological Well-Being at Time 1. Dashed lines indicate significant differences.

Social Well-Being

Five hundred and seventy-three participants provided information regarding their social well-being. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. Figure 31 depicts social well-being at Time 1. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels on each of the scales. The assumption of

homogeneity of variance was violated for Social Contribution and Social Actualisation. The analysis revealed that students reported significantly lower levels of social well-being than the maternity sample on Social Acceptance, $F(1, 571) = 4.82$, $p < .05$ and Social Actualisation, $F(1, 550.58) = 6.23$, $p < .05$.

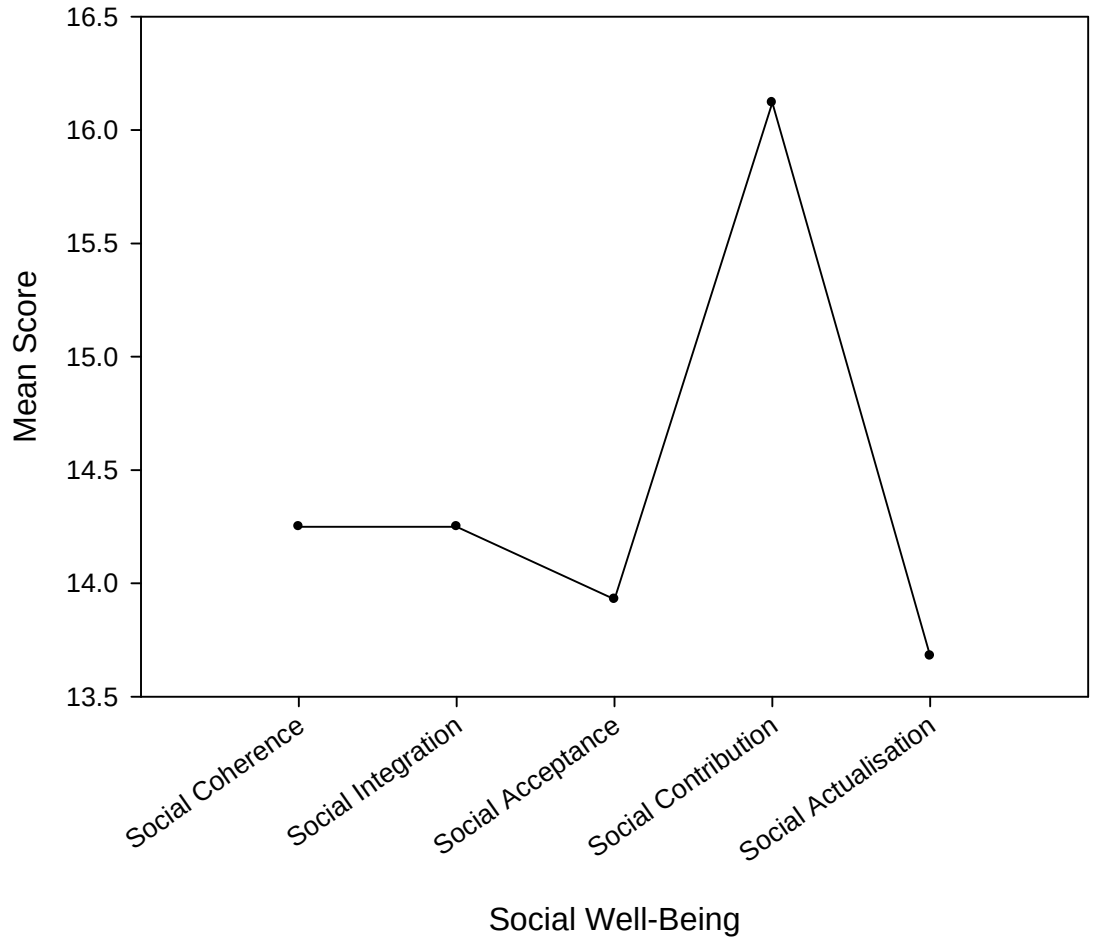


Figure 31. Social Well-Being at Time 1.

Positive and Negative Affect

Five hundred and seventy-four participants provided information regarding the presence of Positive Affect and the absence of Negative Affect. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels on each of the scales. The assumption of

homogeneity of variance was violated for both affect scales. The analysis revealed that students reported significantly lower levels of Positive Affect than the maternity sample, $F(1, 549.23) = 32.60$, $p < .05$, and significantly lower levels of the absence of Negative Affect, $F(1, 529.74) = 46.28$, $p < .05$.

Gratitude

Five hundred and seventy-four participants provided information regarding their level of Gratitude. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels of Gratitude. The assumption of homogeneity of variance was violated. The analysis revealed that students ($M = 35.29$, $SD = 5.76$) reported significantly lower levels of Gratitude than the maternity sample ($M = 36.64$, $SD = 5.01$), $F(1, 551.34) = 8.93$, $p < .05$.

Depression Status

A series of one-way ANOVAs was conducted in order to determine whether positive psychological functioning differed according to whether participants were categorized Not Depressed, Borderline Depression, or Depressed according to the EDS. In most cases the assumption of homogeneity of variance was violated. For Psychological Well-Being, the analysis revealed a main effect of depression category for Autonomy, $F(2, 161.83) = 41.40$, $p < .05$; Environmental Mastery, $F(2, 160.34) = 144.80$, $p < .05$; Personal Growth, $F(2, 159.89) = 31.32$, $p < .05$; Positive Relations with Others, $F(2, 161.96) = 81.34$, $p < .05$; Purpose in Life, $F(2, 151.80) = 68.18$, $p < .05$; and Self-Acceptance, $F(2, 152.66) = 139.46$, $p < .05$. Post-hoc testing revealed that participants classified as Not Depressed reported significantly higher scores than participants who were classified as either Borderline Depression or Depressed on all factors. Participants classified as experiencing Borderline Depression reported significantly higher scores than those classified as Depressed on all factors except Autonomy.

With Social Well-Being, the analysis revealed a main effect of depression category for Social Coherence, $F(2, 570) = 24.75$, $p < .05$; Social Integration, $F(2, 156.62) = 52.48$, $p < .05$; Social Acceptance, $F(2, 570) = 40.98$, $p < .05$; Social Contribution, $F(2, 150.58) = 35.01$, $p < .05$; and Social Actualisation, $F(2, 570) = 41.07$, $p < .05$. Post-

hoc testing revealed that participants classified as Not Depressed reported significantly higher scores than participants who were classified as either Borderline Depression or Depressed on all factors. Participants classified as experiencing Borderline Depression reported significantly higher scores than those classified as Depressed on Social Integration and Social Contribution.

With regard to Positive Affect and the absence of Negative Affect, the analysis revealed a main effect of depression category for Positive Affect, $F(2, 159.19) = 180.46$, $p < .05$ and the absence of Negative Affect, $F(2, 146.01) = 172.75$, $p < .05$. Post-hoc testing revealed that participants classified as Not Depressed reported significantly higher scores on both factors than participants who were classified as either Borderline Depression or Depressed. Participants classified as experiencing Borderline Depression reported significantly higher scores on both factors than those classified as Depressed.

In the case of Gratitude, the analysis revealed a main effect of depression category for Gratitude, $F(2, 152.70) = 45.63$, $p < .05$. Post-hoc testing revealed that participants classified as Not Depressed ($M = 37.53$, $SD = 4.23$) reported significantly higher Gratitude scores than participants who were classified as either Borderline Depression ($M = 34.09$, $SD = 4.84$) or Depressed ($M = 31.66$, $SD = 7.00$). Participants classified as experiencing Borderline Depression reported significantly higher scores on Gratitude than those classified as Depressed.

A further distinction that can be made between people in terms of their depression status is whether they can be considered Never Depressed or Formerly Depressed, in addition to those participants who were classified as Currently Depressed. That is, whether it is likely that they have experienced depression at some time in their life even though they would not currently be considered to be depressed. In order to determine an appropriate classification, participants were asked questions relating to times in their life when they had either felt depressed or down or less interested in most things over a period of at least two weeks, as well as whether they had ever been diagnosed or treated for depression, and whether they were being treated for depression at the time of completing the questionnaire. For only those

people whose EDS score did not fall into the Depressed range, they were classified as formerly Depressed if they answered 'yes' to any of the questions.

One-way ANOVAs were conducted in order to determine whether positive psychological functioning differed in terms of these classifications. The assumption of homogeneity of variance was violated in every case except Autonomy. For psychological well-being the analysis revealed a main effect of depression status for Autonomy, $F(2, 571) = 33.64$, $p < .05$; Environmental Mastery, $F(2, 260.80) = 140.21$, $p < .05$; Personal Growth, $F(2, 259.18) = 22.65$, $p < .05$; Positive Relations with Others, $F(2, 256.15) = 74.76$, $p < .05$; Purpose in Life, $F(2, 257.00) = 61.31$, $p < .05$; and Self-Acceptance, $F(2, 255.07) = 121.34$, $p < .05$. Post-hoc testing revealed that participants classified as Never Depressed reported significantly higher scores on all factors than those classified as Currently Depressed, and reported significantly higher scores on Environmental Mastery, Positive Relations with Others, Purpose in Life, and Self-Acceptance than those classified as Formerly Depressed. Participants classified as Formerly Depressed reported significantly higher scores on all factors than those classified as Currently Depressed.

With Social Well-Being, the analysis revealed a main effect of depression category for Social Coherence, $F(2, 265.62) = 15.61$, $p < .05$; Social Integration, $F(2, 259.53) = 44.10$, $p < .05$; Social Acceptance, $F(2, 570) = 27.78$, $p < .05$; Social Contribution, $F(2, 254.07) = 26.41$, $p < .05$; and Social Actualisation, $F(2, 570) = 28.81$, $p < .05$. Post-hoc testing revealed that participants classified as Currently Depressed reported significantly lower scores than those classified as either Never Depressed or Formerly Depressed. Participants classified as Never Depressed reported significantly higher scores than those classified as Formerly Depressed for Social Integration and Social Acceptance.

For Positive Affect and the absence of Negative Affect, the analysis revealed a main effect of depression category for Positive Affect, $F(2, 259.77) = 154.52$, $p < .05$, and the absence of Negative Affect, $F(2, 242.12) = 150.68$, $p < .05$. Post-hoc testing revealed that participants classified as Currently Depressed reported significantly lower scores than those classified as either Never Depressed or Formerly Depressed for both factors. Participants classified as Never Depressed also reported significantly higher scores than those classified as Formerly Depressed for both factors.

With Gratitude, the analysis revealed a main effect of depression category for Gratitude, $F(2, 247.29) = 33.15$, $p < .05$. Post-hoc testing revealed that participants classified as Currently Depressed ($M = 31.76$, $SD = 6.94$) reported significantly lower Gratitude scores than those classified as either Never Depressed ($M = 37.71$, $SD = 4.05$) or Formerly Depressed ($M = 36.30$, $SD = 4.81$). Participants classified as Never Depressed also reported significantly higher Gratitude scores than those classified as Formerly Depressed.

Chapter 7 – Results Relating to Independence of Positive Psychological Functioning and Depression

The literature review suggested that positive and negative psychological functioning are separate systems. As such, it might be expected that positive psychological functioning would be resistant to changes in mood consistent with the development of depression. Analyses were conducted in order to determine the extent to which this was the case.

The initial step involved examining overall positive psychological functioning, using a composite score derived by calculating the mean of each participant's individual *z*-scores on each positive psychological functioning measure employed, both at Time 1 and Time 2. Pearson correlation coefficients were calculated on EDS scores at Time 1 and Time 2, along with composite well-being scores for Time 1 and Time 2. With the alpha level set at .05, the analyses indicated that all these factors were significantly correlated. The results are presented in Table 12.

Table 12

Pearson correlation coefficients between EDS and composite well-being, Time 1 and Time 2

		EDS Score Time 1	EDS Score Time 2	Composite Well-Being Time 1	Composite Well-Being Time 2
EDS Score Time 1	Pearson Correlation	1.00	0.58	-0.69	-0.59
	n	574	409	574	409
EDS Score Time 2	Pearson Correlation		1.00	-0.51	-0.69
	n		409	409	409
Composite Well-Being Time 1	Pearson Correlation			1.00	0.84
	n			574	409
Composite Well-Being Time 2	Pearson Correlation				1.00
	n				409

These results indicate that there is a strong negative correlation between EDS scores and composite well-being, which is not supportive of the notion that they are separate systems.

Analyses were then conducted examining each of the aspects of positive psychological functioning measured during the present study in order to determine the extent to which any of these individual factors might be resistant to changes in mood as measured by EDS scores.

Psychological Well-Being

In order to determine the impact of decreasing mood on psychological well-being, each participant's EDS score was classified according to a hierarchy. Using the EDS cut-off for depression of 12 as a reference point, the range of scores was classified into seven categories. These were: 0–4, 5–8, 9–12, 13–16, 17–20, 21–24, and 25–30.

These category sizes were chosen in order to be smaller than what is considered to be a clinically significant change on the EDS of 5 points (see page 123). Because there are 31 possible scores on the EDS, it was not possible to construct categories of equal size. Consequently, the lowest category was constructed from 0–4 because it was considered that scores this low would be unlikely to show any substantial differences between one another, while the highest category extended from 25–30 for the same reason. Table 13 shows the number of participants in each category for Time 1 and Time 2. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 32 portrays the relative profiles of each category for all psychological well-being factors at Time 1 and Time 2.

Table 13

Number of participants in each EDS hierarchy category

Category	Number of Participants at Time 1	Percentage	Number of Participants at Time 2	Percentage
0–4	200	34.8	201	35.0
5–8	168	29.3	105	18.3
9–12	105	18.3	51	8.9
13–16	58	10.1	32	5.6
17–20	33	5.7	12	2.1
21–24	5	0.9	7	1.2
25–30	5	0.9	1	0.2

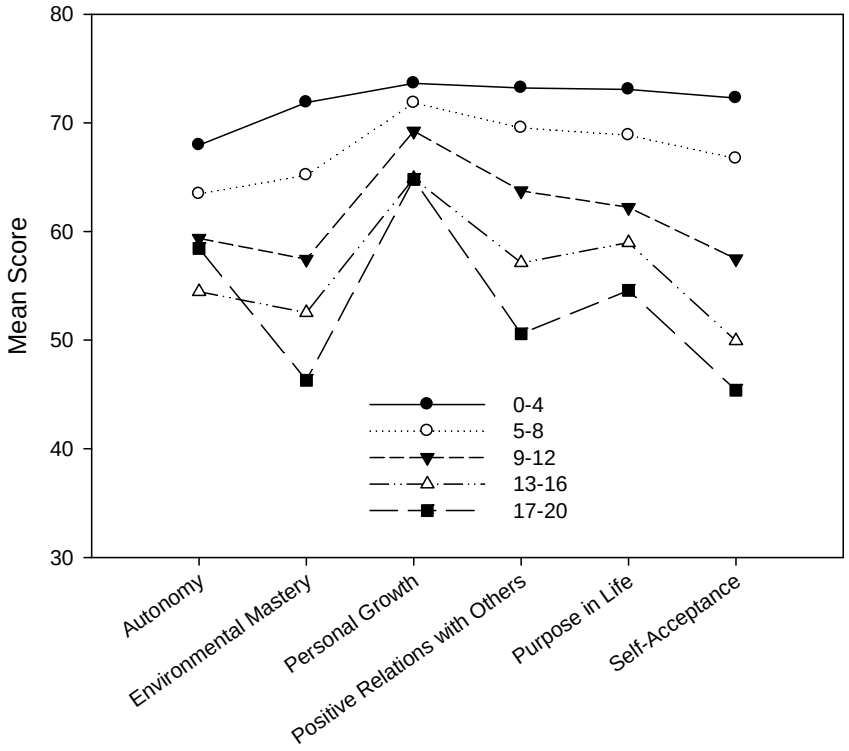


Figure 32. Psychological Well-Being by EDS Category at Time 1 and Time 2.

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced psychological well-being at both Time 1 and Time 2. At Time 1, the assumption of homogeneity of variance was violated for all factors except Autonomy. The results indicated a main effect of EDS category for all Psychological Well-Being Factors: Autonomy, $F(4, 559) = 26.14$, $p < .05$; Environmental Mastery, $F(4, 144.33) = 89.35$, $p < .05$; Personal Growth, $F(4, 146.94) = 17.37$, $p < .05$; Positive Relations with Others, $F(4, 144.51) = 42.88$, $p < .05$; Purpose in Life, $F(4, 142.00) = 39.37$, $p < .05$; and Self-Acceptance, $F(4, 141.61) = 76.25$, $p < .05$. Post-hoc testing revealed that, with regard to Autonomy, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in the categories 9–12 and 13–16, but not 17–20; participants in the 9–12 and 13–16 categories were not found to be significantly different from those in any higher category. With regard to Environmental Mastery, participants with EDS scores in the 0–4, 5–8, and 9–12 categories were found to have significantly higher scores than participants in all other categories; and participants in the 13–16 category were not found to be significantly different to those in the 17–20 category. With regard to Personal Growth, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except the 5–8 category; participants in the 5–8 category were found to have significantly higher scores than participants in the categories 13–16 and 17–20, but not 9–12; and participants in the 9–12 and 13–16 categories were not found to be significantly different to those in the 17–20 category. With regard to Positive Relations with Others, participants with EDS scores in the 0–4, 5–8, and 9–12 categories were found to have significantly higher scores than participants in all other categories; participants in the 13–16 category were not found to be significantly different to those in the 17–20 category. With regard to Purpose in Life, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to have significantly higher scores than participants in the 17–20 category, but not 13–16; and participants in the 13–16 category were not significantly different to those in the

17–20 category. With regard to Self-Acceptance, participants with EDS scores in the 0–4, 5–8, and 9–12 categories were found to have significantly higher scores than participants in all other categories; and participants in the 13–16 category were not significantly different to those in the 17–20 category. For clarity, these results are depicted in Table 14. It is apparent from these results that Psychological Well-Being decreases as EDS scores increase.

Table 14

Significant difference between EDS hierarchy categories for Psychological Well-Being at Time 1. An upward arrow (↑) indicates that the row category is significantly higher than the corresponding column category. A dash (–) indicates no significant difference.

	5-8	9-12	13-16	17-20
Autonomy				
0-4	↑	↑	↑	↑
5-8		↑	↑	–
9-12			–	–
13-16				–
Environmental Mastery				
0-4	↑	↑	↑	↑
5-8		↑	↑	↑
9-12			↑	↑
13-16				–
Personal Growth				
0-4	–	↑	↑	↑
5-8		–	↑	↑
9-12			–	–
13-16				–
Positive Relations with Others				
0-4	↑	↑	↑	↑
5-8		↑	↑	↑
9-12			↑	↑
13-16				–

		5-8	9-12	13-16	17-20
Purpose in Life					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	↑
	13-16				–
Self-Acceptance					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			↑	↑
	13-16				–

At Time 2, the assumption of homogeneity of variance was violated for all factors except Autonomy and Environmental Mastery. The results indicated a main effect of EDS category for all Psychological Well-Being Factors: Autonomy, $F(4, 396) = 19.35$, $p < .05$; Environmental Mastery, $F(4, 396) = 80.91$, $p < .05$; Personal Growth, $F(4, 57.23) = 17.14$, $p < .05$; Positive Relations with Others, $F(4, 58.39) = 29.95$, $p < .05$; Purpose in Life, $F(4, 58.00) = 47.00$, $p < .05$; and Self-Acceptance, $F(4, 59.43) = 96.86$, $p < .05$. Post-hoc testing revealed that, with regard to Autonomy, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in the categories 9–12 and 13–16, but not 17–20; participants in the 9–12 and 13–16 categories were not found to be significantly different from those in any higher category. With regard to Environmental Mastery, participants with EDS scores in each categories were found to have significantly different scores than participants in all other categories. With regard to Personal Growth, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in the categories 9–12 and 17–20, but not 13–16; and participants in the 9–12 and 13–16 categories were not found to be significantly different to those in the 17–20 category.

With regard to Positive Relations with Others, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to be significantly higher than those in the 17–20 category, but not 13–16; participants in the 13–16 category were not found to be significantly different to those in the 17–20 category. With regard to Purpose in Life, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to have significantly higher scores than participants in the 17–20 category, but not 13–16; and participants in the 13–16 category were not significantly different to those in the 17–20 category. With regard to Self-Acceptance, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to have significantly higher scores than those in the 17–20 category, but not 13–16; and participants in the 13–16 category were significantly higher than those in the 17–20 category. For clarity, these results are depicted in Table 15. As with Time 1, and in a similar fashion, it is apparent from these results that Psychological Well-Being decreases as EDS scores increase.

Table 15

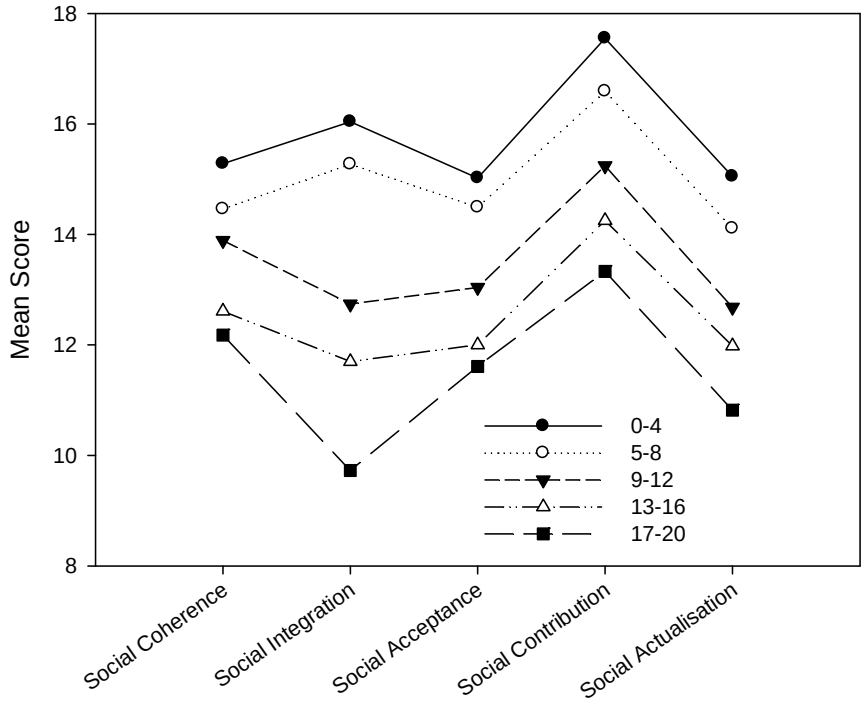
Significant difference between EDS hierarchy categories for Psychological Well-Being at Time 2. An upward arrow (↑) indicates that the row category is significantly higher than the corresponding column category. A dash (–) indicates no significant difference.

		5-8	9-12	13-16	17-20
Autonomy					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	–
	9-12			–	–
	13-16				–
Environmental Mastery					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			↑	↑
	13-16				↑
Personal Growth					
	0-4	–	↑	↑	↑
	5-8		↑	–	↑
	9-12			–	–
	13-16				–
Positive Relations with Others					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	–
	13-16				–
Purpose in Life					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	↑
	13-16				–

	5-8	9-12	13-16	17-20
Self-Acceptance				
0-4	↑	↑	↑	↑
5-8		↑	↑	↑
9-12			–	↑
13-16				↑

Social Well-Being

In order to determine the impact of decreasing mood on social well-being, each participant's EDS score was also classified according to the same hierarchy. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 33 portrays the relative profiles of each category for all social well-being factors.



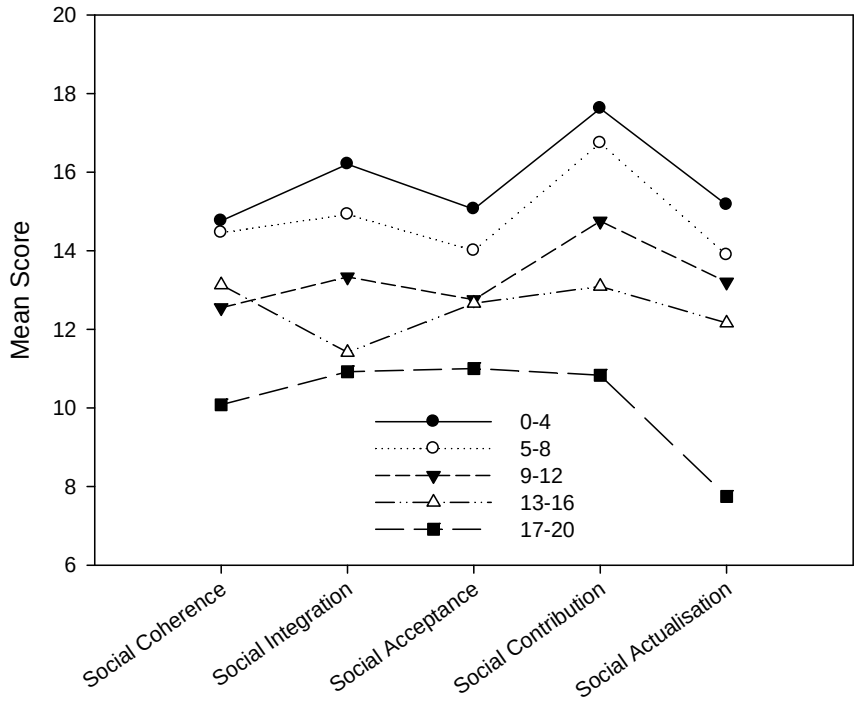


Figure 33. Social Well-Being by EDS Category at Time 1 and Time 2.

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced social well-being at Time 1. The assumption of homogeneity of variance was violated for Social Integration and Social Contribution. The results indicated a main effect of EDS category for Social Coherence, $F(4, 558) = 10.39$, $p < .05$; Social Integration, $F(4, 145.16) = 26.76$, $p < .05$; Social Acceptance, $F(4, 558) = 17.43$, $p < .05$; Social Contribution, $F(4, 142.00) = 18.80$, $p < .05$; and Social Actualisation, $F(4, 588) = 19.52$, $p < .05$. Post-hoc testing revealed that, with regard to Social Coherence, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in the 13–16 and 17–20 categories; and participants in the 9–12 and 13–16 categories were not significantly different to any higher categories. With regard to Social Integration, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories; participants in the 9–12 category were found to have significantly higher scores than those in the 17–20 category; and participants in the 13–16 category were not found to be significantly different from those in the 17–20 category. With regard to Social Acceptance, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories; and participants in the 9–12 and 13–16 categories were not significantly different from those in any higher category. With regard to Social Contribution, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories; and participants in the 9–12 and 13–16 categories were not significantly different from those in any higher category. With regard to Social Actualisation, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories with the exception of 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories; participants

in the 9–12 category were found to have significantly higher scores than participants in the 17–20 category; and participants in the 13–16 category were not found to be significantly different to those in the 17–20 category. For clarity, these results are depicted in Table 16. It is apparent from these results that Social Well-Being decreases as EDS scores increase.

Table 16

Significant difference between EDS hierarchy categories for Social Well-Being

		5-8	9-12	13-16	17-20
Social Coherence					
	0-4	–	↑	↑	↑
	5-8		–	↑	↑
	9-12			–	–
	13-16				–
Social Integration					
	0-4	–	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	↑
	13-16				–
Social Acceptance					
	0-4	–	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	–
	13-16				–
Social Contribution					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	–
	13-16				–
Social Actualisation					
	0-4	–	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	↑
	13-16				–

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced social well-being at Time 2. The assumption of homogeneity of variance was violated for Social Acceptance. The results indicated a

main effect of EDS category for Social Coherence, $F(4, 396) = 10.15$, $p < .05$; Social Integration, $F(4, 396) = 14.68$, $p < .05$; Social Acceptance, $F(4, 61.72) = 13.80$, $p < .05$; Social Contribution, $F(4, 396) = 26.54$, $p < .05$; and Social Actualisation, $F(4, 396) = 16.08$, $p < .05$. Post-hoc testing revealed that, with regard to Social Coherence, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8 and 13–16; participants in the 5–8 category were found to have significantly higher scores than participants in the 9–12 and 17–20 categories; participants in the 9–12 category were not significantly different to any higher categories; and participants in the 13–16 category were found to have significantly higher scores than those in the 17–20 category. With regard to Social Integration, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories except 9–12; participants in the 9–12 category were not significantly different to any higher category; and participants in the 13–16 category were not found to be significantly different from those in the 17–20 category. With regard to Social Acceptance, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in the 17–20 category; and participants in the 9–12 and 13–16 categories were not significantly different from those in any higher category. With regard to Social Contribution, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to have significantly higher scores than those in the 17–20 category; and participants in the 13–16 category were not significantly different from those in the 17–20 category. With regard to Social Actualisation, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all higher categories; participants in the 5–8,9–12, and 13–16 categories were found to have significantly higher scores than participants in the 17–20 category. For clarity, these results are depicted in Table 17. It is apparent from these results that Social Well-Being decreases as EDS scores increase.

Table 17

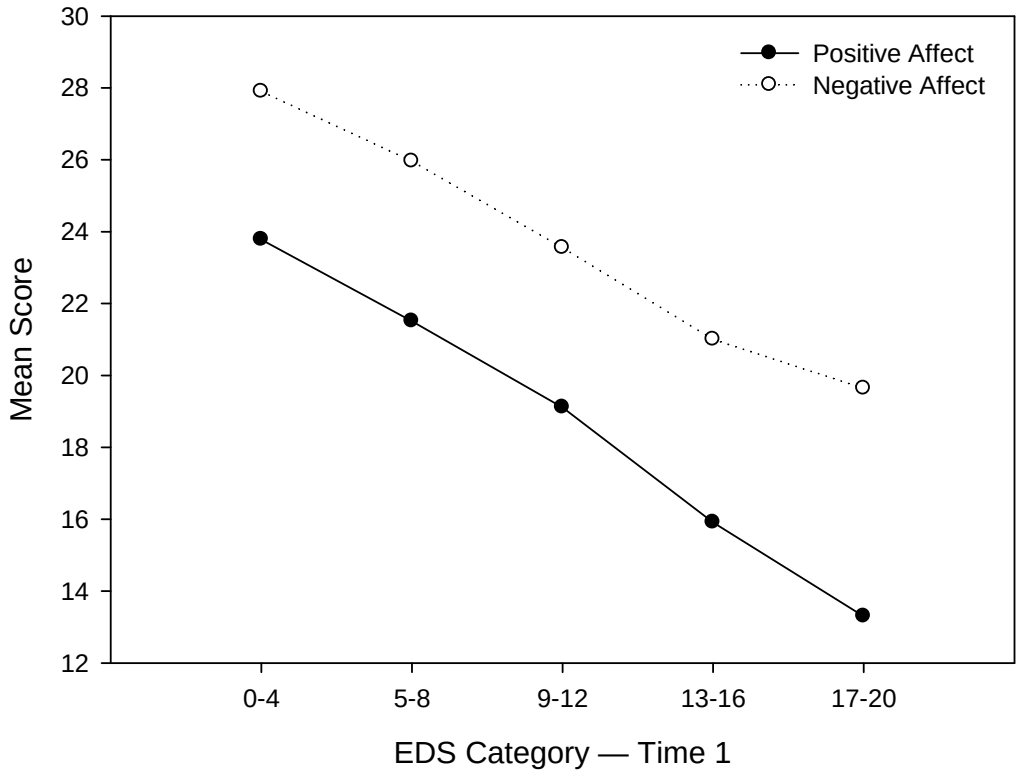
Significant difference between EDS hierarchy categories for Social Well-Being

		5-8	9-12	13-16	17-20
Social Coherence					
	0-4	–	↑	–	↑
	5-8		↑	–	↑
	9-12			–	–
	13-16				↑
Social Integration					
	0-4	↑	↑	↑	↑
	5-8		–	↑	↑
	9-12			–	–
	13-16				–
Social Acceptance					
	0-4	↑	↑	↑	↑
	5-8		–	–	↑
	9-12			–	–
	13-16				–
Social Contribution					
	0-4	↑	↑	↑	↑
	5-8		↑	↑	↑
	9-12			–	↑
	13-16				–
Social Actualisation					
	0-4	↑	↑	↑	↑
	5-8		–	–	↑
	9-12			–	↑
	13-16				↑

Positive and Negative Affect

In order to determine the impact of decreasing mood on psychological well-being, each participant's EDS score was also classified according to the same hierarchy.

Table 13 shows the number of participants in each category. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 34 portrays the relative profiles of each category for both affect factors.



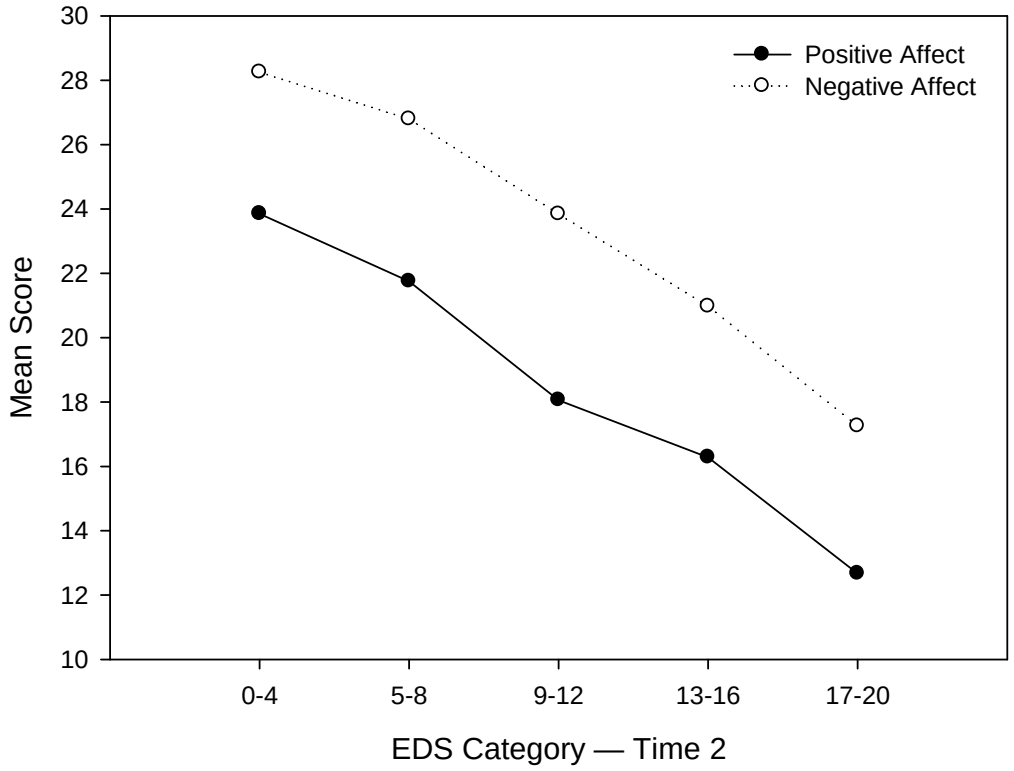
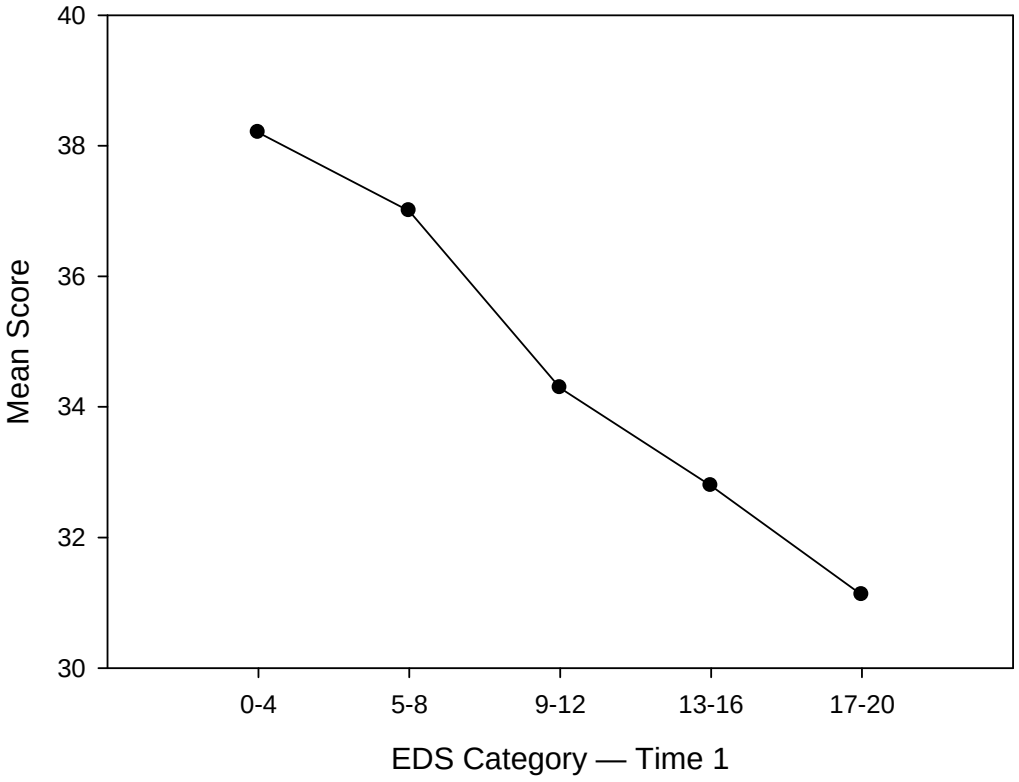


Figure 34. Positive Affect and the absence of Negative Affect by EDS category at Time 1 and Time 2.

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced the affect scales. The assumption of homogeneity of variance was violated for both scales at both Time 1 and Time 2. The results indicated a main effect of EDS category at Time 1 for Positive Affect, $F(4, 144.61) = 107.83$, $p < .05$, and the absence of Negative Affect, $F(4, 136.57) = 129.72$, $p < .05$. Post-hoc testing revealed that with regard to both Positive Affect and the absence of Negative Affect, all categories of EDS scores were found to be significantly greater than those in all higher categories except 13–16, which was not significantly different to 17–20. For Time 2, the results also indicated a main effect of EDS category for Positive Affect, $F(4, 58.99) = 76.69$, $p < .05$, and the absence of Negative Affect, $F(4, 55.52) = 84.67$, $p < .05$. Post-hoc testing again revealed that with regard to both Positive Affect and the absence of Negative Affect, all categories of EDS scores were found to be significantly greater than those in all higher categories except 9–12 for Positive Affect, which was not significantly different to 13–16.

Gratitude

In order to determine the impact of decreasing mood on Gratitude, each participant's EDS score was also classified according to the same hierarchy. Table 13 shows the number of participants in each category. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 35 portrays the relative profiles of each category for Gratitude.



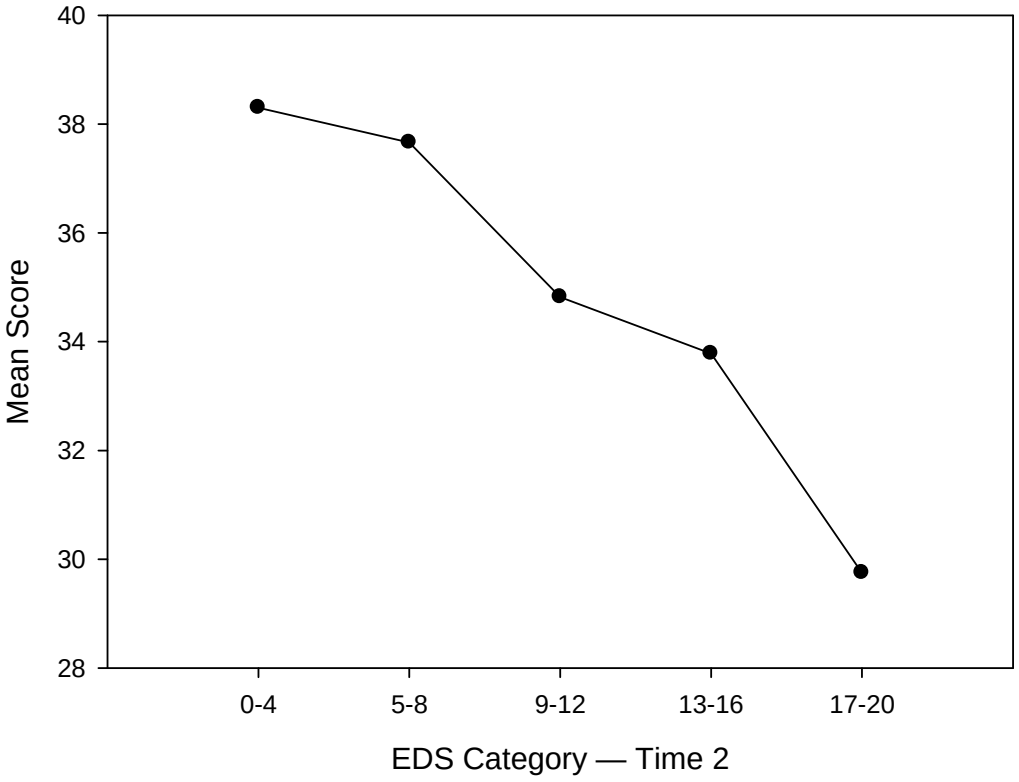


Figure 35. Gratitude by EDS category at Time 1 and Time 2.

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced Gratitude at both Time 1 and Time 2. The assumption of homogeneity of variance was violated in both cases. The results indicated a main effect of EDS category at Time 1 for Gratitude, $F(4, 141.59) = 24.67$, $p < .05$. Following post-hoc testing, all categories were found to be significantly different from all others, with the exception of 9–12 and 13–16, 9–12 and 17–20, and 13–16 and 17–20. The results also indicated a main effect of EDS category at Time 2 for Gratitude, $F(4, 56.84) = 11.49$, $p< .05$. Following post-hoc testing, all categories were found to be significantly different from all higher categories, with the exception of 5–8 and 17–20, 9–12 and 13–16, 9–12 and 17–20, and 13–16 and 17–20.

Factor Analysis

A confirmatory factor analysis using Principal Axis Factoring was conducted in order to test a range of propositions about the structure of positive and negative psychological functioning. In order to determine whether positive and negative psychological functioning are separate systems, a two-factor model was tested initially. With an $\alpha = .001$ cutoff level, 14 of the 573 participants produced scores that identified them as outliers; these cases were deleted from principal factors extraction. Table 18 shows factor loadings for such a model using varimax rotation, while Table 19 shows factor loadings using oblique rotation. If positive and negative psychological functioning were independent systems, the results should have shown one factor that included only EDS score and another that included all of the positive psychological functioning measures. As can be seen, this was not the case for either form of rotation.

Table 18

Factor loadings (>.45) for a two-factor model positive psychological functioning and negative psychological functioning variables at Time 1 – varimax rotation

Variable	Factor 1	Factor 2
EDS	-.81	–
Absence of Negative Affect	.78	–
Environmental Mastery	.74	.48
Self-Acceptance	.73	.57
Positive Affect	.71	–
Autonomy	.46	–
Social Contribution	–	.69
Social Integration	–	.68
Social Actualisation	–	.65
Purpose in Life	.56	.64
Social Acceptance	–	.62
Gratitude	.45	.60
Positive Relations with Others	.55	.56
Personal Growth	–	.54
Social Coherence	–	.50

Table 19

Factor loadings (>.45) for a two-factor model positive psychological functioning and negative psychological functioning variables at Time 1 – oblique rotation

Variable	Factor 1	Factor 2
Social Contribution	.75	–
Social Actualisation	.74	–
Social Integration	.73	–
Social Acceptance	.70	–
Gratitude	.55	–
Purpose in Life	.55	–
Social Coherence	.55	–
Personal Growth	.50	–
Positive Relations with Others	.46	–
EDS	–	.94
Absence of Negative Affect	–	-.83
Positive Affect	–	-.70
Environmental Mastery	–	-.69
Self-Acceptance	–	-.63
Autonomy	–	–

Based on the premise that five constructs were employed in the analyses (EDS, Psychological Well-Being, Social Well-Being, Positive Affect, Absence of Negative Affect, and Gratitude), a further confirmatory factor analysis was conducted in order to determine whether a five-factor model could be applied. While Social Well-Being demonstrates good separation from the other constructs using a varimax rotation, neither a varimax nor an oblique rotation shows the constructs separating into five distinct factors on the basis of what they purport to measure. Table 20 shows factor loadings for such a model using varimax rotation, while Table 21 shows factor loadings using oblique rotation.

Table 20

Factor loadings (>.45) for a five-factor model positive psychological functioning and negative psychological functioning variables at Time 1 – varimax rotation

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
EDS	-.83	–	–	–	–
Absence of Negative Affect	.76	–	–	–	–
Positive Affect	.67	–	–	–	–
Environmental Mastery	.58	–	.50	–	–
Self-Acceptance	.54	–	.52	–	–
Social Actualisation	–	.74	–	–	–
Social Acceptance	–	.58	–	–	–
Social Contribution	–	.48	.46	–	–
Social Coherence	–	.47	–	–	–
Purpose in Life	–	–	.74	–	–
Personal Growth	–	–	.59	–	–
Positive Relations with Others	–	–	–	.65	–
Social Integration	–	.48	–	.64	–
Gratitude	–	–	–	.46	–
Autonomy	–	–	–	–	.76

Table 21

Factor loadings (>.45) for a five-factor model positive psychological functioning and negative psychological functioning variables at Time 1 – oblique rotation

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Purpose in Life	.81	–	–	–	–
Personal Growth	.58	–	–	–	–
Social Contribution	–	–	–	–	–
Self-Acceptance	–	–	–	–	–
EDS	–	.91	–	–	–
Absence of Negative Affect	–	-.80	–	–	–
Positive Affect	–	-.64	–	–	–
Environmental Mastery	–	–	–	–	–
Social Integration	–	–	-.67	–	–
Positive Relations with Others	–	–	-.66	–	–
Gratitude	–	–	–	–	–
Social Actualisation	–	–	–	-.78	–
Social Acceptance	–	–	–	-.55	–
Social Coherence	–	–	–	-.46	–
Autonomy	–	–	–	–	.84

Finally, to test the hypothesis that positive and negative psychological functioning are indeed best represented by a single construct, a confirmatory factor analysis was conducted that extracted one construct. Table 22 shows the factor loadings for the single-construct model. As can be seen, this single-factor model adequately describes the data, with all of the positive and negative psychological functioning factors loading onto a single factor.

Table 22

Factor loadings (>.45) for a single-factor model positive psychological functioning and negative psychological functioning variables at Time 1

Variable	Factor 1
Self-Acceptance	.92
Environmental Mastery	.86
Purpose in Life	.85
Positive Relations with Others	.79
Positive Affect	.77
Absence of Negative Affect	.76
Gratitude	.74
EDS	-.70
Social Contribution	.70
Social Integration	.69
Personal Growth	.66
Social Actualisation	.62
Social Acceptance	.59
Autonomy	.58
Social Coherence	.51

Discussion

Despite indications to the contrary from research outlined earlier, there does not appear to be any evidence to support the notion that positive and negative psychological functioning are separate systems in the context of depression. Rather, the analyses indicate that there is a strong negative correlation between mood and positive psychological functioning with all the measures used. With regard to the confirmatory factor analyses, it appears that the best description of positive and negative psychological functioning is a single-factor model. Neither two-factor nor five-factor models adequately separated the constructs into factors consistent with the hypotheses tested. That is, the two-factor model did not separate EDS from the positive psychological functioning constructs, and nor did the five-factor model separate the various constructs into factors consistent with their theoretical basis.

Chapter 8 – Can Positive Psychological Functioning be Used to Predict Depression?

In order to examine whether it is possible to predict EDS score at Time 2 from information obtained at Time 1, all positive psychological functioning variables, along with participant age, were included in a stepwise linear regression analysis. The analysis indicated that five variables contributed significantly to the predictive model: Time 1 EDS score, Absence of Negative Affect, Purpose in Life, Age, and Social Coherence. The ANOVA indicated that the model fits the data, $F(5, 402) = 51.26$, $p < .05$, and the resulting R^2 was .39. In contrast, a model employing only EDS score at Time 1 as the predictor variable yielded a significant model, $F(1, 407) = 201.26$, $p < .05$, with an R^2 of .33. This would appear to indicate that the addition of positive psychological functioning variables along with age does little to add to the predictive capacity of knowing only Time 1 EDS score.

In order to inform decisions about depression status at Time 2, it is likely to be more appropriate to determine whether a person is likely to be considered Not Depressed, Borderline Depressed, or Depressed. As such, a multinomial logistic regression was employed. The analysis included only positive psychological functioning factors as covariates, to test the hypothesis that depression at Time 2 was related to a combination of positive psychological functioning factors and a person's EDS score at Time 1. The deviance goodness of fit test was non-significant, indicating that the logistic model was a good fit for the data, $\chi^2(784) = 434.58$, $p > .05$. The predicted probabilities are presented in Table 23.

Table 23

Observed and predicted frequencies for depression status at Time 2 by multinomial logistic regression

	Predicted			
Observed	Depressed	Borderline	Not Depressed	% Correct
Depressed	21	1	30	40.4
Borderline	3	0	35	0.0
Not Depressed	11	1	306	96.2
Overall % Correct				90.7

As can be seen, the prediction for participants classified as Not Depressed was more accurate than for those classified as either Depressed or Borderline. The model incorrectly classified 40%of those classified as Depressed, 100% of those classified as Borderline, and 17.52% of those classified as Not Depressed. It is apparent that the Borderline category is not contributing to the model, and because of the relatively small range of EDS scores that contribute to it, it was considered appropriate to exclude it from the predictive analyses.

Consequently, participants at Time 2 were classified as being either Not Depressed or Depressed. In this case, Depressed was defined as reporting an EDS score at Time 2 ≥ 13, which is the cut-off for Depression, thus eliminating the Borderline category. As such, a binary logistic regression was employed. The initial analysis included only positive psychological functioning factors as covariates. This was to test the hypothesis that depression at Time 2 was related to a combination of positive psychological functioning factors and a person's EDS score at Time 1. The covariates were entered backward conditionally. The Hosmer-Lemeshow test was non-significant, indicating that the logistic model was a good fit for the data, $\chi^2(8) = 7.05$, $p > .05$, however, the tests of individual predictors indicated that the alternative model without the intercept being included should be applied to the data, $\chi^2(1) = 0.12$, $p > .05$. For this subsequent analysis, the Hosmer-Lemeshow test was again non-significant, indicating that the logistic model was a good fit for the data, $\chi^2(8) = 9.51$, $p > .05$. The

predicted probabilities are presented in Table 24. The variables in the final equation were: EDS score at Time 1, Positive Relations with Others, Self-Acceptance, Absence of Negative Affect, Social Coherence, and Social Acceptance.

Table 24

Observed and predicted frequencies for depression status at Time 2 by binary logistic regression

	Predicted		
Observed	Depressed	Not Depressed	% Correct
Depressed	21	31	40.4
Not Depressed	7	349	98.0
Overall % Correct			90.7

As can be seen, the prediction for participants classified as Not Depressed was more accurate than for those classified as Depressed. This observation is supported by the magnitude of sensitivity (proportion of correctly classified events), 40.4%, compared to that of specificity (proportion of correctly classified non-events), 98.0%. The false positive rate was found to be 25%, while the false negative rate was found to be 8.16%.

It was considered prudent to compare this analysis with one that included only Time 1 EDS scores, in order to determine whether the addition of positive psychological functioning information substantially improved the predictive capacity of the model. The Hosmer-Lemeshow test was non-significant, indicating that the logistic model was a good fit for the data, $\chi^2(8) = 6.21$, $p > .05$. The tests of individual predictors indicated that the intercept should be included. The predicted probabilities are presented in Table 25.

Table 25

Observed and predicted frequencies for depression status at Time 2 by binary logistic regression using only Time 1 EDS as the predictor variable

	Predicted		
Observed	Depressed	Not Depressed	% Correct
Depressed	12	40	23.9
Not Depressed	8	349	97.8
Overall % Correct			88.3

Again, the prediction for participants classified as Not Depressed was more accurate than for those classified as Depressed. This observation is supported by the magnitude of sensitivity (proportion of correctly classified events), 23.9%, compared to that of specificity (proportion of correctly classified non-events), 97.8%. The false positive rate was found to be 40%, while the false negative rate was found to be 10.28%. It is considered that the false negative rate is the more important aspect of these predictive models, since it is more important to accurately predict depression rather than a lack of depression. As such, it can be seen that the addition of positive psychological functioning variables adds little to the model's capacity to predict depression classification at Time 2 (10.28% versus 8.16%).

Jacobson and Truax (1991) have developed a method for assessing clinical significance, as opposed to statistical significance. The formula for this method, known as the Reliable Change Index (RCI), is: $\frac{x_2 - x_1}{\sqrt{2(s_1\sqrt{1-r_{xx}})^2}}$, where x_2 and x_1 are the respective means of the Time 1 and Time 2 data, s_1 is the standard deviation, and r_{xx} is a measure of reliability. In this case, Cronbach's alpha was found to be 0.89. Jacobson and Truax note that in order for a clinically significant change to be considered to have occurred, the RCI should exceed 1.96. Thus, in this sample, a difference of 5 points or more on the EDS would be required for a clinically significant change.

A paired-samples *t*-test was conducted in order to examine whether there were any changes in EDS scores from Time 1 to Time 2. Four hundred and nine participants provided EDS scores at both times. EDS scores at Time 1 (M = 7.21, SD = 5.33) were

found to be significantly higher than those at Time 2 (M = 5.88, SD = 5.25), $t(408) = 5.49$, $p < .05$. The same analysis was conducted for both the student and maternity samples. For the student sample, EDS scores at Time 1 (M = 9.15, SD = 5.52) were found to be significantly higher than those at Time 2 (M = 7.22, SD = 5.70), $t(206) = 5.11$, $p < .05$. Similarly, maternity sample EDS scores at Time 1 (M = 5.21, SD = 4.30) were found to be significantly higher than those at Time 2 (M = 4.51, SD = 4.36), $t(201) = 2.40$, $p < .05$. With regard to whether participants classified as Never Depressed, Formerly Depressed, or Currently Depressed at Time 1, paired-samples t-tests showed that Never Depressed participants' EDS scores at Time 1 (M = 3.99, SD = 3.08) were significantly higher than those at Time 2 (M = 3.36, SD = 3.16), $t(148) = 2.52$, $p < .05$; Formerly Depressed participants' EDS scores at Time 1 (M = 6.44, SD = 3.44) were significantly higher than those at Time 2 (M = 5.94, SD = 4.95), $t(190) = 1.40$, $p < .05$; and Currently Depressed participants' EDS scores at Time 1 (M = 16.26, SD = 2.97) were significantly higher than those at Time 2 (M = 11.17, SD = 5.75), $t(69) = 7.06$, $p < .01$. Because the assumption of a significant correlation for Currently Depressed participants was violated, a more stringent alpha level was applied.

Similar analyses were conducted in order to determine whether positive psychological functioning scores had changed from Time 1 to Time 2. Table 26 shows the results of the paired-samples t-tests for all factors. All assumptions were met. These results indicate that all Psychological Well-Being factors improved significantly from Time 1 to Time 2, with the exception of Personal Growth. Conversely, only Social Integration significantly improved from Time 1 to Time 2 in terms of the Social Well-Being factors. Positive Affect, the Absence of Negative Affect, and Gratitude all significantly improved from Time 1 to Time 2. As such, with the exception of Social Well-Being, these findings also support the finding that positive and negative psychological functioning are not separate systems in the terms set out in the current study.

Table 26

Comparison of Positive Psychological Functioning Factors at Time 1 and Time 2

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	62.78	11.31	63.61	11.28	-2.30	.02
Environmental Mastery	63.89	12.70	65.49	12.40	-3.79	.00
Personal Growth	70.87	8.74	71.38	8.83	-1.63	.10
Positive Relations with Others	67.57	12.61	68.59	12.21	-2.97	.00
Purpose in Life	67.27	12.18	68.26	11.88	-2.70	.01
Self-Acceptance	63.83	14.56	65.11	14.34	-3.23	.00
Social Coherence	14.23	3.69	14.05	3.52	1.12	.26
Social Integration	14.31	4.60	14.88	4.53	-3.57	.00
Social Acceptance	14.04	3.51	14.14	3.50	-.65	.52
Social Contribution	16.15	3.82	16.36	3.84	-1.36	.18
Social Actualisation	13.82	3.79	14.97	3.95	-1.61	.11
Positive Affect	20.80	4.42	21.48	4.55	-3.69	.00
Absence of Negative Affect	25.21	3.90	26.21	3.86	-6.55	.00
Gratitude	35.95	5.37	36.95	5.11	-5.45	.00

Again, the same analyses were conducted separately for the student and maternity samples. The results of the analyses for the student sample are presented in Table 27, while the results for the maternity sample are presented in Table 28. In the case of Psychological Well-Being, the student sample shows significant improvements in Autonomy and Environmental Mastery, while the maternity sample does not; the maternity sample show significant improvements in Personal Growth, Positive Relations with Others, and Purpose in Life, while the student sample does not; and both show a significant improvement in Self-Acceptance. Both samples also show significant improvements in Social Integration, Absence of Negative Affect, and Gratitude, while only the student sample shows a significant improvement in Positive Affect.

Table 27

Comparison of Positive Psychological Functioning Factors for the Student Sample at Time 1 and Time 2

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	60.75	11.43	61.70	10.90	-1.83	.07
Environmental Mastery	59.70	12.87	62.43	12.86	-4.54	.00
Personal Growth	71.09	8.40	71.06	8.74	.07	.95
Positive Relations with Others	65.17	13.26	65.84	12.47	-1.28	.20
Purpose in Life	65.64	12.94	66.12	12.15	-.84	.40
Self-Acceptance	60.03	15.60	61.43	14.91	-2.27	.02
Social Coherence	13.87	3.79	13.70	3.52	.71	.48
Social Integration	13.83	4.78	14.32	4.60	-2.04	.04
Social Acceptance	13.68	3.62	13.59	3.37	.46	.64
Social Contribution	15.78	4.11	16.01	4.01	-.95	.34
Social Actualisation	13.24	4.11	13.58	4.18	-1.50	.14
Positive Affect	19.66	4.45	20.68	4.57	-3.74	.00
Absence of Negative Affect	24.06	4.15	25.19	4.58	-4.80	.00
Gratitude	35.17	5.66	36.23	5.26	-3.88	.00

Table 28

Comparison of Positive Psychological Functioning Factors for the Maternity Sample at Time 1 and Time 2

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	64.86	10.82	65.56	11.36	-1.40	.16
Environmental Mastery	68.19	10.99	68.63	11.09	-.76	.45
Personal Growth	70.65	9.09	71.71	8.94	-2.34	.02
Positive Relations with Others	70.02	11.43	71.42	11.28	-3.07	.00
Purpose in Life	68.94	11.13	70.46	11.22	-3.27	.00
Self-Acceptance	67.72	12.28	68.89	12.70	-2.33	.02
Social Coherence	14.60	3.56	14.40	3.50	.87	.38
Social Integration	14.80	4.37	15.46	4.40	-3.10	.00
Social Acceptance	14.40	3.36	14.69	3.56	-1.29	.20
Social Contribution	16.53	3.46	16.71	3.65	-1.00	.32
Social Actualisation	14.41	3.35	14.57	3.64	-.74	.46
Positive Affect	21.97	4.08	22.31	4.38	-1.34	.17
Absence of Negative Affect	26.38	3.23	27.26	3.05	-4.48	.00
Gratitude	36.74	4.95	37.68	4.84	-3.83	.00

The same analyses were performed with regard to participants classified as Never Depressed, Formerly Depressed, or Currently Depressed at Time 1. All assumptions were met. The results of the analyses for the Never Depressed, Formerly Depressed, and Currently Depressed samples are presented in Tables 30, 31, and 32 respectively. The analyses are summarised in Table 29 in terms of whether a significant difference was noted. It would appear that Formerly Depressed participants were more stable in terms of their positive psychological functioning, with significant improvements noted on only three of the 14 factors, in spite of significant improvements in EDS scores. Of the factors themselves, Social Coherence, Social Acceptance, and Social Contribution did not display any significant changes in any of the depression categories.

Table 29

Significant differences in positive psychological functioning scores from Time 1 to Time 2

Factor	Never Depressed	Formerly Depressed	Currently Depressed
Autonomy	↑	–	–
Environmental Mastery	–	↑	↑
Personal Growth	↑	–	–
Positive Relations with Others	↑	–	↑
Purpose in Life	↑	–	–
Self-Acceptance	–	–	↑
Social Coherence	–	–	–
Social Integration	↑	–	↑
Social Acceptance	–	–	–
Social Contribution	–	–	–
Social Actualisation	–	–	↑
Positive Affect	↑	–	↑
Absence of Negative Affect	↑	↑	↑
Gratitude	↑	↑	–

Table 30

Comparison at Time 1 and Time 2 of Positive Psychological Functioning Factors for participants classified as Never Depressed at Time 1

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	65.75	10.51	66.89	10.44	-2.14	.03
Environmental Mastery	70.98	8.22	71.77	8.52	-1.53	.13
Personal Growth	72.01	8.40	73.33	7.50	-2.83	.00
Positive Relations with Others	72.83	9.51	74.28	9.06	-2.95	.00
Purpose in Life	71.70	9.08	73.15	8.87	-3.05	.00
Self-Acceptance	71.42	9.55	71.79	10.13	-.76	.45
Social Coherence	14.83	3.22	14.44	3.36	1.55	.12
Social Integration	15.70	3.88	16.23	3.66	-2.11	.04
Social Acceptance	14.83	3.24	15.05	3.06	-.90	.37
Social Contribution	17.01	3.18	17.24	3.20	-1.02	.31
Social Actualisation	14.59	3.16	14.82	3.29	-.96	.34
Positive Affect	22.99	3.32	23.57	3.46	-2.51	.01
Absence of Negative Affect	27.35	1.84	28.03	1.92	-4.27	.00
Gratitude	37.60	4.15	38.45	4.01	-3.34	.00

Note: *n*=149

Table 31

Comparison at Time 1 and Time 2 of Positive Psychological Functioning Factors for participants classified as Formerly Depressed at Time 1

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	63.38	10.64	63.87	10.19	-.97	.33
Environmental Mastery	63.76	10.89	65.05	11.34	-1.88	.06
Personal Growth	72.13	7.65	72.21	8.21	-.18	.87
Positive Relations with Others	68.34	10.64	68.50	10.95	-.31	.76
Purpose in Life	68.09	10.71	68.47	10.59	-.68	.50
Self-Acceptance	64.32	12.08	65.49	12.36	-1.90	.06
Social Coherence	14.48	3.75	14.17	3.51	1.24	.22
Social Integration	14.45	4.34	14.77	4.42	-1.31	.19
Social Acceptance	14.18	3.34	13.93	3.51	1.22	.22
Social Contribution	16.41	3.56	16.51	3.67	-.52	.60
Social Actualisation	14.13	3.78	14.22	4.01	-.37	.71
Positive Affect	21.10	3.46	21.39	4.11	-.97	.33
Absence of Negative Affect	25.40	3.10	26.23	3.30	-3.49	.00
Gratitude	36.11	4.79	37.18	4.28	-4.04	.00

Note: *n*=191

Table 32

Comparison at Time 1 and Time 2 of Positive Psychological Functioning Factors for participants classified as Currently Depressed at Time 1

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	54.71	11.14	55.77	12.26	-.96	.34
Environmental Mastery	48.94	12.31	53.16	12.81	-3.66	.00
Personal Growth	64.96	9.90	64.88	10.22	.08	.93
Positive Relations with Others	54.06	13.89	56.58	12.78	-2.58	.01
Purpose in Life	55.43	14.25	57.12	13.58	-1.48	.14
Self-Acceptance	46.07	14.81	49.65	15.60	-2.95	.00
Social Coherence	12.24	3.89	12.85	3.70	-1.46	.15
Social Integration	10.85	5.03	12.24	5.33	-3.57	.00
Social Acceptance	11.90	3.74	12.72	3.89	-1.98	.051
Social Contribution	13.54	4.64	13.99	4.64	-.83	.41
Social Actualisation	11.25	4.04	12.01	4.42	-1.95	.06
Positive Affect	15.25	4.22	17.25	4.81	-3.94	.00
Absence of Negative Affect	20.03	4.43	22.26	5.27	-4.32	.00
Gratitude	31.91	7.00	33.07	7.06	-1.93	.06

Note: *n*=69

Paired-samples *t*-tests examined whether there were any significant changes in positive psychological functioning factors, dependent on whether participants displayed an increase, a decrease, or no change in EDS scores from Time 1 to Time 2. Two hundred and forty-one participants displayed a decrease in EDS score, 124 displayed an increase, while 44 reported no difference in EDS scores. All assumptions underlying the test were met. Tables 34, 35, and 36 show the results for participants who experienced a decrease, an increase, and no change in EDS score, respectively. The analyses are summarised in Table 33 in terms of whether a significant difference was noted. There appears to be a relationship between change in EDS score and psychological well-being, in that improvements in mood are associated with improvements in psychological well-being and vice versa. No change in EDS score is

still associated with some improvements in psychological well-being, but fewer changes than either improvements or deteriorations in mood.

Table 33

Significant differences in positive psychological functioning scores from Time 1 to Time 2

Factor	Decrease	Increase	No Change
Autonomy	↑	↓	–
Environmental Mastery	↑	↓	↑
Personal Growth	↑	–	–
Positive Relations with Others	↑	↓	↑
Purpose in Life	↑	↓	–
Self-Acceptance	↑	↓	↑
Social Coherence	–	↓	–
Social Integration	↑	–	–
Social Acceptance	–	–	–
Social Contribution	↑	↓	–
Social Actualisation	↑	–	–
Positive Affect	↑	↓	–
Absence of Negative Affect	↑	↓	↑
Gratitude	↑	–	↑

Table 34

Comparison at Time 1 and Time 2 of Positive Psychological Functioning Factors participants who reported a decrease in EDS score from Time 1 to Time 2

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	62.30	10.96	64.25	10.51	-4.19	.00
Environmental Mastery	62.60	12.59	66.53	11.08	-7.99	.00
Personal Growth	70.50	8.59	71.56	8.01	-2.63	.01
Positive Relations with Others	66.81	13.14	69.07	12.21	-5.26	.00
Purpose in Life	66.63	12.43	68.95	11.29	-4.88	.00
Self-Acceptance	62.82	15.05	66.12	13.41	-6.33	.00
Social Coherence	13.90	3.66	14.23	3.20	-1.58	.12
Social Integration	14.12	4.72	15.13	4.56	-5.06	.00
Social Acceptance	13.89	3.52	14.06	3.46	-.87	.39
Social Contribution	16.03	3.90	16.65	3.65	-3.33	.00
Social Actualisation	13.39	3.73	14.18	3.78	-3.86	.00
Positive Affect	20.29	4.57	22.22	4.02	-8.77	.00
Absence of Negative Affect	24.74	4.07	26.81	3.13	-11.39	.00
Gratitude	35.72	5.67	37.09	4.68	-5.70	.00

Table 35

Comparison at Time 1 and Time 2 of Positive Psychological Functioning Factors participants who reported an increase in EDS score from Time 1 to Time 2

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	63.33	11.82	62.05	12.54	2.00	.048
Environmental Mastery	65.02	12.63	61.83	13.84	4.09	.00
Personal Growth	71.30	8.96	70.31	9.88	1.86	.06
Positive Relations with Others	67.94	11.95	66.10	12.54	2.96	.00
Purpose in Life	67.44	11.32	65.60	12.39	2.87	.00
Self-Acceptance	64.31	13.95	61.51	15.97	4.30	.00
Social Coherence	14.65	3.77	13.45	3.86	4.04	.00
Social Integration	13.98	4.38	14.12	4.60	-.45	.65
Social Acceptance	13.93	3.53	14.01	4.64	-.28	.78
Social Contribution	16.09	3.65	15.45	4.14	2.10	.04
Social Actualisation	14.19	3.98	13.69	4.17	1.76	.08
Positive Affect	21.10	4.06	19.44	4.90	5.02	.00
Absence of Negative Affect	25.58	3.70	24.63	4.82	3.50	.00
Gratitude	35.86	5.01	36.15	5.99	-.83	.41

Table 36

Comparison at Time 1 and Time 2 of Positive Psychological Functioning Factors participants who reported no change in EDS score from Time 1 to Time 2

	Time 1		Time 2			
Factor	Mean	SD	Mean	SD	*t* value	Sig.
Autonomy	63.86	11.79	64.45	11.46	-.61	.54
Environmental Mastery	67.77	12.65	70.11	12.61	-2.09	.04
Personal Growth	71.70	9.01	73.41	9.76	-1.61	.11
Positive Relations with Others	70.66	11.05	73.00	9.65	-2.24	.03
Purpose in Life	70.27	12.90	71.98	12.37	-1.80	.08
Self-Acceptance	68.02	12.92	69.75	12.39	-2.23	.03
Social Coherence	14.86	3.52	14.73	4.01	.30	.77
Social Integration	16.25	4.16	15.68	3.89	1.36	.18
Social Acceptance	15.16	3.33	14.93	3.32	.48	.63
Social Contribution	17.02	3.77	17.32	3.63	-.93	.36
Social Actualisation	15.11	3.22	14.59	4.18	1.26	.21
Positive Affect	22.73	4.02	23.20	4.42	-1.38	.17
Absence of Negative Affect	26.68	2.96	27.39	3.08	-2.44	.02
Gratitude	37.43	4.47	38.43	4.29	-2.08	.04

A one-way ANOVA was conducted in order to examine whether there were any differences between participants' psychological well-being at Time 1 with regard to whether they later reported an increase, decrease, or no change in their EDS score at Time 2. All assumptions underlying the ANOVA were met. The ANOVA revealed significant differences for Environmental Mastery, $F(2, 406) = 3.84$, $p < .05$, Positive Affect, $F(2, 406) = 6.23$, $p < .05$, Absence of Negative Affect, $F(2, 406) = 5.55$, $p < .05$, Social Integration, $F(2, 405) = 4.52$, $p < .05$, and Social Actualisation, $F(2, 405) = 4.75$, $p < .05$. Post-hoc tests revealed that for Environmental Mastery, participants who reported a decrease in EDS score ($M = 62.30$, $SD = 12.59$) were significantly lower than those who reported no change ($M = 67.77$, $SD = 12.65$); for Positive Affect, participants who reported a decrease in EDS score ($M = 20.29$, $SD = 4.57$) were significantly lower than those who reported no change ($M = 22.73$, $SD = 4.02$); for Absence of Negative

Affect, participants who reported a decrease in EDS score (*M* = 24.74, *SD* = 4.07) were significantly lower than those who reported no change (*M* = 26.68, *SD* = 2.96); for Social Integration, participants who reported an increase in EDS score (*M* = 13.98, *SD* = 4.38) were significantly lower than those who reported no change (*M* = 16.25, *SD* = 4.16), while for Social Actualisation, participants who reported a decrease in EDS score (*M* = 13.39, *SD* = 3.73) were significantly lower than those who reported no change (*M* = 15.11, *SD* = 3.22).

With regard to EDS categories, Table 37 shows the frequencies for each possible change in status from Time 1 to Time 2. In relative terms, 287 participants did not change category, 42 can be considered to have deteriorated, and 80 can be considered to have improved.

Table 37

Frequencies for change in EDS status from Time 1 to Time 2

Status	Frequency	Percentage
Stayed Not Depressed	249	60.9
Stayed Borderline	8	2.0
Stayed Depressed	30	7.3
Not Depressed to Borderline	19	4.6
Not Depressed to Depressed	13	3.2
Borderline to Depressed	10	2.4
Depressed to Borderline	10	2.4
Depressed to Not Depressed	31	7.6
Borderline to Not Depressed	39	9.5

A one-way ANOVA was conducted to determine whether those participants who changed from being Not Depressed to Depressed were different from those in any other category in terms of their psychological well-being at Time 1. The assumption of homogeneity of variance was violated for all factors except Social Coherence, Social Acceptance, and Social Actualisation. A main effect of category change was noted in all cases: Autonomy, $F(8, 47.87) = 10.43$, $p < .05$, Environmental Mastery, $F(8, 47.59) = 28.55$, $p < .05$, Personal Growth, $F(8, 47.14) = 5.01$, $p < .05$, Positive Relations with

Others, $F(8, 47.25) = 15.85$, $p < .05$, Purpose in Life, $F(8, 46.64) = 13.51$, $p < .05$, Self-Acceptance, $F(8, 46.83) = 27.40$, $p < .05$, Social Coherence, $F(8, 399) = 5.32$, $p < .05$, Social Integration, $F(8, 45.99) = 9.61$, $p < .05$, Social Acceptance, $F(8, 399) = 8.11$, $p < .05$, Social Contribution, $F(8, 45.87) = 6.67$, $p < .05$, and Social Actualisation, $F(8, 399) = 8.72$, $p < .05$. Post-hoc tests revealed that participants who changed from Not Depressed to Depressed differed from those who: Stayed Depressed on Environmental Mastery, Stayed Depressed on Personal Growth, changed from Depressed to Borderline on Positive Relations with Others, Stayed Depressed on Purpose in Life, Stayed Depressed on Self-Acceptance, Stayed Depressed and changed from Depressed to Borderline on Positive Affect, Stayed Depressed on Absence of Negative Affect, and Stayed Depressed on Social Coherence. Post-hocs revealed that participants who changed from being Not Depressed to Depressed reported significantly higher scores than those who Stayed Depressed for Environmental Mastery, Personal Growth, Purpose in Life, Self-Acceptance, Social Coherence, Positive Affect, and the Absence of Negative Affect, and from those who changed from Depressed to Borderline for Positive Relations with Others and Positive Affect. Table 38 displays the means and standard deviations for each of these comparisons. Importantly, those participants who changed from being Not Depressed to Depressed did not significantly differ from those who Stayed Not Depressed on any of the factors.

Table 38
Means and standard deviations for significant differences between change in EDS status

	Not Depressed to Depressed		Stayed Depressed		Depressed to Borderline	
Factor	*M*	*SD*	*M*	*SD*	*M*	*SD*
Environmental Mastery	62.31	11.95	46.10	10.97		
Personal Growth	72.00	6.86	63.30	9.59		
Positive Relations with Others	63.85	8.77			46.70	11.59
Purpose in Life	65.62	9.80	51.67	13.08		
Self-Acceptance	62.00	10.62	41.77	13.49		
Social Coherence	16.38	3.15	11.83	3.37		
Positive Affect	20.38	2.50	14.80	3.10	13.40	4.74
Absence of Negative Affect	24.85	3.00	18.57	2.85		

In order to examine the relationship between EDS score and Positive Psychological Functioning at Time 1 with EDS score at Time 2, bivariate correlation coefficients were calculated. These are presented in Table 39. As can be seen, all variables display only weak or moderate correlation with EDS score at Time 2.

Table 39

Pearson correlation coefficients for all variables at Time 1 and EDS score at Time 2

Factor	Pearson Correlation Coefficient
EDS Score	0.58
Social Coherence	-0.20
Age	-0.22
Personal Growth	-0.29
Social Actualisation	-0.31
Social Contribution	-0.32
Gratitude	-0.33
Social Acceptance	-0.33
Autonomy	-0.33
Social Integration	-0.35
Positive Relations with Others	-0.41
Purpose in Life	-0.46
Positive Affect	-0.46
Environmental Mastery	-0.50
Self-Acceptance	-0.52
Negative Affect	-0.55

Note: All correlations are significant at the .01 level

Finally, the individual question responses for the positive psychological functioning factors were used in a multinomial logistic regression analysis in order to determine their capacity to predict Time 2 depression category from Time 1 data. Each scale was separately analysed, and the significant predictors identified. Lastly, the significant predictors from each scale were entered into the analysis.

Of the 409 participants who provided both Time 1 and Time 2 data, Table 40 shows the frequencies of people in terms of each possible change in EDS category. As can be seen, only 29.8% of participants experienced a change in EDS category, leaving too few participants in these categories to provide enough power for statistical analyses.

Table 40

Frequency of participants in terms of changes in EDS category from Time 1 to Time 2

Change Category	Frequency	Percentage
Stayed Not Depressed	249	60.9
Stayed Borderline	8	2.0
Stayed Depressed	30	7.3
Not Depressed to Borderline	19	4.6
Not Depressed to Depressed	13	3.2
Borderline to Depressed	10	2.4
Depressed to Borderline	10	2.4
Depressed to Not Depressed	31	7.6
Borderline to Not Depressed	39	9.5

Keyes (2002, 2005) has proposed that positive psychological functioning can be conceptualised in terms of whether a person is languishing or flourishing in life. As suggested by Keyes, tertiles were calculated from the standard scores of each item for all positive psychological functioning factors at Time 1. The lower tertile was labelled 'Languishing', the middle tertile 'Normal', and the upper tertile 'Flourishing'. Table 41 and Table 42 show the frequency of each classification according to EDS Category at Time 1 and Time 2 respectively. Table 43 shows the frequency of each classification according to the change in EDS category from Time 1 to Time 2. In terms of stability of EDS classification, 87.4% of participants classified as Flourishing did not change EDS category from Time 1 to Time 2, compared to 74.1% of those classified as Normal, and 47.3% of those classified as Languishing.

Table 41

Frequency of participants classified as Languishing, Normal, or Flourishing at Time 1 according to EDS Category at Time 1

	Languishing		Normal		Flourishing	
EDS Category	Frequency	%	Frequency	%	Frequency	%
Not Depressed	56	29.3	151	78.6	180	94.2
Borderline	51	26.7	27	14.1	9	4.7
Depressed	84	44.0	14	7.3	2	1.0

Table 42

Frequency of participants classified as Languishing, Normal, or Flourishing at Time 1 according to EDS Category at Time 2

	Languishing		Normal		Flourishing	
EDS Category	Frequency	%	Frequency	%	Frequency	%
Not Depressed	73	55.7	109	80.7	136	95.1
Borderline	19	14.5	15	11.1	5	3.5
Depressed	39	29.8	11	8.1	2	1.4

Table 43

Frequency of participants classified as Languishing, Normal, or Flourishing at Time 1 according to EDS Category change from Time 1 to Time 2

	Languishing		Normal		Flourishing	
EDS Category	Frequency	%	Frequency	%	Frequency	%
Stayed Not Depressed	29	22.1	95	70.4	125	87.4
Stayed Borderline	6	4.6	2	1.5		
Stayed Depressed	27	20.6	3	2.2		
Not Depressed to Borderline	5	3.8	9	6.7	5	3.5
Not Depressed to Depressed	6	4.6	5	3.7	2	1.4
Borderline to Depressed	7	5.3	3	2.2		
Depressed to Borderline	8	6.1	2	1.5		
Depressed to Not Depressed	22	16.8	5	3.7	4	2.8
Borderline to Not Depressed	21	16.0	11	8.1	7	4.9

In order to examine the relative stability of positive psychological functioning from Time 1 to Time 2 with respect to psychological health, paired-samples *t*-tests were conducted, using psychological health category as a factor and comparing all positive psychological functioning scales, along with EDS score. All assumptions underlying the *t*-tests were met. Participants classified as Languishing displayed significant increases in positive psychological functioning for: Autonomy, $t(130) = -3.11$; Environmental Mastery, $t(130) = -4.21$; Positive Relations with Others, $t(130) = -3.39$; Purpose in Life, $t(130) = -3.32$; Self-Acceptance, $t(130) = -3.76$; Gratitude, $t(130) = -4.12$; Positive Affect, $t(130) = -3.34$; Negative Affect, $t(130) = -5.57$; Social Integration, $t(130) = -3.73$; Social Acceptance, $t(130) = -2.74$; and Social Actualisation,

$t(130) = -3.38$. Participants also displayed a significant improvement in EDS score, $t(130) = 5.10$. All results were significant at the .05 level. Participants classified as Normal displayed significant increases in positive psychological functioning for: Gratitude, $t(134) = -3.01$; Positive Affect, $t(134) = -2.87$; and, Negative Affect, $t(134) = -3.61$. All results were significant at the .05 level. Participants classified as Flourishing displayed significant increases in positive psychological functioning for Gratitude, $t(142) = -2.08$, $p < .05$. These participants also displayed a significant improvement in EDS score, $t(142) = 2.12$, $p < .05$. This indicates that both Normal and Flourishing are more stable states than Languishing, with the tendency of those participants classified as Languishing to be one of improvement.

Chapter 9 – Are there Differential Influences of Positive Psychological Functioning Factors with Respect to Depression?

The results presented above strongly suggest that positive and negative psychological functioning are not separate systems, at least in comparison to depression. Nevertheless, there are indications in the results presented so far that the impact of increasing depression is not homogeneous across the positive psychological functioning factors. For example, a visual examination of the profiles displayed in Figure 32 and Figure 33 suggest that the relativities in each EDS category change as mood decreases. Apart from the apparent general decrease in psychological and social well-being as mood decreases (indicated by vertical separation of the categories), it appears that some factors are affected to a greater degree than others. The pattern of responses suggests that this is most noticeable with Environmental Mastery, Self-Acceptance, and Positive Relations with Others (for psychological well-being) and Social Integration (for social well-being).Further, it would appear that Personal Growth is only marginally influenced by decreasing mood. In order to determine whether some positive psychological functioning factors were affected by decreasing mood more than others, all factors were rank-ordered based on the range between the lowest and highest category means. In addition, relative percentage declines for each factor were calculated and compared.

Psychological Well-Being

Post-hoc tests from the one-way ANOVA on page 101were examined in order to ascertain whether statistical support could be found for any factors being affected more than the others. For Personal Growth, no category was significantly lower than the one before it, indicating minimal change as mood progressively decreases. With regard to Autonomy and Purpose in Life, significant decreases were found between 0–4 and 5–8, and 5–8 and 9–12. With regard to Positive Relations with Others, Environmental Mastery, and Self-Acceptance, significant decreases were found between 0–4 and 5–8, 5–8 and 9–12, and 9–12 and 13–16. As such, it would appear that Personal Growth was least affected, while Positive Relations with Others, Environmental Mastery, and Self-Acceptance were most affected by decreasing mood.

Table 44

Range of mean psychological well-being scores for each factor according to EDS hierarchy category

Factor	Range
Personal Growth	8.85
Autonomy	13.48
Purpose in Life	18.50
Positive Relations with Others	22.64
Environmental Mastery	25.58
Self-Acceptance	26.90

Even though each factor forms part of a construct known as psychological well-being, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. As such, any change observed may merely reflect the properties of the variables. Nevertheless, it would appear that some of the factors are affected more by declining mood than others.

Figure 36 depicts the relative decline in each factor with reference to the 0–4 category. In this figure, each category is presented as a percentage of the 0–4 category. For example, the mean score for Self-Acceptance in the 17–20 category is 62.79% of that for the 0–4 category. From this figure, it would appear that Environmental Mastery and Self-Acceptance are affected more than the other factors by declining mood. Lines of best fit were calculated for each factor, with the results presented in Table 45. Each equation demonstrates good fit with the data, with only one factor showing an r^2 value of less than 0.95. As can be seen, the slopes for Environmental Mastery and Self-Acceptance decline at more than twice the rate of Personal Growth, suggesting that these factors are affected substantially more by declining mood. Indeed, it seems clear that the general effect is one of declining psychological well-being as mood declines, with some factors affected more than others.

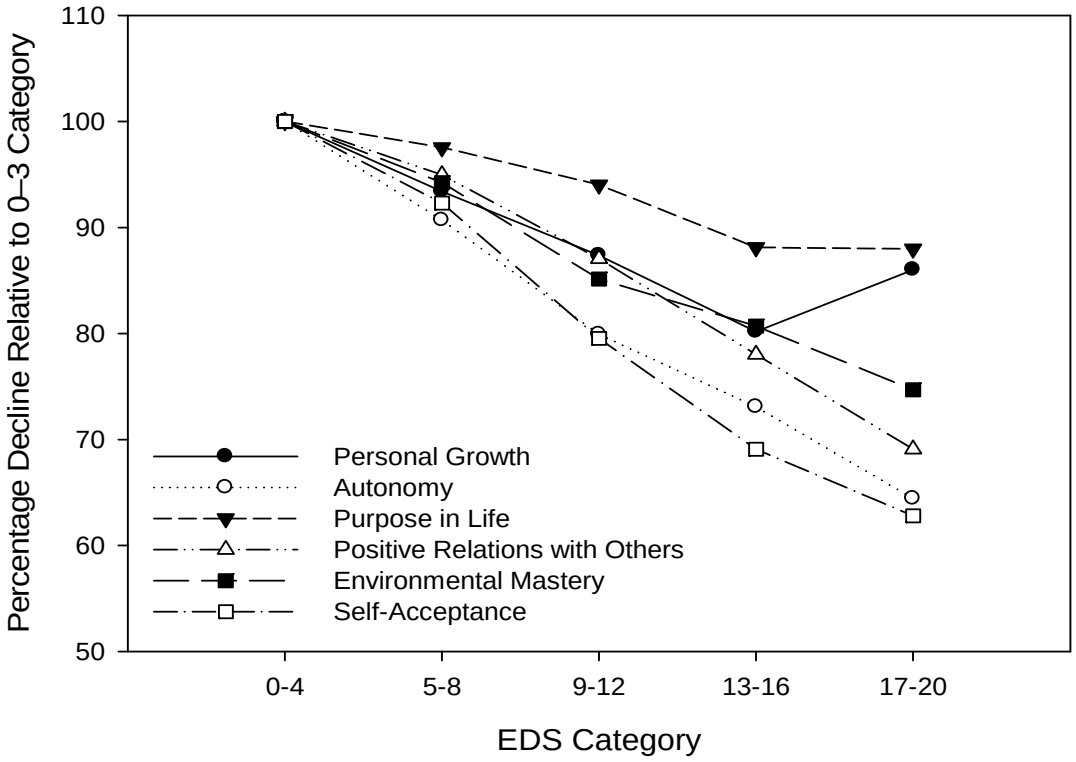


Figure 36. Relative decline in psychological well-being factors as mood declines. Data points are presented as a percentage of the 0–4 category.

Table 45

Coefficients of the lines of best fit for each psychological well-being factor

Factor	Intercept	Slope	r^2
Personal Growth	100.23	-3.35	0.95
Autonomy	97.62	-4.12	0.74
Purpose in Life	99.78	-6.42	0.99
Positive Relations with Others	101.58	-7.88	0.99
Environmental Mastery	99.37	-8.88	1.00
Self-Acceptance	100.27	-9.76	0.99

Social Well-Being

In order to determine whether any Social Well-Being factors were affected by decreasing mood more than others, all factors were rank-ordered based on the range

between lowest and highest category means. This revealed that the greatest difference between the 0–4 category and the 17–20 category was for Social Integration (see Table 46 for a comparison of the ranges of all factors). Post-hoc tests from the one-way ANOVA on page 108 were examined in order to ascertain whether statistical support could be found for Social Integration being affected more than the other factors. For Social Coherence, no category was significantly lower than the one before it, indicating minimal change as mood progressively decreases. With regard to Social Acceptance, Social Integration, and Social Actualisation, significant decreases were found between 5–8 and 9–12. With regard to Social Contribution, significant decreases were found between 0–4 and 5–8, and 5–8 and 9–12. As such, it would appear that Social Coherence was least affected, while Social Contribution was most affected by decreasing mood.

Table 46

Range of mean social well-being scores for each factor according to EDS hierarchy category

Factor	Range
Social Acceptance	3.41
Social Coherence	3.10
Social Contribution	4.22
Social Actualisation	4.23
Social Integration	6.31

As with psychological well-being, it is not possible to directly compare rates of change across the social well-being factors as mood declines because they are essentially different constructs. As such, any change observed may merely reflect the properties of the variables. Nevertheless, it would appear that some of the factors are affected more by declining mood than others. Figure 37 depicts the relative decline in each factor with reference to the 0–4 category. In this figure, each category is presented as a percentage of the 0–4 category. For example, the mean score for Social Integration in the 17–20 category is 60.66% of that for the 0–4 category. From this figure, it would appear that Social Integration is affected more than the other factors

by declining mood. Lines of best fit were calculated for each factor, with the results presented in Table 47. Each equation demonstrates good fit with the data. As can be seen, the slope for Social Integration declines at a greater rate than the other factors (all of which are very similar in terms of rate of decline), suggesting that Social Integration is affected substantially more by declining mood. Indeed, it seems clear that the general effect is one of declining social well-being as mood declines, with some factors affected more than others.

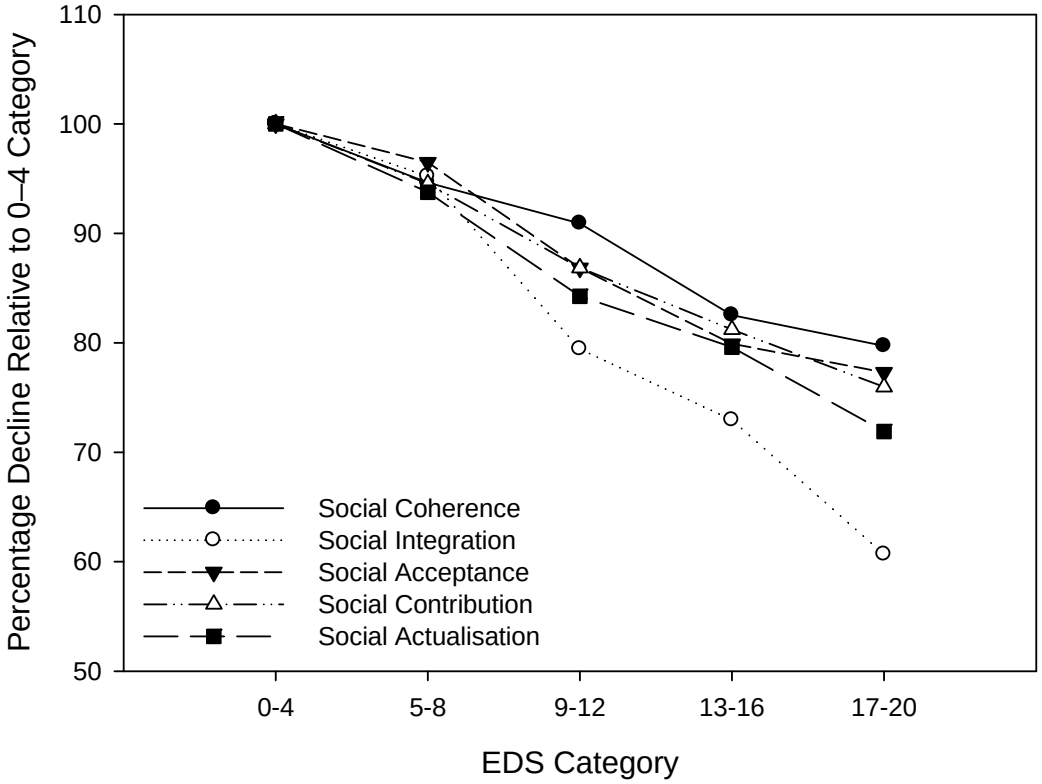


Figure 37. Relative decline in social well-being factors as mood declines. Data points are presented as a percentage of the 0–4 category.

Table 47

Coefficients of the lines of best fit for each social well-being factor

Factor	Intercept	Slope	r^2
Social Coherence	100.09	-5.27	0.98
Social Integration	101.83	-10.09	0.98
Social Acceptance	100.49	-6.20	0.97
Social Contribution	99.99	-6.14	1.00
Social Actualisation	99.97	-7.04	0.99

Positive and Negative Affect

A visual examination of the profiles displayed in Figure 34 suggests that each categorical decrease in mood has a similar impact for both Positive Affect and the absence of Negative Affect. Indeed, linear regression equations fitted to the data show r^2 values of 0.996 for Positive Affect and 0.992 for the absence of Negative Affect.

It would appear that Positive Affect is affected more by declining mood than the absence of Negative Affect. Figure 38 depicts the relative decline in each factor with reference to the 0–4 category. In this figure, each category is presented as a percentage of the 0–4 category. For example, the mean score for Positive Affect in the 17–20 category is 55.93% of that for the 0–4 category. Lines of best fit were calculated for each factor, with the results presented in Table 48. Each equation demonstrates good fit with the data. As can be seen, the slope for Positive Affect declines at a greater rate than the absence of Negative Affect, suggesting that it is affected more by declining mood.

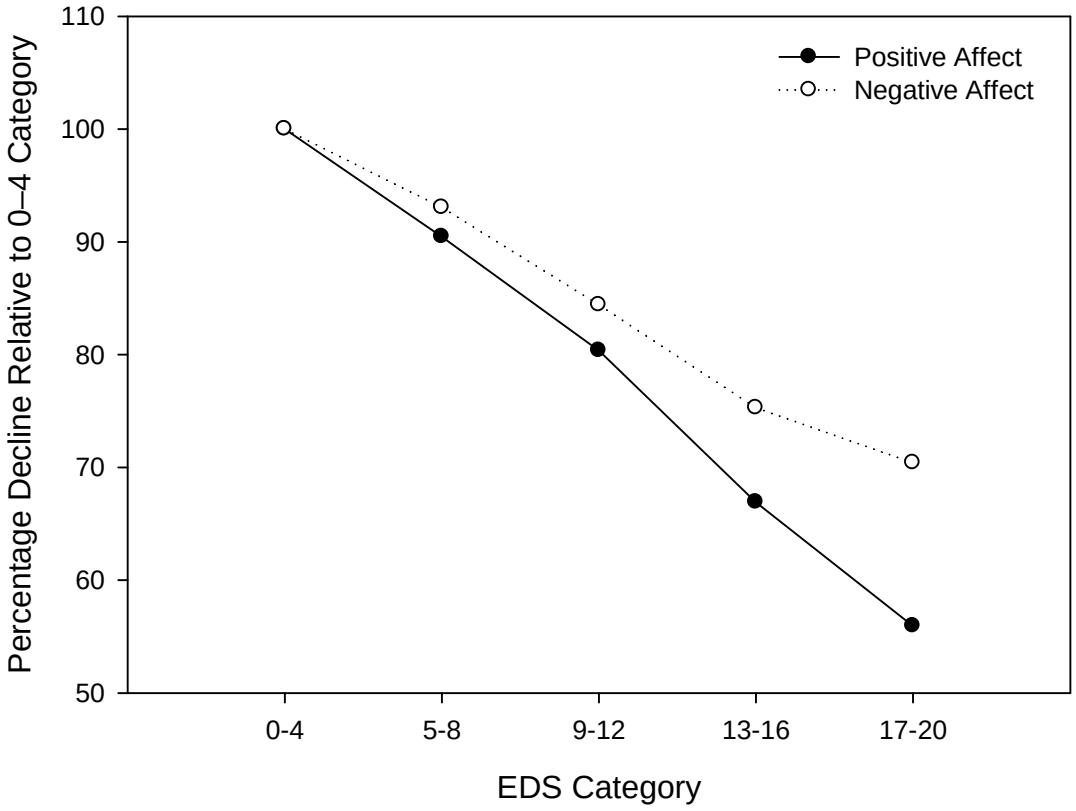


Figure 38. Relative decline in social well-being factors as mood declines. Data points are presented as a percentage of the 0–3 category.

Table 48

Coefficients of the lines of best fit for each psychological well-being factor

Factor	Intercept	Slope	r^2
Positive Affect	101.07	-11.17	1.00
Absence of Negative Affect	100.02	-7.70	0.99

Gratitude

In the interests of completeness a similar analysis of Gratitude is presented, even though there is no direct comparison with any other measure. As can be seen in Figure 35, Gratitude also appears to be affected in a linear fashion by categorical decreases in mood. Indeed, a linear regression equation fitted to the data shows an r^2 value of 0.99.

Prior Episodes of Depression

In order to examine whether previous episodes of depression might differentially influence positive psychological functioning (similar to the concept of cognitive scarring with depressive cognitions, Rohde, Lewinsohn, & Seeley, 1990), participants were assessed according to whether they were classified as never having been depressed, formerly depressed (i.e., at least one episode of depression in their life, but not currently depressed), or currently depressed. One-way ANOVAs were conducted for Psychological Well-Being, Social Well-Being, Positive Affect, absence of Negative Affect, and Gratitude.

Psychological Well-Being. Figure 39 depicts psychological well-being according to each of these classifications, augmented by a further classification according to EDS category. A one-way ANOVA was conducted in order to determine whether there were any significant differences between participants' depression status (never depressed, formerly depressed, or currently depressed) in terms of psychological well-being factors. The assumption of homogeneity of variance was violated for all factors except Autonomy. The ANOVA revealed a main effect of depression status for all factors: Autonomy, $F(2, 561) = 27.75$, $p < .05$; Environmental Mastery, $F(2, 241.19) = 126.30$, $p < .05$; Personal Growth, $F(2, 237.92) = 22.28$, $p < .05$; Positive Relations with Others, $F(2, 234.40) = 66.69$, $p < .05$; Purpose in Life, $F(2, 235.96) = 50.76$, $p < .05$; and Self-Acceptance, $F(2, 235.90) = 108.48$, $p < .05$. Post-hoc tests revealed that people classified as currently depressed reported significantly lower scores than either never depressed or formerly depressed on all factors. They further revealed that participants classified as never depressed reported significantly higher scores on all factors with the exception of Autonomy and Personal Growth. These findings suggest that at least one previous depressive episode reduces psychological well-being in the longer term.

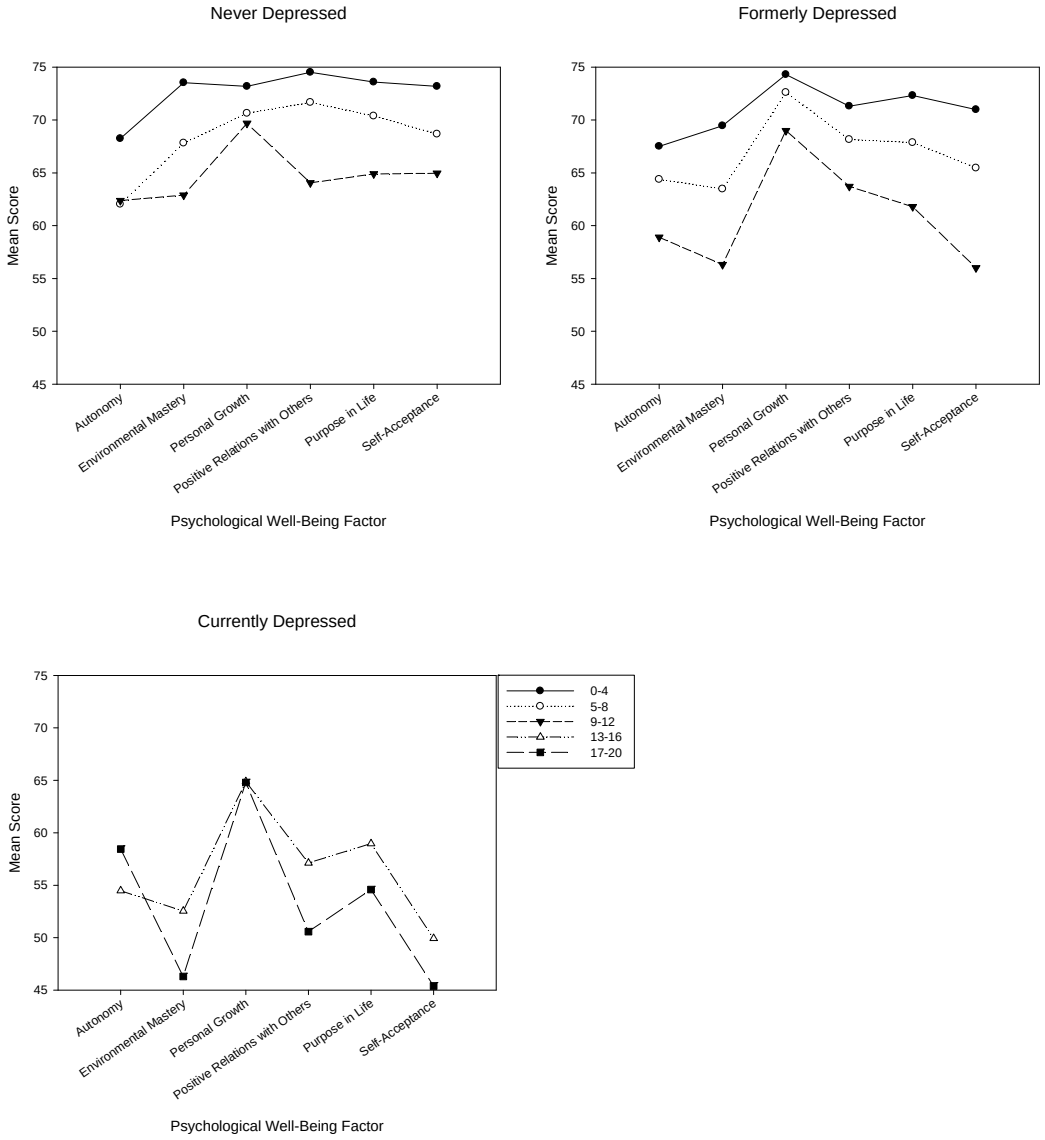


Figure 39. Psychological Well-Being by EDS Category According to Depression Status.

As before, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. However, it would again appear that some of the factors are affected more by declining mood than others according to whether participants are classified as never depressed or formerly depressed. Figure 40 depicts the relative decline in each factor with reference to the 0–4 category in both of these categories. From this figure, it would appear that Environmental Mastery and Self-Acceptance are again affected more than the other factors by declining mood, however only in people who are formerly depressed. Lines of best fit were calculated for each factor, with the results presented in Table 49.

Again, each equation demonstrates good fit with the data. As can be seen, the slopes for Purpose in Life and Self-Acceptance decline at approximately three-times and four-times the rate of Personal Growth in formerly depressed participants, suggesting that these factors are affected substantially more by declining mood. This may be indicative of cognitive scarring with these factors.

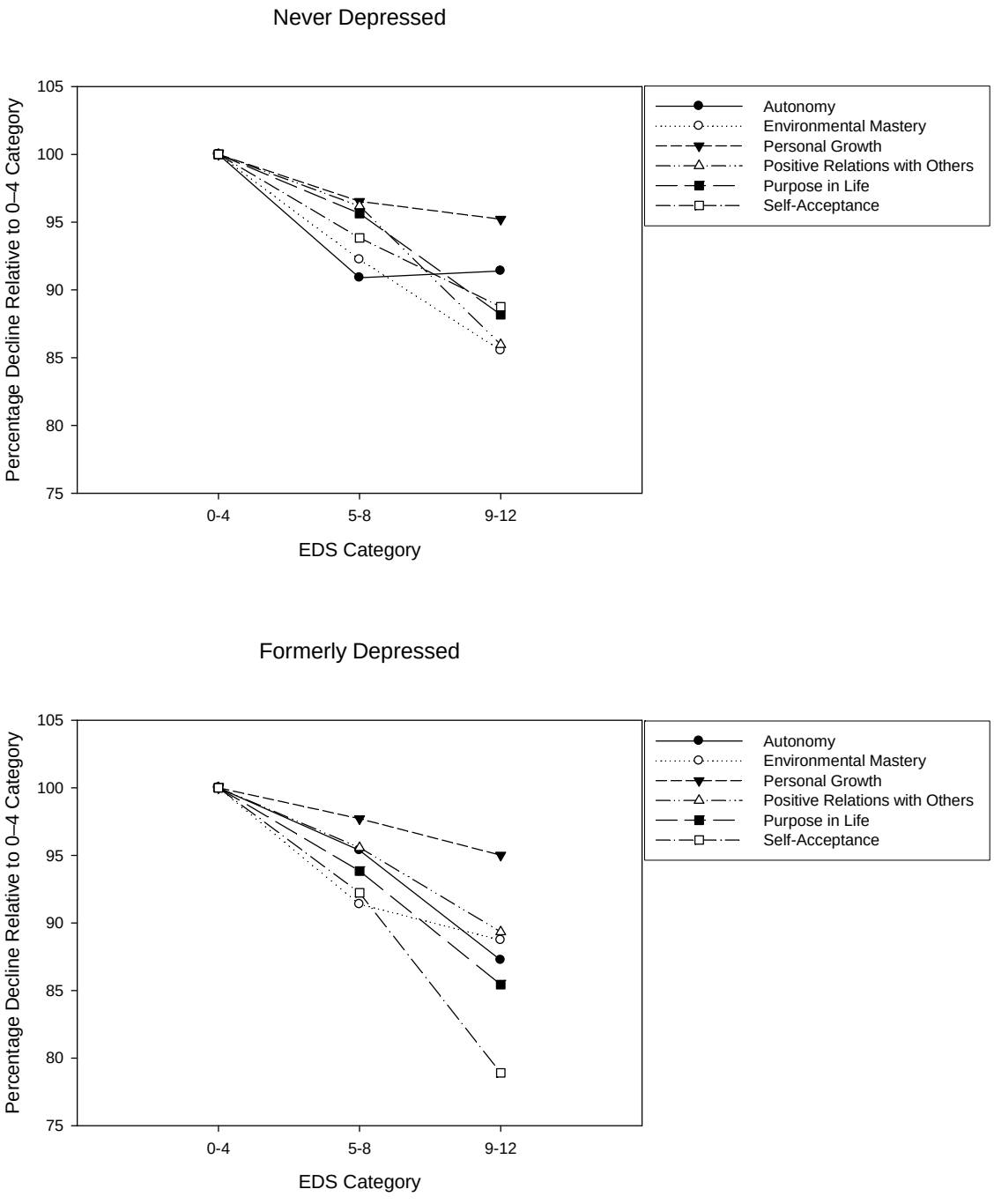


Figure 40. Relative decline in psychological well-being factors as mood declines for participants classified as never depressed and formerly depressed. Data points are presented as a percentage of the 0–4 category.

Table 49

Coefficients of the lines of best fit for never depressed and formerly depressed participants for each psychological well-being factor

Factor	Intercept	Slope	r^2
Never Depressed			
Personal Growth	99.64	-2.39	0.94
Autonomy	98.40	-4.30	0.71
Purpose in Life	100.52	-5.91	0.98
Positive Relations with Others	101.07	-7.02	0.93
Environmental Mastery	99.82	-7.24	1.00
Self-Acceptance	99.82	-5.62	1.00
Formerly Depressed			
Personal Growth	100.07	-2.49	1.00
Autonomy	100.99	-6.38	0.98
Purpose in Life	100.38	-7.28	0.99
Positive Relations with Others	100.30	-5.33	0.99
Environmental Mastery	99.01	-5.64	0.91
Self-Acceptance	100.93	-10.55	0.98

Social Well-Being. The assumption of homogeneity of variance was violated for all factors except Social Acceptance and Social Actualisation. The ANOVA revealed a main effect of depression status for all factors: Social Coherence, $F(2, 242.03) = 11.50$, $p < .05$; Social Integration, $F(2, 237.62) = 36.01$, $p < .05$; Social Acceptance, $F(2, 560) = 23.46$, $p < .05$; Social Contribution, $F(2, 234.71) = 19.49$, $p < .05$; and Social Actualisation, $F(2, 560) = 22.60$, $p < .05$. Games-Howell post-hoc tests revealed that people classified as currently depressed reported significantly lower scores than people classified as never depressed on all factors. They further revealed that participants classified as never depressed reported significantly higher scores on all factors than those classified as Formerly Depressed for Social Integration and Social Acceptance. These findings

suggest that at least one previous depressive episode reduces at least some aspects of social well-being in the longer term.

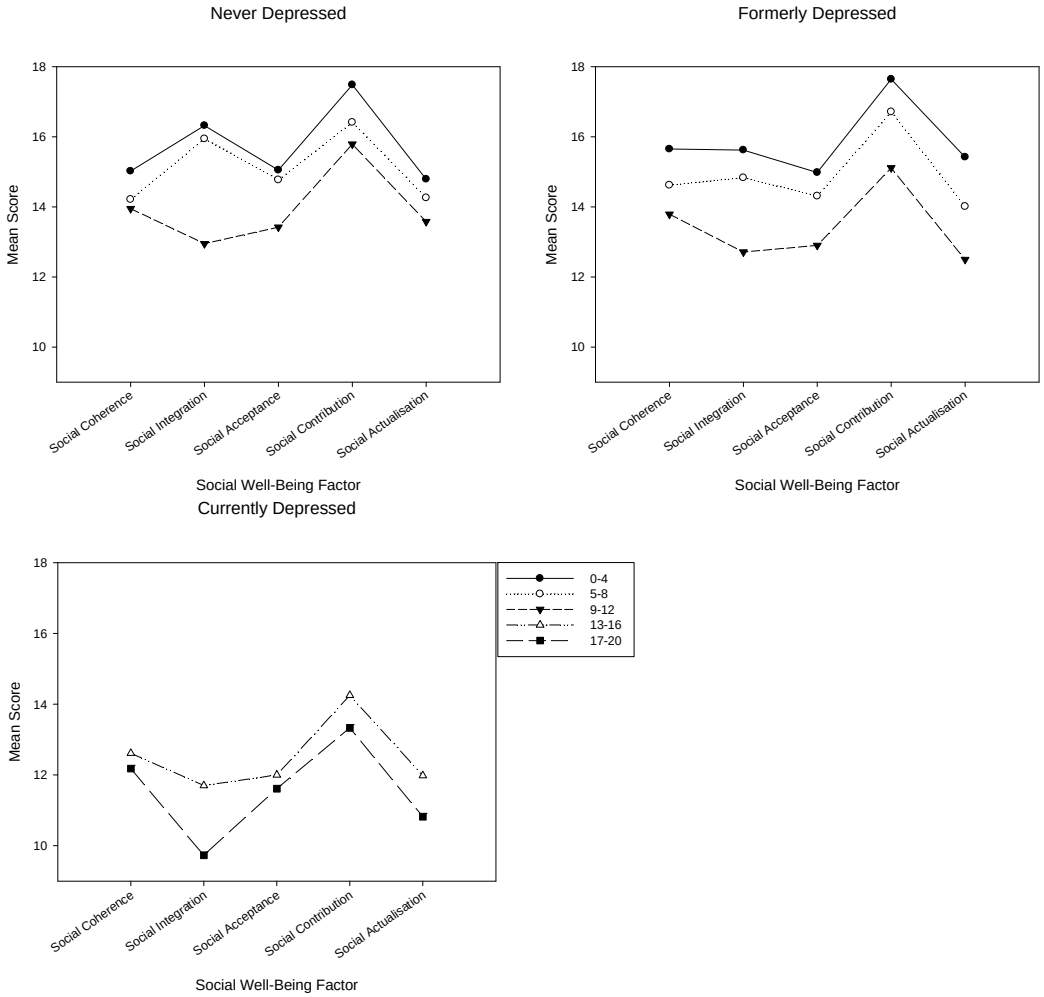


Figure 41. Social well-being by EDS Category According to Depression Status.

As before, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. However, it would again appear that some of the factors are affected more by declining mood than others according to whether participants are classified as never depressed or formerly depressed. Figure 42 depicts the relative decline in each factor with reference to the 0–4 category in both of these categories. From the figure, it would appear that Social Integration is affected more than other factors as mood decreases for people classified as never depressed, along with Social Actualisation for people classified as formerly depressed. That is, while Social Integration seems to suffer more than the other factors in either classification, it would also appear that Social Actualisation is on a par with

Social Integration for people classified as formerly depressed. It also seems that people classified as never depressed experience a lower rate of reduction in all factors in comparison to people classified as formerly depressed, which may be evidence of cognitive scarring in the Social Well-Being domain. Lines of best fit were calculated for each factor, with the results presented in Table 50. Each equation demonstrates good fit with the data. As can be seen, the slope for Social Integration is substantially steeper that for the other factors for both never depressed and formerly depressed. Furthermore, it appears that Social Actualisation is affected to a similar degree for people classified as formerly depressed. It seems clear that the general effect is one of declining psychological well-being as mood declines, with some factors affected more than others.

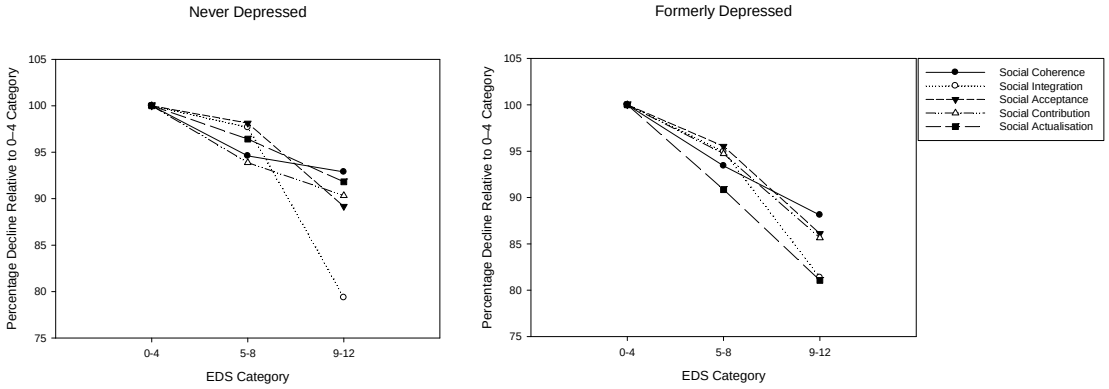


Figure 42. Social well-being by EDS Category According to Depression Status.

Table 50

Coefficients of the lines of best fit for never depressed and formerly depressed participants for each social well-being factor

Factor	Intercept	Slope	r^2
Never Depressed			
Social Coherence	99.39	-3.56	0.92
Social Integration	102.67	-10.32	0.83
Social Acceptance	101.18	-5.42	0.87
Social Contribution	99.57	-4.83	0.98
Social Actualisation	100.17	-4.09	0.99
Formerly Depressed			
Social Coherence	99.79	-5.94	1.00
Social Integration	101.42	-9.31	0.93
Social Acceptance	100.82	-6.94	0.96
Social Contribution	100.63	-7.17	0.98
Social Actualisation	100.11	-9.47	1.00

Positive Affect and the Absence of Negative Affect. The assumption of homogeneity of variance was violated for the Absence of Negative Affect. The ANOVA revealed a main effect of depression status for both factors: Positive Affect, $F(2, 561) = 158.18$, $p < .05$; Absence of Negative Affect, $F(2, 226.58) = 143.64$, $p < .05$. Post-hoc tests revealed that people classified as Currently Depressed reported significantly lower scores than people classified as Never Depressed on all factors. They further revealed that participants classified as Never Depressed reported significantly higher scores on all factors than those classified as Formerly Depressed. These findings suggest that at least one previous depressive episode reduces positive affect and the absence of negative affect in the longer term. Figure 43 shows a comparison of both Positive Affect and the Absence of Negative Affect for each category of depression status.

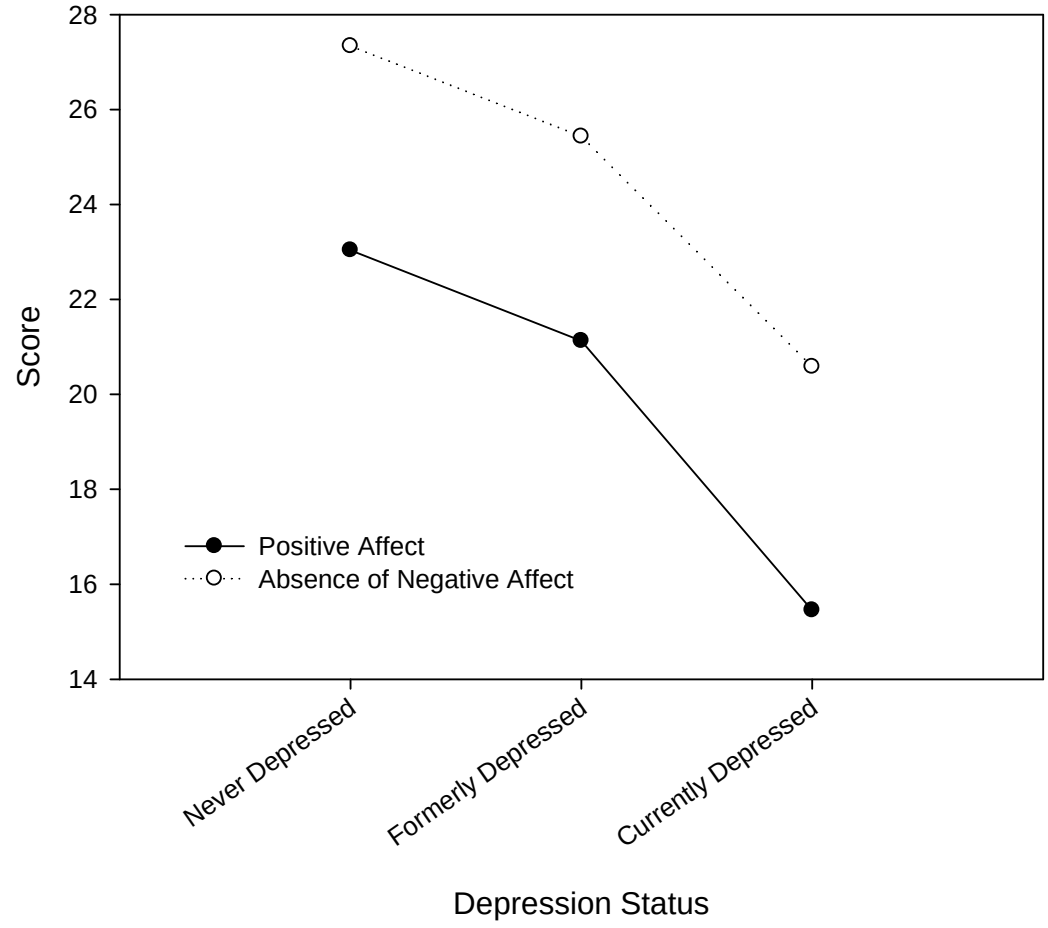


Figure 43. Positive Affect and Absence of Negative Affect by Depression Status.

Discussion

The analyses appear to indicate that there is a strong negative correlation between mood and Psychological Well-Being. That is, as EDS scores increase there is a general decline in Psychological Well-Being. In addition, there appears to be a strong indication that the factors constituting Psychological Well-Being are differentially affected by declining mood. Of these, it seems that Personal Growth is least correlated, while an examination of Figure 36 suggests that the factors most negatively correlated with EDS scores are Self-Acceptance, Environmental Mastery, and Positive Relations with Others. It is considered that these findings are consistent with both the various theoretical views of depression and the diagnostic symptomatology of the disorder – particularly in terms of a person's view of the self and the world as seen

through their capacity to interact with the world and other people. For example, the diagnostic criteria outlined in the DSM-IV (American Psychiatric Association, 2000) include self-reproach or guilt (which may be related to Self-Acceptance) and a loss of interest in everyday activities (which may be related to Environmental Mastery). It is perhaps particularly relevant to the Negative Cognitive Styles Theory of Depression (A. T. Beck, 1987; Dubovsky, et al., 2003), where a person's belief that he or she can do something to influence their environment is seemingly confirmed by their thoughts and interpretations of events. That is, a particular cognitive rejection of the self (through diminished Self-Acceptance), the world around them (Environmental Mastery), and a decline in or withdrawal from personal relationships (Positive Relationships with Others) would be expected to have a significant influence on the development of depression. With regard to Seligman's Learned Helplessness Theory of Depression (Seligman, 1974, 1975), it would appear that Environmental Mastery may be especially relevant, in that people who hold that they are unable to influence the outcome of events affecting them (Environmental Mastery) are at risk of developing depression. This may be coupled with a situation where a lowered level of Self-Acceptance and diminished Positive Relations with Others results in an individual unconsciously constructing circumstances that lead them to believe that what they wish to achieve in life is compromised, leading them to give up trying.

In addition, there appears to be some evidence of cognitive scarring when participants who have never been depressed are compared to those who have formerly been depressed. Figure 39 and Figure 40 suggest that there is much greater variability for participants who were classified as Formerly Depressed than those classified as Never Depressed. Again, Self-Acceptance appears to be most affected in Formerly Depressed participants as EDS scores increase, while Personal Growth appears to be the most resilient factor.

Chapter 10 – Time 2 Results

The mean EDS score for the 409 participants who provided data at Time 2 was 5.88 (*SD* = 5.25). A paired-samples *t*-test indicated that this was a significantly lower score than that at Time 1, $t(408) = 5.49$, $p < .05$, thus suggesting that mood levels had significantly improved from Time 1 to Time 2. There was a significant difference between the student and maternity samples in terms of EDS score; the assumption of homogeneity of variance was violated, however students (*M* = 7.22, *SD* = 5.70) reported significantly higher EDS scores than the maternity sample (*M* = 4.51, *SD* = 4.36), $t(385.11) = 5.42$, $p < .05$. Paired-samples *t*-tests showed that both the student sample ($t(206) = 5.11$, $p < .05$) and the maternity sample ($t(201) = 2.40$, $p < .05$) displayed significant decreases in EDS scores from Time 1 to Time 2.

Participants in the maternity sample were asked to indicate how they felt in general about becoming a mother by endorsing a point on a 9-point scale. The scale was anchored with the descriptors 'Negative' under the first point, 'Neutral' under the central point, and 'Positive' under the ninth point. Some participants chose to endorse points in between the primary marked points, and these were included in the analysis as half-points (e.g., 7.5). A paired-samples *t*-test indicated that these feelings increased significantly from Time 1 (*M* = 7.80, *SD* = 1.26) to Time 2 (*M* = 8.22, *SD* = 1.06), $t(187) = 4.54$, $p < .05$, suggesting that the reality of being a mother was better than what was expected during pregnancy.

Based on their EDS scores, participants were classified into their depression status. In terms of the total sample, 318 women (77.8%) were classified as Not Depressed, 39 (9.5%) were classified as having Borderline Depression, and 52 (12.7%) were classified as being Depressed. Figure 44 illustrates the different frequencies in each category based on whether the participant was a student or from the maternity sample.

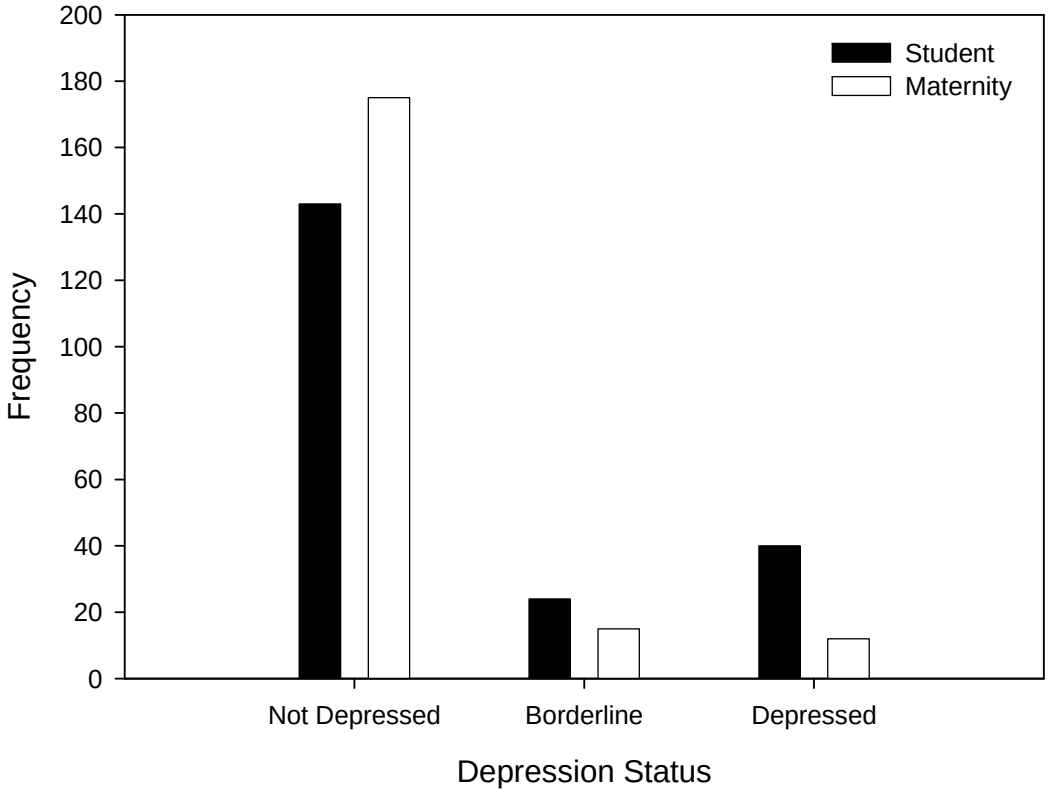


Figure 44. Number of women in EDS depression categories at Time 2 according to whether they are from the student or maternity samples.

Analyses were conducted in order to determine whether any of the demographic factors may have been associated with levels of depression. With respect to the highest level of education achieved, a one-way ANOVA revealed a main effect of education level $F(6, 72.28) = 2.72$, $p < .05$. The assumption of homogeneity of variance was violated. Post-hoc analyses revealed that participants who had completed Year 12 as their highest level of education reported significantly higher scores on the EDS than people who had completed Bachelors degrees. No other significant differences were noted. Table 51 shows the number of participants in each education category at Time 2.

Table 51

Frequency of participants in each education level at Time 2

Education Level	Frequency	Percentage
Did not disclose	2	0.5
Year 10	28	6.8
Year 12	139	34.0
TAFE	77	18.8
Undergraduate Degree	62	15.2
Bachelor's Degree	74	18.1
Graduate Degree	11	2.7
Postgraduate Degree	16	3.9

A one-way ANOVA was conducted in order to determine whether there were any significant differences on EDS score in terms of employment status. The assumption of homogeneity of variance was violated. A main effect of employment status was observed, $F(4, 69.56) = 7.18$, $p < .05$. Figure 45 illustrates the mean EDS scores of each type of employment status, along with significant differences. It would appear that people employed full-time have significantly lower levels of depression than any other form of employment, with the exception of those who are self-employed or engaged in home duties. Table 52 shows the number of participants in each form of employment.

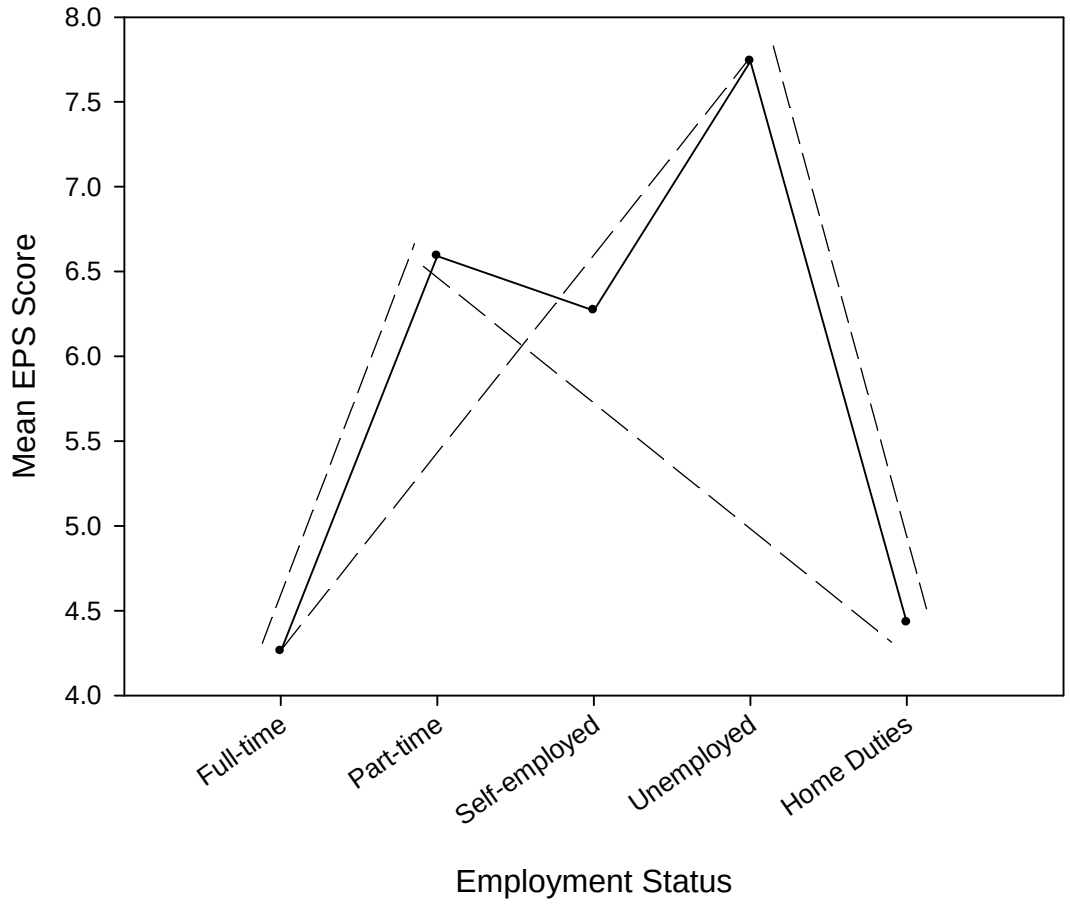


Figure 45. Mean EDS score at Time 2 by employment status. Dashed lines indicate significant differences.

Table 52

Frequency of participants in each form of employment at Time 2

Employment Status	Frequency	Percentage
Full-Time	96	23.8
Part-Time	150	37.2
Self-Employed	11	2.7
Unemployed	74	18.4
Home Duties	72	17.9

A one-way ANOVA was conducted in order to determine whether there were any significant differences on EDS score in terms of relationship status. There was only one participant who reported being widowed, and she was re-coded as single for the purposes of all analyses. The assumption of homogeneity of variance was violated. A main effect of relationship status was observed, $F(5, 34.53) = 6.77$, $p < .05$. Figure 46 illustrates the mean EDS scores of each type of relationship status, along with significant differences. It would appear that, in general, being married or in a relationship leads to lower levels of depression than being single.

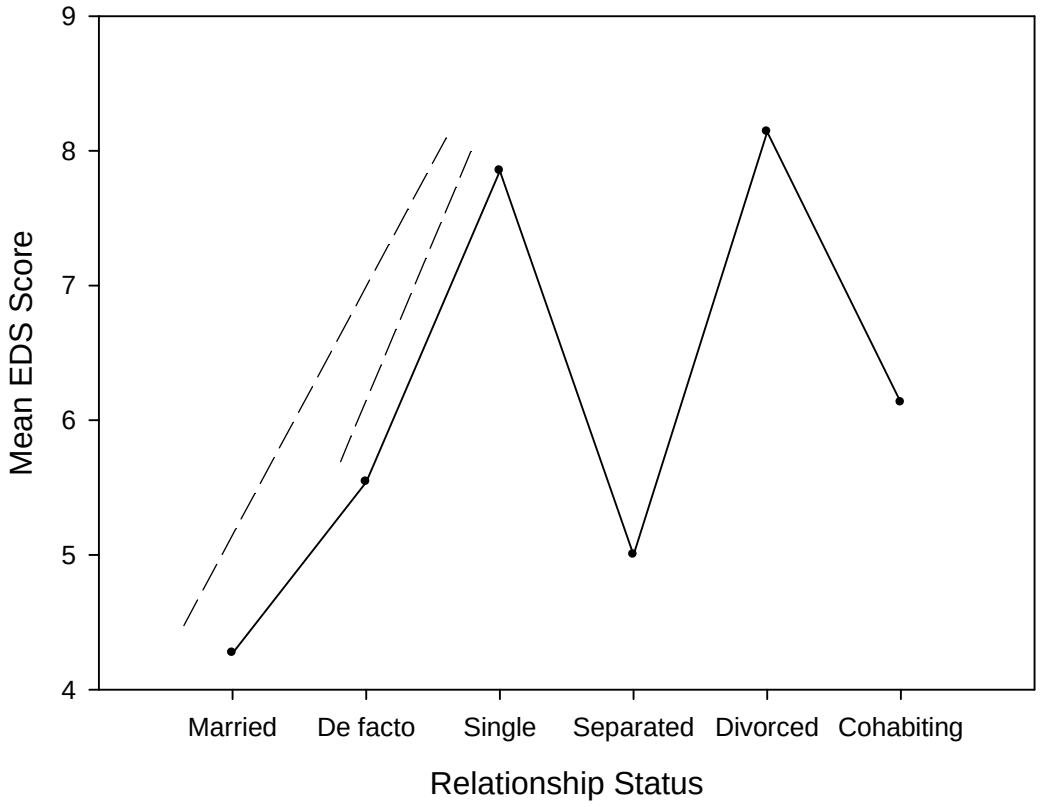


Figure 46. Mean EDS score at Time 2 by relationship status. Dashed lines indicate significant differences.

Table 53

Frequency of participants in each type of relationship at Time 2

Relationship Status	Frequency	Percentage
Married	145	37.6
De facto	76	19.7
Single	133	34.5
Separated	9	2.3
Divorced	6	1.6
Cohabiting	17	4.4

A one-way ANOVA was conducted in order to determine whether there were any significant differences on EDS scores at Time 2 in terms of health status. The assumption of homogeneity of variance was violated. A main effect of health status was observed, $F(4, 24.36) = 13.16$, $p < .05$. Figure 47 illustrates the mean EDS scores of each type of health status, along with significant differences. It would appear that higher levels of health are associated with lower levels of depression. Table 54 shows the number of participants reporting each type of health status category.

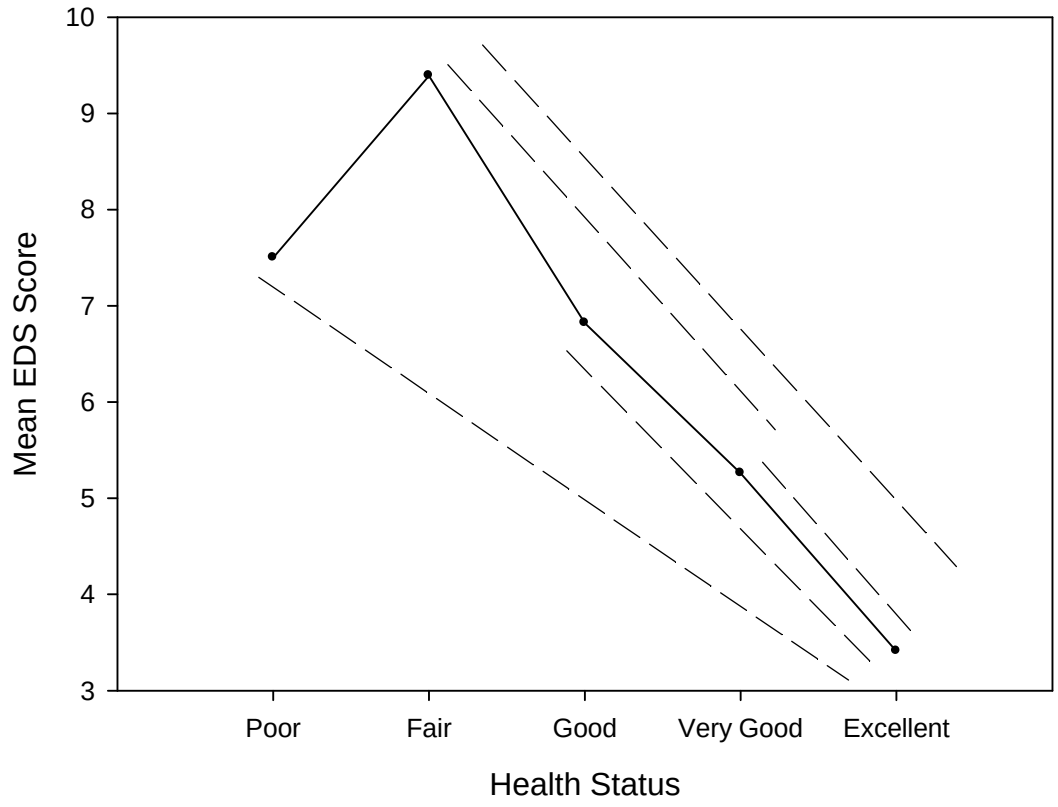


Figure 47. Mean EDS score at Time 2 by health status. Dashed lines indicate significant differences.

Table 54

Frequency of participants in each health status category

Health Status	Frequency	Percentage
Poor	7	1.2
Fair	51	8.9
Good	206	35.9
Very Good	213	37.1
Excellent	97	16.9

Discussion

Notable with the Time 2 data was the significant decrease in EDS scores, particularly for the student group, which decreased from being just under the

threshold for Borderline Depression. There are considered to be two possible scenarios to account for this significant improvement in mood. Firstly, participants who experienced an increase in EDS score (indicating a worsening mood or perhaps the onset of a depressive episode) may not have been inclined to return data for Time 2, since one of the diagnostic criteria for depression is a loss of interest in activities. Indeed, it may be reflective of the decline in Social Integration observed in the Time 1 analyses, thus making it less likely that participants would engage in activities such as this research. Secondly, participants' experience of both university life and motherhood may have been substantially better than they initially believed. This is partially supported by the maternity sample's increased positive feelings about motherhood. The results for the remaining demographic data have remained substantially the same as those from the analyses of the Time 1 data.

Psychological Well-Being

Four hundred and nine participants provided information regarding their psychological well-being at Time 2. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. Figure 48 depicts psychological well-being at Time 2. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels on each of the scales. The assumption of homogeneity of variance was violated for Environmental Mastery, Positive Relations with Others, and Self-Acceptance. The analysis revealed that students reported significantly lower levels of psychological well-being than the maternity sample on Autonomy, $F(1, 407) = 12.29$, $p < .05$; Environmental Mastery, $F(1, 401.00) = 27.30$, $p < .05$; Positive Relations with Others, $F(1, 404.66) = 22.50$, $p < .05$; Purpose in Life, $F(1, 407) = 14.10$, $p < .05$; and Self-Acceptance, $F(1, 399.75) = 29.67$, $p < .05$. There was no significant difference between the groups on Personal Growth.

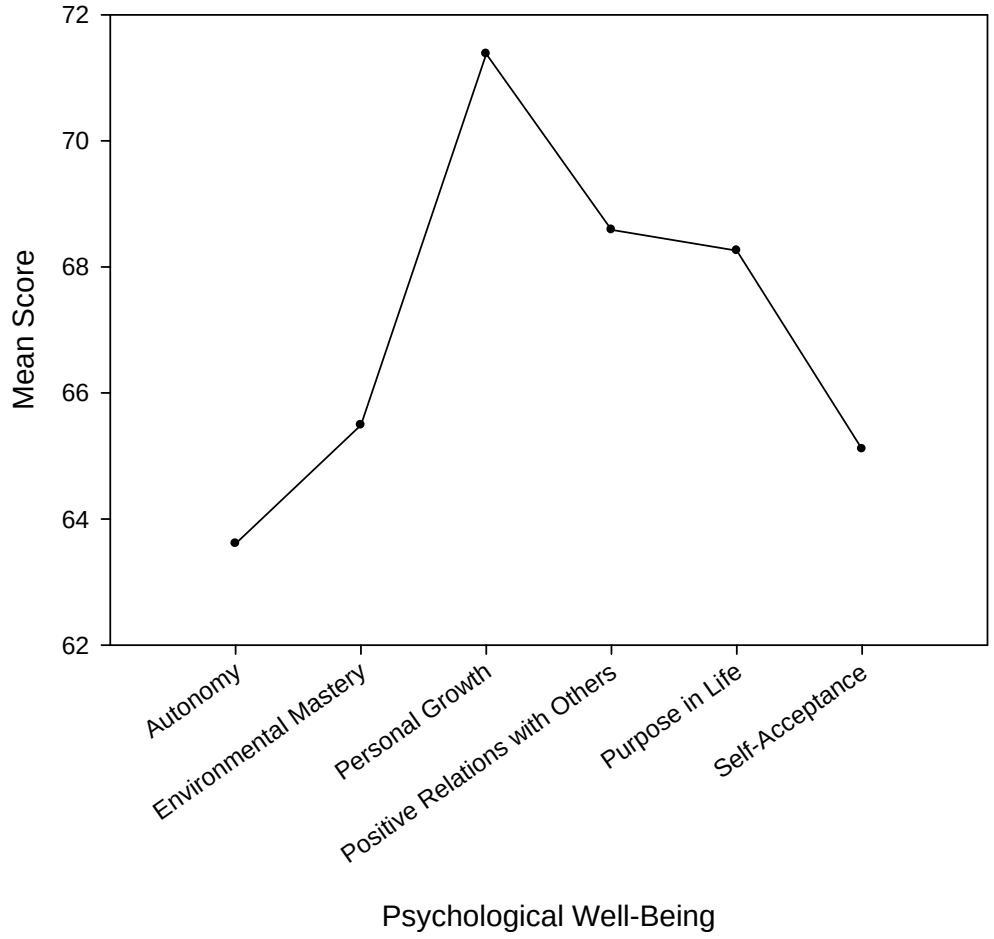


Figure 48. Psychological Well-Being at Time 2.

A one-way ANOVA was conducted in order to determine whether psychological well-being differed according to whether participants were categorized Not Depressed, Borderline Depression, or Depressed according to the EDS at Time 2. The assumption of homogeneity of variance was violated for Personal Growth, Purpose in Life, and Self-Acceptance. The analysis revealed a main effect of depression category for Autonomy, $F(2, 406) = 36.33$, $p < .05$; Environmental Mastery, $F(2, 406) = 114.29$, $p < .05$; Personal Growth, $F(2, 66.29) = 28.13$, $p < .05$; Positive Relations with Others, $F(2, 406) = 60.94$, $p < .05$; Purpose in Life, $F(2, 66.66) = 67.41$, $p < .05$; and Self-Acceptance, $F(2, 66.80) = 94.31$, $p < .05$. Post-hoc testing revealed that participants classified as Not Depressed reported significantly higher scores than participants who were classified as either Borderline Depression or Depressed on all factors. Participants classified as

experiencing Borderline Depression reported significantly higher scores than those classified as Depressed on Environmental Mastery, Purpose in Life, and Self-Acceptance.

A further distinction that can be made between people in terms of their depression status is whether they can be considered Never Depressed or Formerly Depressed. That is, whether it is likely that they have experienced depression at some time in their life even though they would not currently be considered to be depressed. In order to determine an appropriate classification, participants were asked questions relating to times in their life when they had either felt depressed or down or less interested in most things over a period of at least two weeks, as well as whether they had ever been diagnosed or treated for depression, and whether they were being treated for depression at the time of completing the questionnaire. For only those people whose EDS score did not fall into the Depressed range, they were classified as formerly Depressed if they answered 'yes' to any of the questions. Participants were re-classified to ensure that their classification reflected any changes from Time 1 to Time 2. For example, a participant who was classified as Never Depressed at Time 1 has their classification changed to Currently Depressed if her Time 2 EDS score was greater than 12. A one-way ANOVA was conducted in order to determine whether psychological well-being differed in terms of these classifications. The assumption of homogeneity of variance was violated for all factors except Autonomy. The analysis revealed a main effect of depression status for Autonomy, $F(2, 406) = 26.17$, $p < .05$; Environmental Mastery, $F(2, 133.72) = 96.06$, $p < .05$; Personal Growth, $F(2, 134.88) = 19.95$, $p < .05$; Positive Relations with Others, $F(2, 138.55) = 59.89$, $p < .05$; Purpose in Life, $F(2, 135.52) = 63.31$, $p < .05$; and Self-Acceptance, $F(2, 136.39) = 90.34$, $p < .05$. Post-hoc testing revealed that participants classified as Never Depressed reported significantly higher scores on all factors than those classified as Currently Depressed, and reported significantly higher scores on all factors other than Personal Growth than those classified as Formerly Depressed. Participants classified as Formerly Depressed reported significantly higher scores on all factors than those classified as Currently Depressed. Table 55 shows how the classification was determined with respect to these changes.

Table 55

Time 2 depression status classification

EDS Classification Change	Depression Status
Stayed Not Depressed	Time 1 Classification
Stayed Borderline	Time 1 Classification
Stayed Depressed	Time 1 Classification
Not Depressed to Borderline	Time 1 Classification
Not Depressed to Depressed	Currently Depressed
Borderline to Depressed	Currently Depressed
Depressed to Borderline	Formerly Depressed
Depressed to Not Depressed	Formerly Depressed
Borderline to Not Depressed	Time 1 Classification

In order to determine the impact of decreasing mood on psychological well-being, each participant's EDS score was classified according to a hierarchy. Using the EDS cut-off for depression of 12 as a reference point, the range of scores was classified into seven categories. These were: 0–4, 5–8, 9–12, 13–16, 17–20, 21–24, and 25–30. These category sizes were chosen in order to be smaller than what is considered to be a clinically significant change on the EDS of 5 points (see page 123). Because there are 31 possible scores on the EDS, it was not possible to construct categories of equal size. Consequently, the lowest category was constructed from 0–4 because it was considered that scores this low would be unlikely to show any substantial differences between one another, while the highest category extended from 25–30 for the same reason. Table 56 shows the number of participants in each category. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 49 portrays the relative profiles of each category for all psychological well-being factors at Time 2.

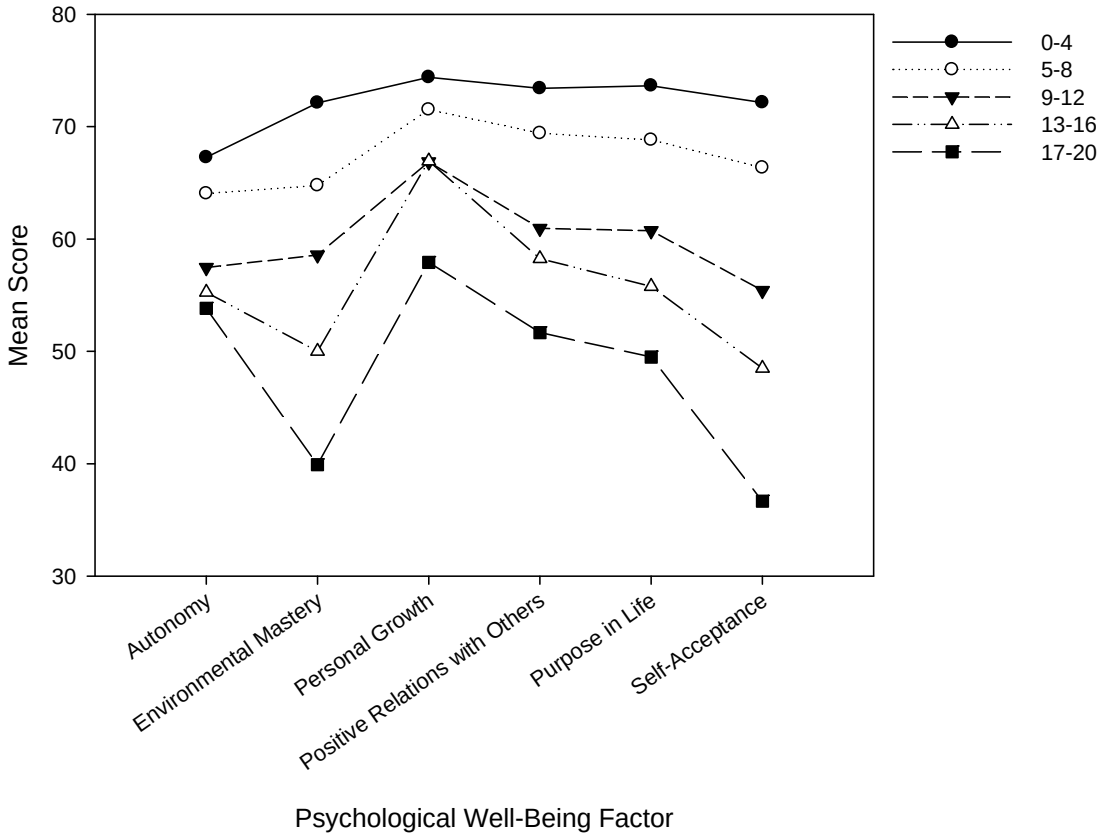


Figure 49. Psychological Well-Being by EDS Category at Time 2.

Table 56

Number of participants in each EDS hierarchy category at Time 1 for Psychological Well-Being

Category	Number of Participants
0–4	201
5–8	105
9–12	51
13–16	32
17–20	12
21–24	7
25–30	1

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced psychological well-being. The assumption of homogeneity of variance was violated for all factors except Autonomy and Environmental Mastery. The results indicated a main effect of EDS category for Autonomy, $F(4, 396) = 19.35$, $p < .05$; Environmental Mastery, $F(4, 396) = 80.91$, $p < .05$; Personal Growth, $F(4, 57.23) = 17.14$, $p < .05$; Positive Relations with Others, $F(4, 58.39) = 29.95$, $p < .05$; Purpose in Life, $F(4, 58.00) = 47.00$, $p < .05$; and Self-Acceptance, $F(4, 59.43) = 96.86$, $p < .05$. Post-hoc testing revealed that, with regard to Autonomy, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in the 9–12 and 13–16 categories, but not 17–20; participants in the 9–12 and 13–16 categories were not significantly different to those in any higher category. With regard to Environmental Mastery, participants in all categories were found to be significantly different to participants in all other categories. With regard to Personal Growth, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; participants in the 5–8 category were found to have significantly higher scores than participants in the categories 9–12 and 17–20, but not 13–16; while participants in the 9–12 and 13–16 categories were found to not be significantly different to any higher categories. With regard to Positive Relations with Others, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; and participants in the 9–12 and 13–16 categories were found to not be significantly different to any higher categories. With regard to Purpose in Life, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to have significantly higher scores than participants in the 17–20 category but not 13–16; and participants in the 13–16 category were not significantly different to those in the 17–20 category. With regard to Self-Acceptance, participants with EDS scores in the 0–4 and 5–8 categories were found to have significantly higher scores than participants in all other categories; participants in the 9–12 category were found to

have significantly higher scores than participants in the 17–20 category but not 13–16; and participants in the 13–16 category were significantly higher than those in the 17–20 category.

A visual examination of the profiles displayed in Figure 49 suggests that people in the lowest EDS category report scores on psychological well-being that are very similar to each other (with the possible exception of Autonomy), but that these relativities change as mood decreases. Apart from the apparent general decrease in psychological well-being as mood decreases (indicated by vertical separation of the categories), it appears that some factors are affected to a greater degree than others. The pattern of responses suggests that this is most noticeable with Environmental Mastery, Self-Acceptance, Positive Relations with Others, and Purpose in Life. Further, it would appear that Personal Growth is least influenced by decreasing mood. In order to examine these patterns, paired-samples *t*-tests were conducted between each psychological well-being factor for each category. In order to control for Type I error, the alpha level for each comparison was adjusted. Since there are 15 possible comparisons of the six factors, the adjusted alpha level was set at .003. For the 0–4 category, all pairwise comparisons were significantly different to one another, except Environmental Mastery–Positive Relations with Others, Environmental Mastery–Self-Acceptance, Personal Growth–Positive Relations with Others, Personal Growth–Purpose in Life, Positive Relations with Others–Purpose in Life, and Positive Relations with Others–Self-Acceptance. For the 5–8 category, all pairwise comparisons were significantly different to one another, except Autonomy–Environmental Mastery, Autonomy–Self-Acceptance, Environmental Mastery–Self-Acceptance, Personal Growth–Positive Relations with Others, and Positive Relations with Others–Purpose in Life. For the 9–12 category, all pairwise comparisons were significantly different to one another, except Autonomy–Environmental Mastery, Autonomy–Positive Relations with Others, Autonomy–Purpose in Life, Autonomy–Self-Acceptance, Environmental Mastery–Positive Relations with Others, Environmental Mastery–Purpose in Life, Environmental Mastery–Self-Acceptance, and Positive Relations with Others–Purpose in Life. For the 13–16 category, the only significantly difference categories were Autonomy–Personal Growth, Environmental Mastery–Personal Growth, Environmental Mastery–Positive Relations with Others, Personal Growth–Positive Relations with

Others, Personal Growth–Purpose in Life, Personal Growth–Self-Acceptance, Positive Relations with Others–Self-Acceptance, and Purpose in Life–Self-Acceptance. For the 17–20 category, the only significant differences were Autonomy–Self-Acceptance, Environmental Mastery–Personal Growth, Environmental Mastery–Purpose in Life, Personal Growth–Self-Acceptance, Positive Relations with Others–Self-Acceptance, and Purpose in Life–Self-Acceptance.

In order to determine whether Positive Relations with Others, Environmental Mastery, and Self-Acceptance were affected by decreasing mood more than the other psychological well-being factors, all factors were rank-ordered based on the range between lowest and highest category means. This confirmed that the greatest difference between the 0–4 category and the 17–20 category was for these three factors (see Table 57 for a comparison of the ranges of all factors). Post-hoc tests from the one-way ANOVA were examined in order to ascertain whether statistical support could be found for these factors being affected more than the others. With regard to Autonomy and Personal Growth, a significant decrease was found between 0–3 and 4–6, indicating minimal change as mood progressively decreases. With regard to Positive Relations with Others and Purpose in Life, significant decreases were found between 4–6 and 7–9. With regard to Environmental Mastery and Self-Acceptance, significant decreases were found between 0–3 and 4–6 and 4–6 and 7–9. As such, it would appear that Autonomy and Personal Growth were least affected at Time 2, while Environmental Mastery and Self-Acceptance were most affected by decreasing mood.

Table 57

Range of mean psychological well-being scores for each factor according to EDS hierarchy category

Factor	Range
Personal Growth	16.47
Autonomy	13.44
Positive Relations with Others	21.73
Purpose in Life	24.14
Environmental Mastery	32.20
Self-Acceptance	35.48

Even though each factor forms part of a construct known as psychological well-being, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. As such, any change observed may merely reflect the properties of the variables. Nevertheless, it would appear that some of the factors are affected more by declining mood than others. Figure 50 depicts the relative decline in each factor with reference to the 0–4 category. In this figure, each category is presented as a percentage of the 0–4 category. For example, the mean score for Self-Acceptance in the 17–20 category is 50.82% of that for the 0–4 category. From this figure, it would appear that Environmental Mastery and Self-Acceptance are affected more than the other factors by declining mood. Lines of best fit were calculated for each factor, with the results presented in Table 58. Each equation demonstrates good fit with the data, with only one factor showing an r^2 value of less than 0.94. As can be seen, the slopes for Environmental Mastery and Self-Acceptance decline at more than twice the rate of Personal Growth, suggesting that these factors are affected substantially more by declining mood. Indeed, it seems clear that the general effect is one of declining psychological well-being as mood declines, with some factors affected more than others.

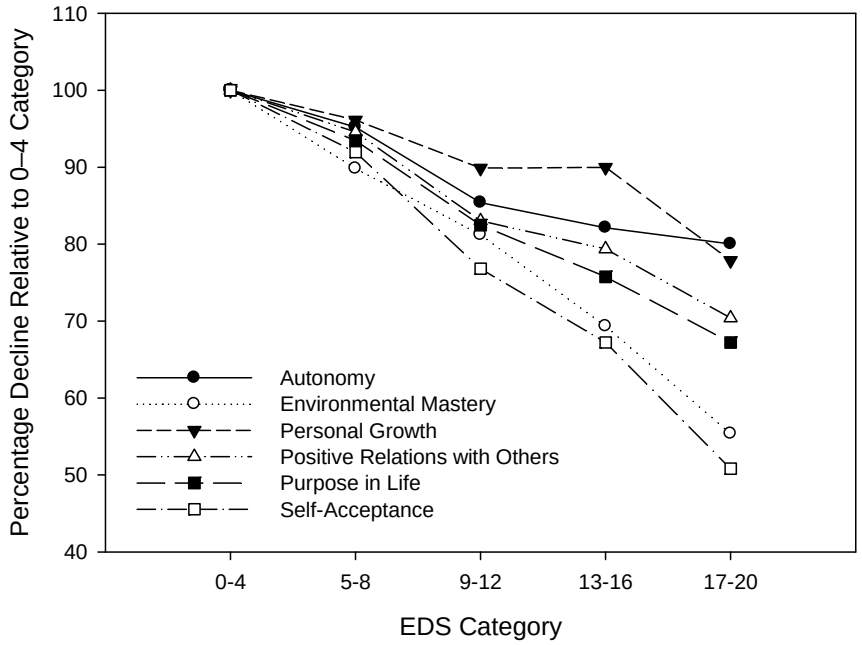


Figure 50. Relative decline in psychological well-being factors at Time 2 as mood declines. Data points are presented as a percentage of the 0–4 category.

Table 58

Coefficients of the lines of best fit for each psychological well-being factor at Time 2

Factor	Intercept	Slope	r^2
Personal Growth	100.85	-5.04	0.90
Autonomy	99.16	-5.30	0.94
Purpose in Life	100.43	-8.33	0.99
Positive Relations with Others	100.35	-7.44	0.98
Environmental Mastery	101.10	-10.98	0.99
Self-Acceptance	101.97	-12.31	0.99

In order to examine whether previous episodes of depression might differentially influence psychological well-being (similar to the concept of cognitive scarring with depressive cognitions, Rohde, et al., 1990), participants were assessed according to whether they were classified as never having been depressed, formerly depressed (i.e., at least one episode of depression in their life, but not currently

depressed), or currently depressed. Figure 51 depicts psychological well-being according to each of these classifications, augmented by a further classification according to EDS category. A one-way ANOVA was conducted in order to determine whether there were any significant differences between participants' depression status (Never Depressed, Formerly Depressed, or Currently Depressed) in terms of psychological well-being factors. The assumption of homogeneity of variance was violated for all factors except Autonomy. The ANOVA revealed a main effect of depression status for all factors: Autonomy, $F(2, 571) = 33.64$, $p < .05$; Environmental Mastery, $F(2, 260.80) = 140.21$, $p < .05$; Personal Growth, $F(2, 259.18) = 22.65$, $p < .05$; Positive Relations with Others, $F(2, 256.15) = 74.76$, $p < .05$; Purpose in Life, $F(2, 257.00) = 61.31$, $p < .05$; and Self-Acceptance, $F(2, 255.07) = 121.34$, $p < .05$. Post-hoc tests revealed that people classified as currently depressed reported significantly lower scores than either never depressed or formerly depressed on all factors. They further revealed that participants classified as Never Depressed reported significantly higher scores on all factors than those classified as Formerly Depressed, with the exception of Autonomy and Personal Growth. These findings suggest that at least one previous depressive episode reduces psychological well-being in the longer term.

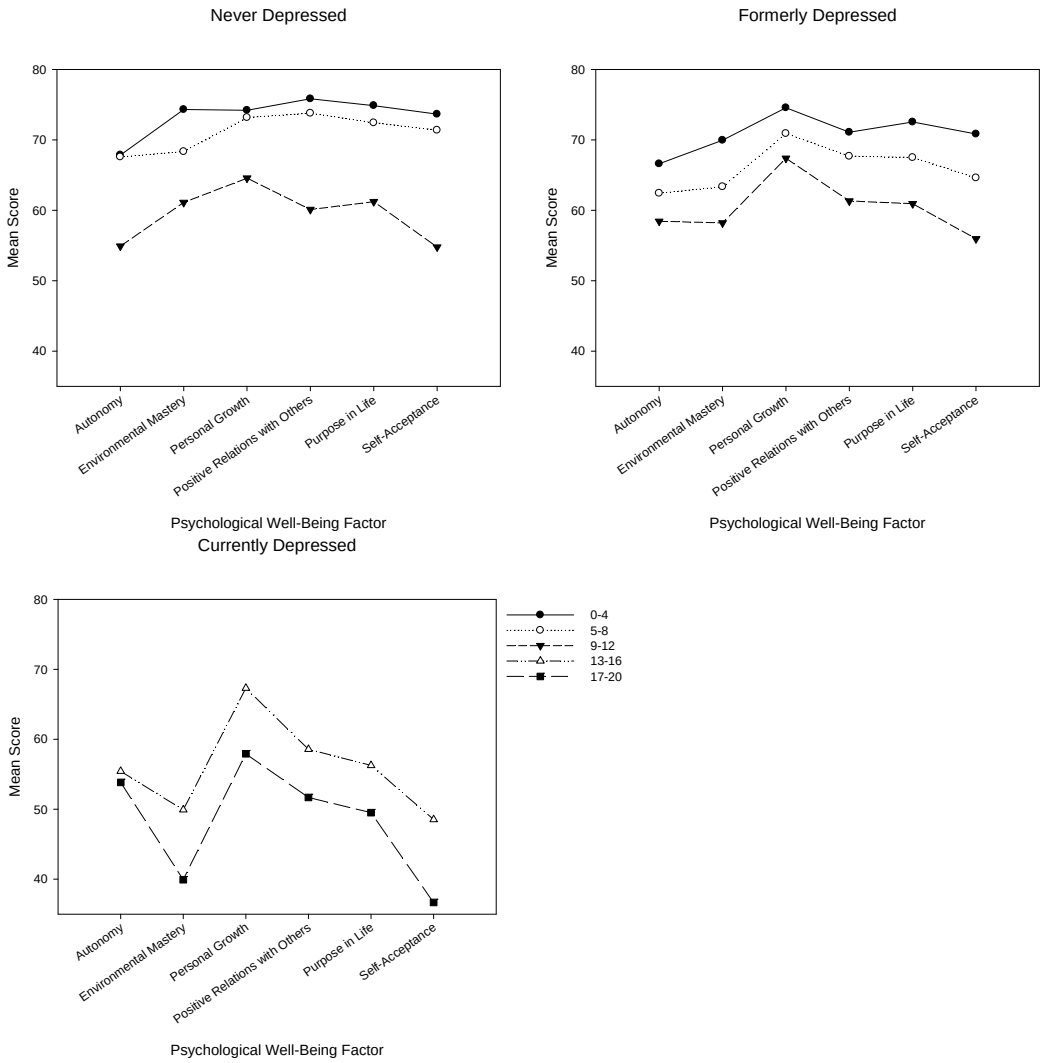


Figure 51. Psychological Well-Being by EDS Category According to Depression Status at Time 2.

As before, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. However, it would again appear that some of the factors are affected more by declining mood than others according to whether participants are classified as never depressed or formerly depressed at Time 2. Figure 52 depicts the relative decline in each factor with reference to the 0–4 category in both of these categories. From this figure, it would appear that Self-Acceptance is affected more than the other factors by declining mood, however only in people who are formerly depressed. Lines of best fit were calculated for each factor, with the results presented in Table 59. Again, each equation demonstrates good fit with the data. As can be seen, the slopes for Environmental

Mastery and Self-Acceptance decline at more than twice the rate of Personal Growth in formerly depressed participants, suggesting that these factors are affected substantially more by declining mood. This may be indicative of cognitive scarring with these factors.

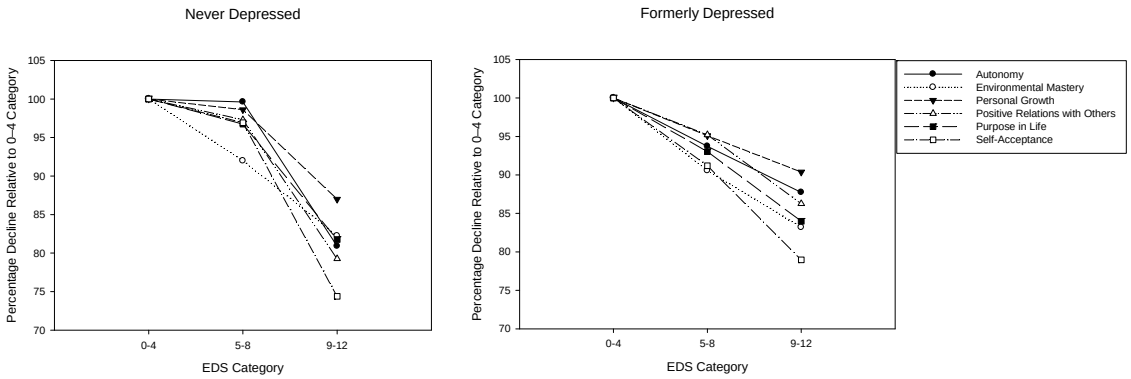


Figure 52. Relative decline in psychological well-being factors as mood declines for participants classified as never depressed and formerly depressed at Time 2. Data points are presented as a percentage of the 0–4 category.

Table 59

Coefficients of the lines of best fit for never depressed and formerly depressed participants for each psychological well-being factor

Factor	Intercept	Slope	r^2
Never Depressed			
Personal Growth	101.70	-6.51	0.83
Autonomy	103.06	-3.58	0.77
Purpose in Life	101.95	-9.12	0.88
Positive Relations with Others	102.56	-4.73	0.85
Environmental Mastery	100.29	-8.88	1.00
Self-Acceptance	103.24	-12.81	0.84
Formerly Depressed			
Personal Growth	99.97	-4.81	1.00
Autonomy	99.95	-6.13	1.00
Purpose in Life	100.34	-8.01	0.99
Positive Relations with Others	100.70	-6.87	0.97
Environmental Mastery	99.66	-8.40	1.00
Self-Acceptance	100.57	-10.52	0.99

Discussion

The analyses for Psychological Well-Being at Time 2 reveal a very similar picture to those of Time 1. There is again some evidence of cognitive scarring, indicated by the finding that participants classified as Never Depressed reported significantly higher scores than those classified as Formerly Depressed. Also, as with the Time 1 analyses, it would appear that Self-Acceptance and Environmental Mastery are most affected by worsening mood as measured by the EDS. However, when the relative decline of participants classified as Never Depressed is examined, it appears that there is a substantial degradation of all factors as EDS scores increase (see Figure 52). When compared to the substantially linear fashion in which Psychological Well-Being for participants classified as Formerly Depressed degrades, this may indicate that the Never Depressed displayed a degree of resilience in the face of a worsening mood, and

that a substantial impact on their Psychological Well-Being only becomes apparent when EDS scores approach Borderline Depression. Again, the analyses also indicate that Self-Acceptance and Environmental Mastery are most affected by increasing EDS scores (see Figure 50).

Social Well-Being

Four hundred and nine participants provided information regarding their social well-being. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. Figure 53 depicts social well-being at Time 2. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels on each of the scales. The assumption of homogeneity of variance was violated for Social Actualisation. The analysis revealed that students reported significantly lower levels of social well-being than the maternity sample on Social Coherence, $F(1, 407) = 4.02$, $p < .05$, Social Integration, $F(1, 407) = 6.90$, $p < .05$, Social Acceptance, $F(1, 407) = 10.71$, $p < .05$ and Social Actualisation, $F(1, 400.88) = 7.04$, $p < .05$.

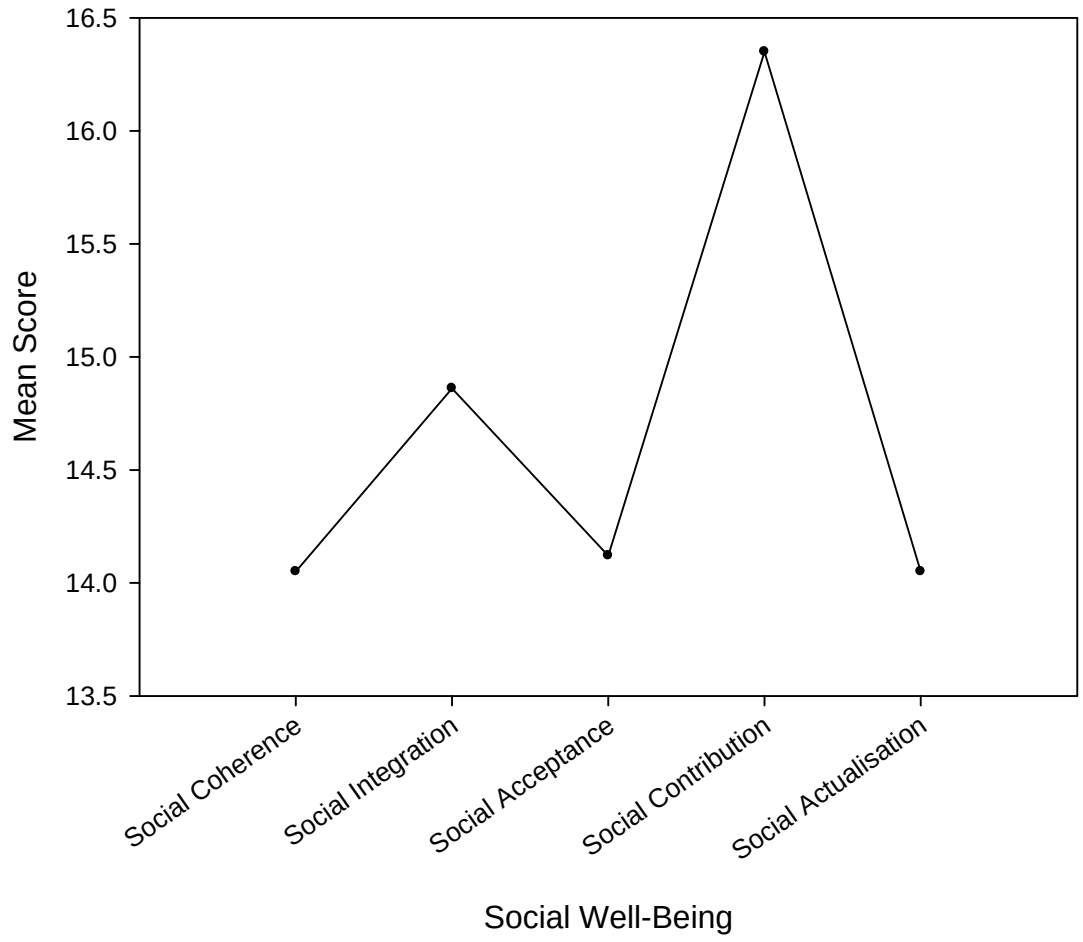


Figure 53. Social Well-Being at Time 2.

A one-way ANOVA was conducted in order to determine whether social well-being differed according to whether participants were categorized Not Depressed, Borderline Depression, or Depressed according to the EDS. The assumption of homogeneity of variance was violated for Social Contribution. The analysis revealed a main effect of depression category for Social Coherence, $F(2, 406) = 19.56$, $p < .05$; Social Integration, $F(2, 406) = 29.38$, $p < .05$; Social Acceptance, $F(2, 406) = 14.90$, $p < .05$; Social Contribution, $F(2, 67.87) = 37.34$, $p < .05$; and Social Actualisation, $F(2, 406) = 21.68$, $p < .05$. Post-hoc tests revealed that participants classified as Not Depressed reported significantly higher scores than participants who were classified as either Borderline Depression or Depressed on all factors except Social Actualisation, where there was no significant difference between participants classified as Not

Depressed or Borderline. Participants classified as experiencing Borderline Depression reported significantly higher scores than those classified as Depressed on Social Contribution and Social Actualisation.

A further distinction that can be made between people in terms of their depression status is whether they can be considered Never Depressed or Formerly Depressed. That is, whether it is likely that they have experienced depression at some time in their life even though they would not currently be considered to be depressed. For only those people whose EDS score did not fall into the Depressed range, they were classified as formerly Depressed if they answered 'yes' to any of the questions. For Time 2 it was necessary to take into consideration changes in participant depression status. Table 60 shows how the classification was determined with respect to these changes.

Table 60

Time 2 depression status classification

EDS Classification Change	Depression Status
Stayed Not Depressed	Time 1 Classification
Stayed Borderline	Time 1 Classification
Stayed Depressed	Time 1 Classification
Not Depressed to Borderline	Time 1 Classification
Not Depressed to Depressed	Currently Depressed
Borderline to Depressed	Currently Depressed
Depressed to Borderline	Formerly Depressed
Depressed to Not Depressed	Formerly Depressed
Borderline to Not Depressed	Time 1 Classification

A one-way ANOVA was conducted in order to determine whether social well-being differed in terms of these classifications. The assumption of homogeneity of variance was violated for Social Integration, Social Contribution, and Social Actualisation. The analysis revealed a main effect of depression category for Social Coherence, $F(2, 406) = 11.33$, $p < .05$; Social Integration, $F(2, 139.39) = 29.25$, $p < .05$; Social Acceptance, $F(2, 406) = 14.99$, $p < .05$; Social Contribution, $F(2, 133.40) = 30.87$, $p < .05$; and Social Actualisation, $F(2, 138.21) = 19.94$, $p < .05$. Post-hoc testing revealed

that participants classified as Currently Depressed reported significantly lower scores than those classified as either Never Depressed or Formerly Depressed for all factors. Participants classified as Never Depressed reported significantly higher scores than those classified as Formerly Depressed for Social Integration and Social Acceptance. Participants classified as Formerly Depressed reported significantly lower scores than those classified as Currently Depressed on all factors.

In order to determine the impact of decreasing mood on social well-being, each participant's EDS score was classified according to a hierarchy. Using the EDS cut-off for depression of 12 as a reference point, the range of scores was classified into seven categories. These were: 0–4, 5–8, 9–12, 13–16, 17–20, 21–24, and 25–30. These category sizes were chosen in order to be smaller than what is considered to be a clinically significant change on the EDS of 5 points (see page 123). Because there are 31 possible scores on the EDS, it was not possible to construct categories of equal size. Consequently, the lowest category was constructed from 0–4 because it was considered that scores this low would be unlikely to show any substantial differences between one another, as was the case with the 25–30 category. Table 61 shows the number of participants in each category. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 54 portrays the relative profiles of each category for all social well-being factors.

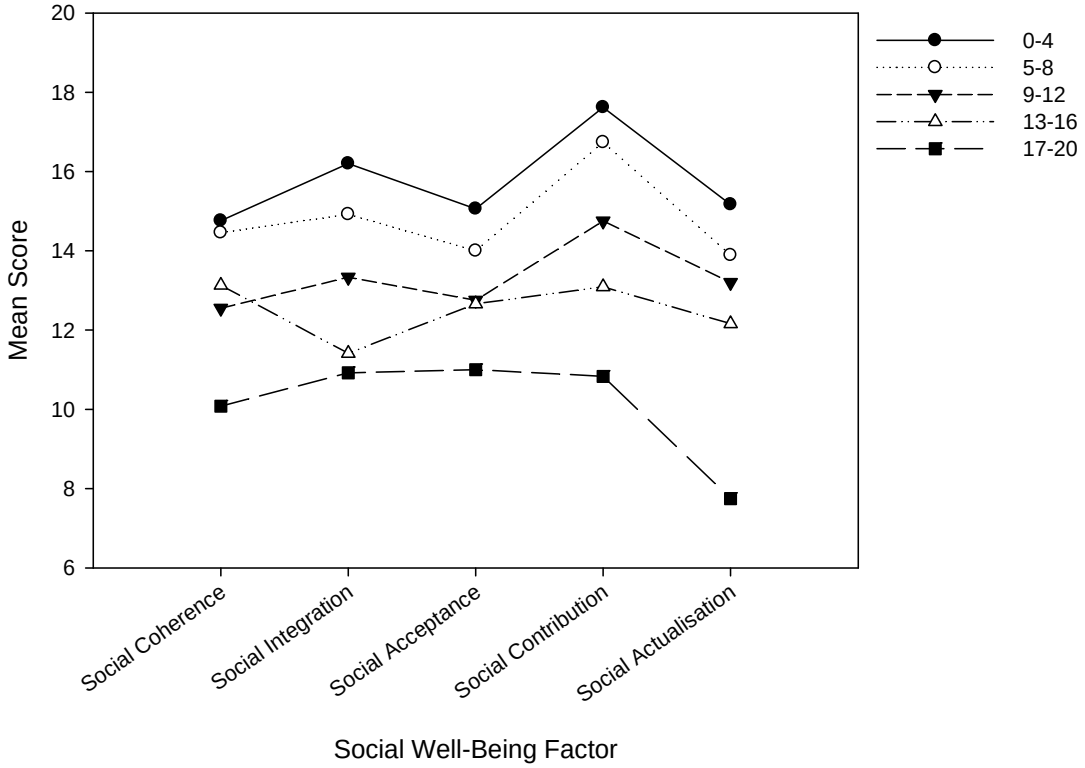


Figure 54. Social Well-Being by EDS Category at Time 2.

Table 61

Number of participants in each EDS hierarchy category at Time 2 for social well-being

Category	Number of Participants
0–4	201
5–8	105
9–12	51
13–16	32
17–20	12
21–24	7
25–30	1

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced social well-being. The assumption of homogeneity of variance was violated for Social Acceptance. The results indicated a main effect of EDS category for Social Coherence, $F(4, 396) = 10.15$, $p < .05$; Social Integration, $F(4, 396) =$

14.68, $p < .05$; Social Acceptance, $F(4, 61.72) = 13.80$, $p < .05$; Social Contribution, $F(4, 396) = 26.54$, $p < .05$; and Social Actualisation, $F(4, 396) = 16.08$, $p < .05$. Post-hoc testing revealed that with regard to Social Coherence, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in the 9–12 and 17–20 categories; participants in the 5–8 category were found to have significantly higher scores that those in the 9–12 and 17–20 categories; and participants in the 13–16 category were found to have significantly higher scores than those in the 17–20 category. With regard to Social Integration, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in the 13–16 and 17–20 categories; and participants in the 9–12 and 13–16 categories were not significantly different to those in any higher category. With regard to Social Acceptance, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories except 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in the 17–20 category; and participants in the categories 9–12 and13–16 were not significantly different from those in any higher category. With regard to Social Contribution, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories with the exception of 5–8; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories; participants in the 9–12 category were found to have significantly higher scores than participants in the 17–20 category; and participants in the 13–16 category were not found to be significantly different to those in the 17–20 category. With regard to Social Actualisation, participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories; and participants in the 5–8, 9–12, and 13–16 categories were found to have significantly higher scores than those in the 17–20 category.

A visual examination of the profiles displayed in Figure 54 suggests that the relativities change as mood decreases. Apart from the apparent general decrease in social well-being as mood decreases (indicated by vertical separation of the

categories), it appears that Social Actualisation is affected to a greater degree than others. In order to examine these patterns, paired-samples *t*-tests were conducted between each social well-being factor for each category. In order to control for Type I error, the alpha level for each comparison was adjusted. Since there are 10 possible comparisons of the six factors, the adjusted alpha level was set at .005. For the 0–4 category, significant differences were found for Social Coherence–Social Integration, Social Coherence–Social Contribution, Social Integration–Social Acceptance, Social Integration–Social Contribution, Social Integration–Social Actualisation, Social Acceptance–Social Contribution, and Social Contribution–Social Actualisation. For the 5–8 category, significant differences were found for Social Coherence–Social Contribution, Social Integration–Social Contribution, Social Acceptance–Social Contribution, and Social Contribution–Social Actualisation. For the 9–12 category, significant differences were found for Social Coherence–Social Contribution, Social Acceptance–Social Contribution, and Social Contribution–Social Actualisation. No significant differences were found in either the 13–16 or 17–20 categories.

In order to determine whether Social Actualisation was affected by decreasing mood more than the other social well-being factors, all factors were rank-ordered based on the range between lowest and highest category means. This confirmed that the greatest difference between the 0–4 category and the 17–20 category was for this factor (see Table 62 for a comparison of the ranges of all factors). As with Time 1 data, post-hoc tests from the one-way ANOVA were examined in order to ascertain whether statistical support could be found for Social Actualisation being affected more than the other factors. For Social Coherence, significant decreases were found between 5–8 and 9–12, and 13–16 and 17–20. With regard to Social Integration and Social Acceptance, no category was significantly lower than the one before it, indicating minimal change as mood progressively decreases. With regard to Social Contribution, significant decreases were found between 5–8 and 9–12. With regard to Social Actualisation, significant decreases were found between 0–4 and 5–8, and 13–16 and 17–20. As such, it would appear that Social Acceptance was least affected, while Social Coherence was most affected by incrementally decreasing mood.

Table 62

Range of mean social well-being scores for each factor according to EDS hierarchy category at Time 2

Factor	Range
Social Acceptance	4.06
Social Coherence	4.68
Social Contribution	6.79
Social Actualisation	7.42
Social Integration	5.28

Even though each factor forms part of a construct known as social well-being, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. As such, any change observed may merely reflect the properties of the variables. Nevertheless, it would appear that some of the factors are affected more by declining mood than others. Figure 55 depicts the relative decline in each factor with reference to the 0–4 category. In this figure, each category is presented as a percentage of the 0–4 category. For example, the mean score for Social Coherence in the 17–20 category is 68.29% of that for the 0–4 category. From this figure, it would appear that Social Actualisation is affected more than the other factors by declining mood, although this does not appear to become markedly different until the 17–20 category. Lines of best fit were calculated for each factor, with the results presented in Table 63. Each equation demonstrates good fit with the data. As can be seen, the slopes for Social Actualisation and Social Contribution decline at a greater rate than the other three factors, suggesting that these factors are affected substantially more by declining mood. Indeed, it seems clear that the general effect is one of declining social well-being as mood declines, with some factors affected more than others.

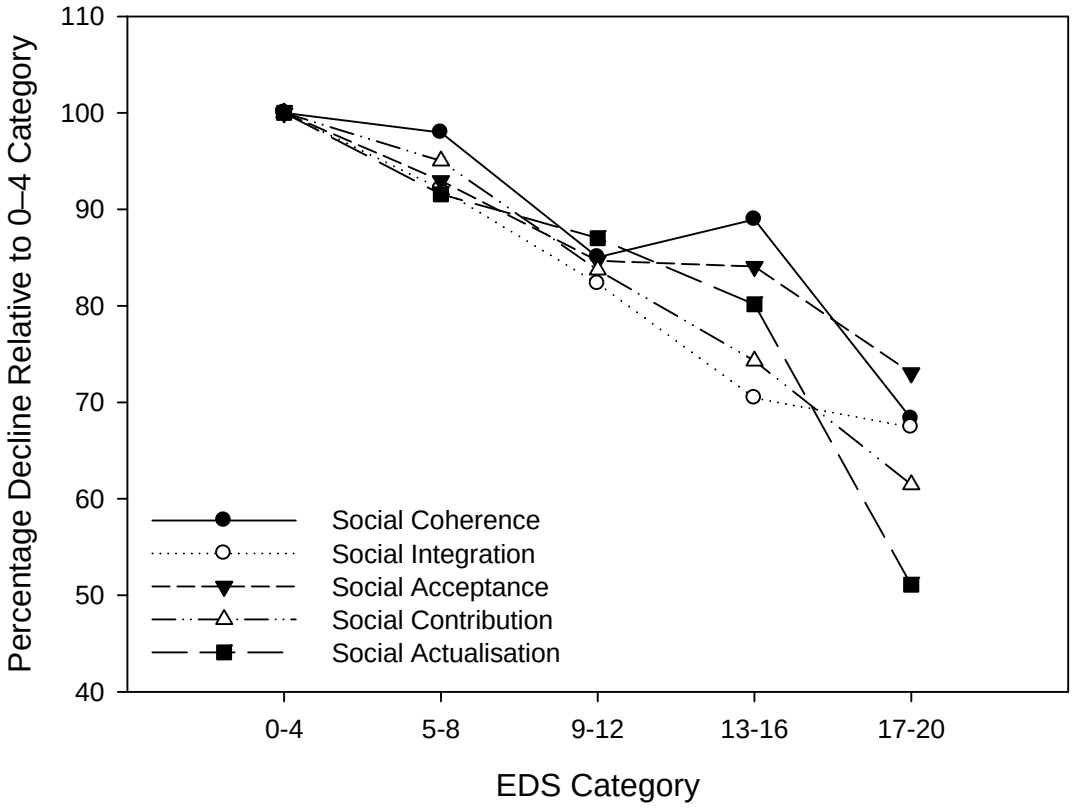


Figure 55. Relative decline in social well-being factors at Time 2 as mood declines. Data points are presented as a percentage of the 0–4 category.

Table 63

Coefficients of the lines of best fit for each social well-being factor at Time 2

Factor	Intercept	Slope	r^2
Social Coherence	102.53	-7.24	0.82
Social Integration	99.81	-8.69	0.98
Social Acceptance	99.51	-6.28	0.95
Social Contribution	102.45	-9.78	0.98
Social Actualisation	103.81	-10.92	0.85

In order to examine whether previous episodes of depression might differentially influence social well-being (similar to the concept of cognitive scarring with depressive cognitions, Rohde, et al., 1990), participants were assessed according to whether they were classified as never having been depressed, formerly depressed

(i.e., at least one episode of depression in their life, but not currently depressed), or currently depressed. Figure 56 depicts social well-being according to each of these classifications, augmented by a further classification according to EDS category. A one-way ANOVA was conducted in order to determine whether there were any significant differences between participants' depression status (never depressed, formerly depressed, or currently depressed) in terms of social well-being factors. The assumption of homogeneity of variance was violated for all factors except Autonomy. The ANOVA revealed a main effect of depression status for all factors: Autonomy, $F(2, 571) = 33.64$, $p < .05$; Environmental Mastery, $F(2, 260.80) = 140.21$, $p < .05$; Personal Growth, $F(2, 259.18) = 22.65$, $p < .05$; Positive Relations with Others, $F(2, 256.15) = 74.76$, $p < .05$; Purpose in Life, $F(2, 257.00) = 61.31$, $p < .05$; and Self-Acceptance, $F(2, 255.07) = 121.34$, $p < .05$. Post-hoc testing revealed that people classified as currently depressed reported significantly lower scores than either never depressed or formerly depressed on all factors. They further revealed that participants classified as never depressed reported significantly higher scores on all factors with the exception of Autonomy and Personal Growth. These findings suggest that at least one previous depressive episode reduces social well-being in the longer term.

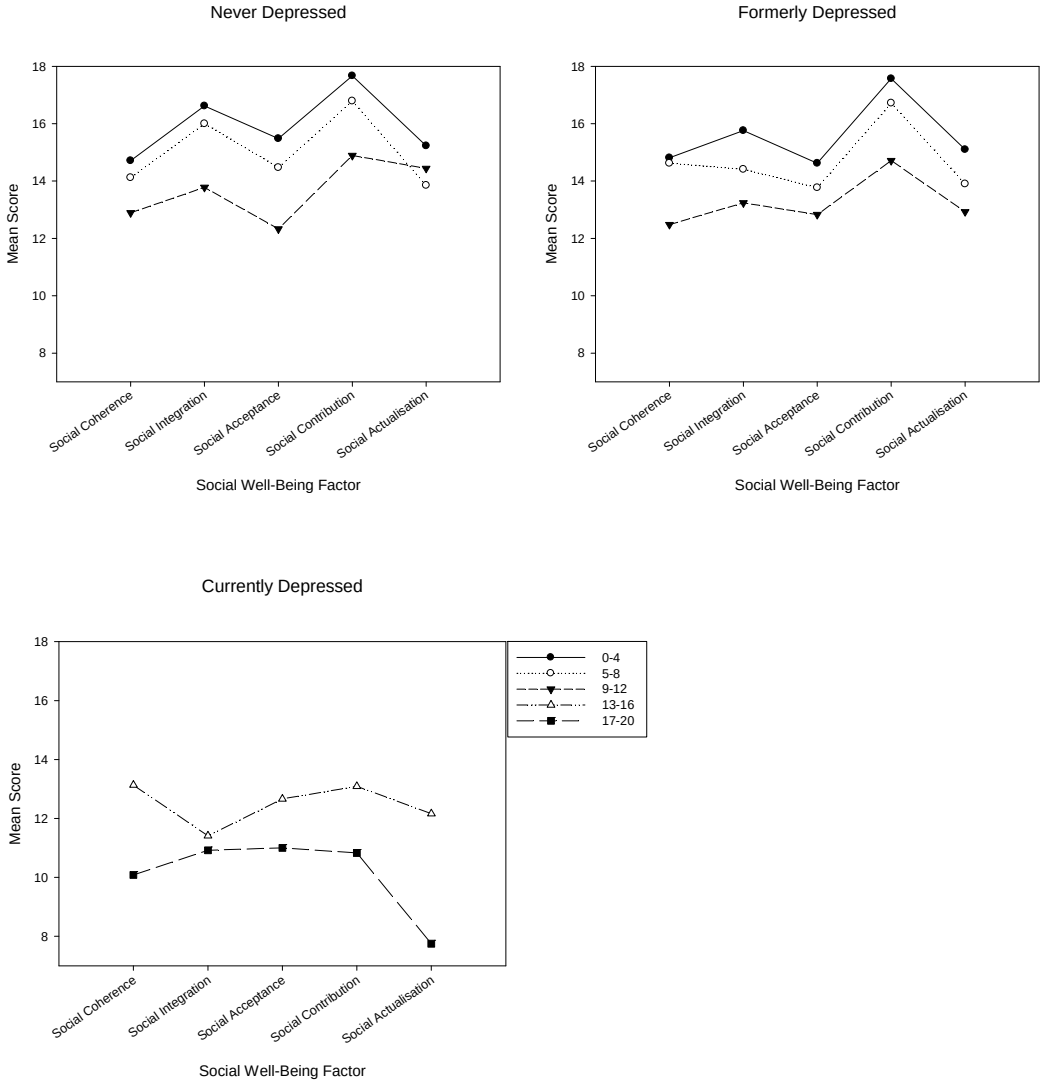


Figure 56. Social well-being at Time 2 by EDS Category According to Depression Status.

As before, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. However, it would again appear that some of the factors are affected more by declining mood than others according to whether participants are classified as never depressed or formerly depressed. Figure 57 depicts the relative decline in each factor with reference to the 0–4 category in both of these categories. From the figure, it would appear that Social Integration is affected more than other factors as mood decreases, regardless of the person's classification. It also seems that, with the exception of Social Integration, people classified as never depressed experience a reduction in all factors from the 4–6 category onwards in comparison to the 0–3 category. However, it seems that no significant decline occurs after the 4–6 category. In contrast, people classified as

formerly depressed appear to experience a significant decline in the 10–12 category, which may be evidence of cognitive scarring in the Social Well-Being domain. Also, while Social Integration seems to suffer more than the other factors in either classification, it would also appear that Social Actualisation is on a par with Social Integration for people classified as formerly depressed.

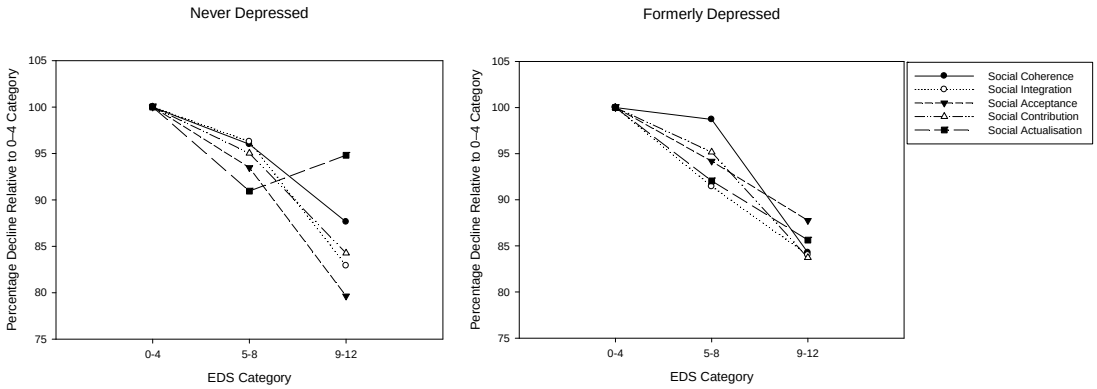


Figure 57. Relative decline in social well-being factors at Time 2 as mood declines for participants classified as never depressed and formerly depressed. Data points are presented as a percentage of the 0–4 category.

Table 64

Coefficients of the lines of best fit for never depressed and formerly depressed participants for each social well-being factor

Factor	Intercept	Slope	r^2
Never Depressed			
Social Coherence	100.73	-6.19	0.96
Social Integration	101.60	-8.54	0.90
Social Acceptance	101.22	-10.17	0.96
Social Contribution	100.96	-7.87	0.96
Social Actualisation	97.84	-2.59	0.33
Formerly Depressed			
Social Coherence	102.19	-7.87	0.81
Social Integration	99.81	-7.99	1.00
Social Acceptance	100.10	-6.12	1.00
Social Contribution	101.10	-8.14	0.95
Social Actualisation	99.75	-7.19	1.00

Positive and Negative Affect

Four hundred and nine participants provided information regarding the presence of Positive Affect and the absence of Negative Affect. Kolmogorov-Smirnov testing revealed that the data were non-normal, with both scales being negatively skewed, as would be expected with tests of positive psychological functioning. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels on each of the scales. The assumption of homogeneity of variance was violated for the absence of Negative Affect scale. The analysis revealed that students reported significantly lower levels of Positive Affect than the maternity sample, $F(1, 407) = 13.63$, $p < .05$, and significantly lower levels of the absence of Negative Affect, $F(1, 372.86) = 31.68$, $p < .05$.

A one-way ANOVA was conducted in order to determine whether Positive and Negative Affect differed according to whether participants were categorized Not Depressed, Borderline Depression, or Depressed according to the EDS. The assumption of homogeneity of variance was violated for both scales. The analysis revealed a main

effect of depression category for Positive Affect, $F(2, 67.89) = 94.64$, $p < .05$ and the absence of Negative Affect, $F(2, 63.03) = 101.74$, $p < .05$. Post-hoc testing revealed that participants classified as Not Depressed reported significantly higher scores on both factors than participants who were classified as either Borderline Depression or Depressed. Participants classified as experiencing Borderline Depression reported significantly higher scores on both factors than those classified as Depressed.

A further distinction that can be made between people in terms of their depression status is whether they can be considered Never Depressed or Formerly Depressed. That is, whether it is likely that they have experienced depression at some time in their life even though they would not currently be considered to be depressed. For only those people whose EDS score did not fall into the Depressed range, they were classified as formerly Depressed if they answered 'yes' to any of the questions. A one-way ANOVA was conducted in order to determine whether the affect scales differed in terms of these classifications. The assumption of homogeneity of variance was violated for both factors. The analysis revealed a main effect of depression category for Positive Affect, $F(2, 136.80) = 88.17$, $p < .05$, and the absence of Negative Affect, $F(2, 125.56) = 97.45$, $p < .05$. Post-hoc testing revealed that participants classified as Currently Depressed reported significantly lower scores than those classified as either Never Depressed or Formerly Depressed for both factors. Participants classified as Never Depressed also reported significantly higher scores than those classified as Formerly Depressed for both factors.

In order to determine the impact of decreasing mood on psychological well-being, each participant's EDS score was classified according to a hierarchy. Using the EDS cut-off for depression of 12 as a reference point, the range of scores was classified into seven categories. These were: 0–4, 5–8, 9–12, 13–16, 17–20, 21–24, and 25–30. These category sizes were chosen in order to be smaller than what is considered to be a clinically significant change on the EDS of 5 points (see page 123). Because there are 31 possible scores on the EDS, it was not possible to construct categories of equal size. Consequently, the lowest category was constructed from 0–4 because it was considered that scores this low would be unlikely to show any substantial differences between one another, as was the case with the 25–30 category. Table 61 shows the

number of participants in each category. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 58 portrays the relative profiles of each category for both affect factors.

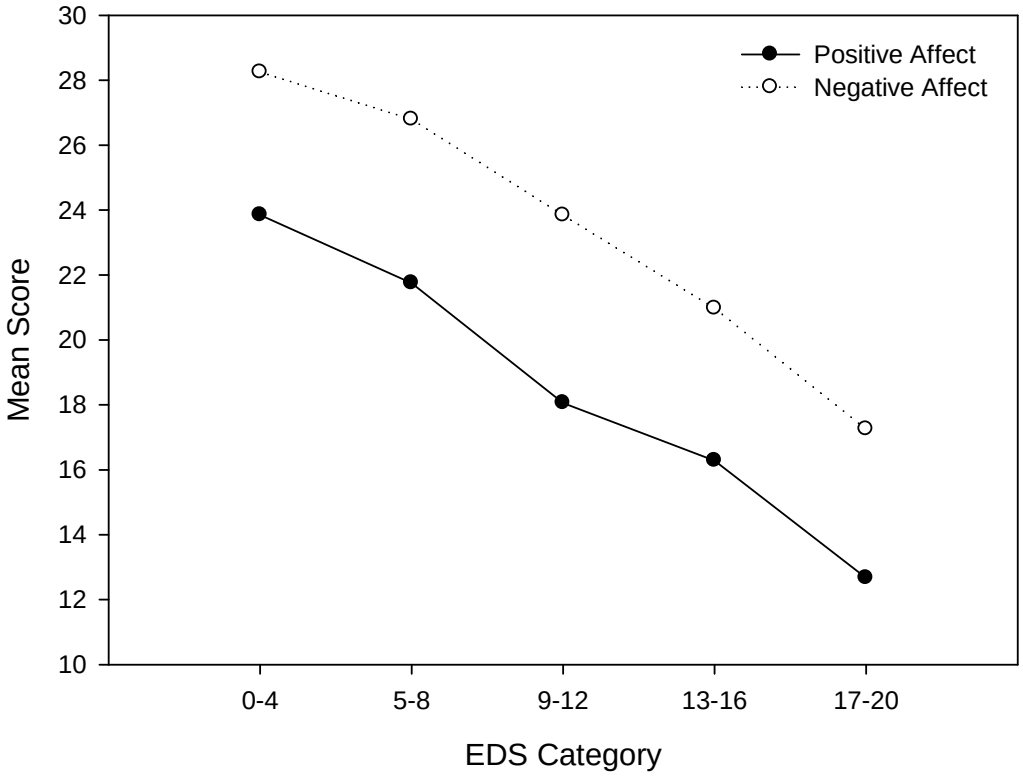


Figure 58. Positive Affect and the absence of Negative Affect by EDS category at Time 2.

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced the affect scales. The assumption of homogeneity of variance was violated for both scales. The results indicated a main effect of EDS category for Positive Affect, $F(5, 58.99) = 76.69$, $p < .05$, and the absence of Negative Affect, $F(5, 55.52) = 84.67$, $p < .05$. Post-hoc testing revealed that with regard to Positive Affect, participants in all categories were found to be significantly different from all other categories with the exception of the 9–12 and 13–16 categories, which were not significantly different from one another. With regard to the absence of Negative Affect, all categories were significantly different from one another.

A visual examination of the profiles displayed in Figure 58 suggests that each categorical decrease in mood has a similar impact for both Positive Affect and the absence of Negative Affect. Indeed, linear regression equations fitted to the data show r^2 values of 0.99 for Positive Affect and 0.98 for the absence of Negative Affect.

Even though each factor forms part of an affect construct, it is not possible to directly compare rates of change across the factors as mood declines because they are essentially different constructs. As such, any change observed may merely reflect the properties of the variables. Nevertheless, it would appear that Positive Affect is affected more by declining mood than the absence of Negative Affect. Figure 59 depicts the relative decline in each factor with reference to the 0–4 category. In this figure, each category is presented as a percentage of the 0–4 category. For example, the mean score for Positive Affect in the 17–20 category is 53.12% of that for the 0–4 category. Lines of best fit were calculated for each factor, with the results presented in Table 65. Each equation demonstrates good fit with the data. As can be seen, the slope for Positive Affect declines at a greater rate than the absence of Negative Affect, suggesting that it is affected more by declining mood.

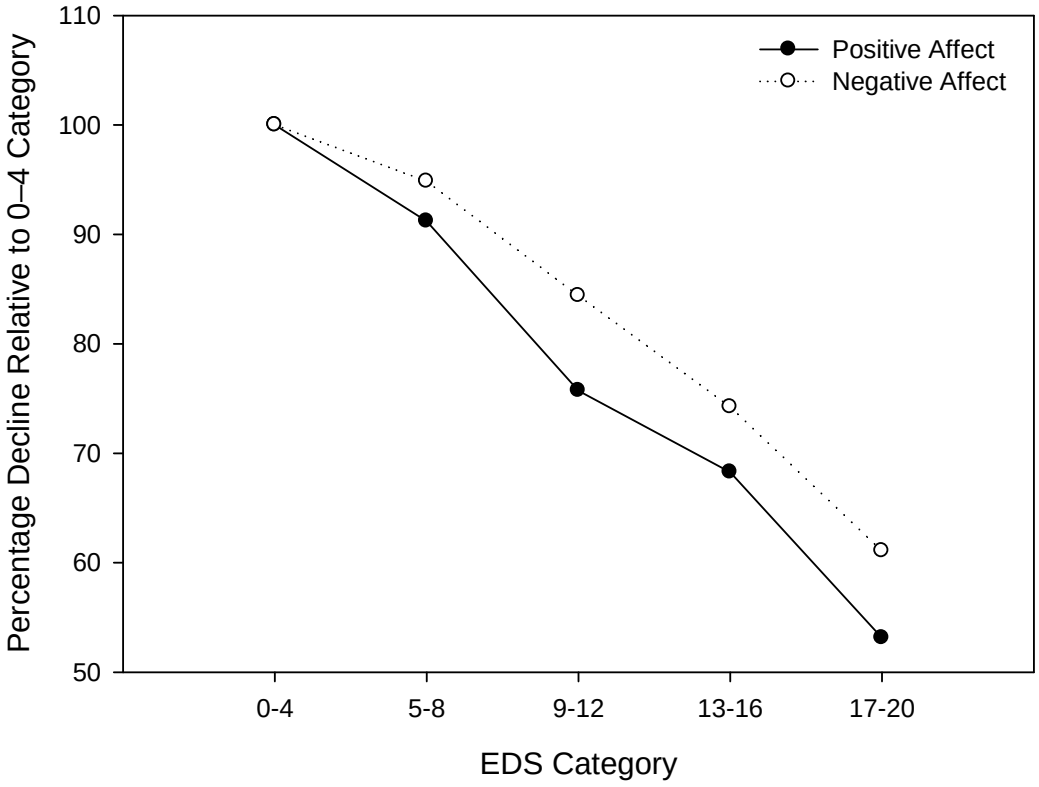


Figure 59. Relative decline in social well-being factors at Time 2 as mood declines. Data points are presented as a percentage of the 0–4 category.

Table 65

Coefficients of the lines of best fit for each psychological well-being factor

Factor	Intercept	Slope	r^2
Positive Affect	101.00	-11.67	0.99
Absence of Negative Affect	102.60	-9.85	0.98

Gratitude

Four hundred and nine participants provided information regarding their level of Gratitude. Kolmogorov-Smirnov testing revealed that the data were non-normal, with all sub-scales being negatively skewed, as would be expected with tests of positive psychological functioning. A one-way ANOVA was conducted in order to determine whether the student and maternity samples reported different levels of

Gratitude. The assumption of homogeneity of variance was met, and the analysis revealed that students (M = 36.23, SD = 5.26) reported significantly lower levels of Gratitude than the maternity sample (M = 37.68, SD = 4.84), $F(1, 407) = 8.41$, $p < .05$.

A one-way ANOVA was conducted in order to determine whether Gratitude differed according to whether participants were categorized Not Depressed, Borderline Depression, or Depressed according to the EDS. The assumption of homogeneity of variance was violated. The analysis revealed a main effect of depression category for Gratitude, $F(2, 65.33) = 22.28$, $p < .05$. Post-hoc testing revealed that participants classified as Not Depressed (M = 37.97, SD = 4.18) reported significantly higher Gratitude scores than participants who were classified as either Borderline Depression (M = 34.85, SD = 5.72) or Depressed (M = 32.27, SD = 6.61). Participants classified as experiencing Borderline Depression did not report significantly higher scores on Gratitude than those classified as Depressed.

A further distinction that can be made between people in terms of their depression status is whether they can be considered Never Depressed or Formerly Depressed. That is, whether it is likely that they have experienced depression at some time in their life even though they would not currently be considered to be depressed. For only those people whose EDS score did not fall into the Depressed range, they were classified as formerly Depressed if they answered 'yes' to any of the questions. A one-way ANOVA was conducted in order to determine whether Gratitude differed in terms of these classifications. The assumption of homogeneity of variance was violated. The analysis revealed a main effect of depression category for Gratitude, $F(2, 128.86) = 20.93$, $p < .05$. Post-hoc testing revealed that participants classified as Currently Depressed (M = 32.38, SD = 6.72) reported significantly lower Gratitude scores than those classified as either Never Depressed (M = 38.52, SD = 4.00) or Formerly Depressed (M = 36.98, SD = 4.67). Participants classified as Never Depressed also reported significantly higher Gratitude scores than those classified as Formerly Depressed.

In order to determine the impact of decreasing mood on psychological well-being, each participant's EDS score was classified according to a hierarchy. Using the EDS cut-off for depression of 12 as a reference point, the range of scores was classified

into seven categories. These were: 0–4, 5–8, 9–12, 13–16, 17–20, 21–24, and 25–30. These category sizes were chosen in order to be smaller than what is considered to be a clinically significant change on the EDS of 5 points (see page 123). Because there are 31 possible scores on the EDS, it was not possible to construct categories of equal size. Consequently, the lowest category was constructed from 0–4 because it was considered that scores this low would be unlikely to show any substantial differences between one another, as was the case with the 25–30 category. Table 56 shows the number of participants in each category at Time 2. For analytical purposes, the categories of 21–24 to 25–30 inclusive were excluded because of the small number of participants in each. Figure 60 portrays the relative profiles of each category for Gratitude. A visual examination of the profiles displayed in Figure 60 suggests that each categorical decrease in mood has a similar impact for Gratitude. Indeed, a linear regression equation fitted to the data shows an r^2 value of 0.94.

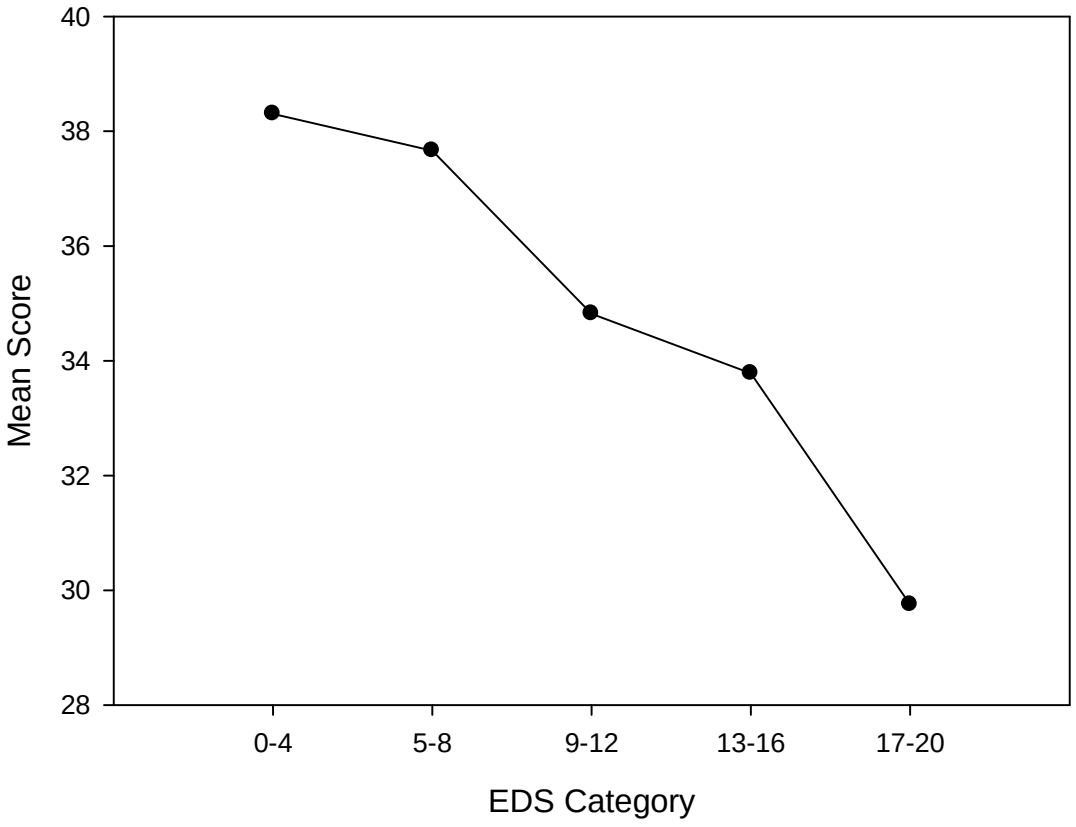


Figure 60. Gratitude by EDS Category.

A one-way ANOVA was used to examine the extent to which these categorical decreases in mood influenced the affect scales. The assumption of homogeneity of variance was violated for both scales. The results indicated a main effect of EDS category for Gratitude, $F(4, 56.84) = 11.49$, $p < .05$. Post-hoc testing revealed that participants with EDS scores in the 0–4 category were found to have significantly higher scores than participants in all other categories with the exception of the 5–8 category; participants in the 5–8 category were found to have significantly higher scores than participants in all higher categories with the exception of the 17–20 category; and participants in the 9–12 and 13–16 categories were not found to be significantly different from any higher category.

Factor Analysis

Principal factors extraction with varimax rotation was performed on the 14 items constituting positive psychological functioning for the 409 participants who provided data at Time 2. Principal components extraction was used prior to principal factors extraction to estimate number of factors, presence of outliers, absence of multicollinearity, and factorability of the correlation matrices. With an $\alpha = .001$ cutoff level, 11 of the 409 participants produced scores that identified them as outliers; these cases were deleted from principal factors extraction. An examination of the correlation matrix indicated that only two of the correlations were less than 0.3. In addition, the KMO measure of sampling adequacy was 0.93, and Bartlett's test of sphericity was large and significant (4,138.26, $p = .00$). These results indicated that the matrix was suitable for factoring. Two factors were extracted, although the scree plot (see Figure 61) suggests that there is one predominant factor. With a cut of .45 for inclusion of a variable in the interpretation of a factor, three of the variables were complex (see Table 66).

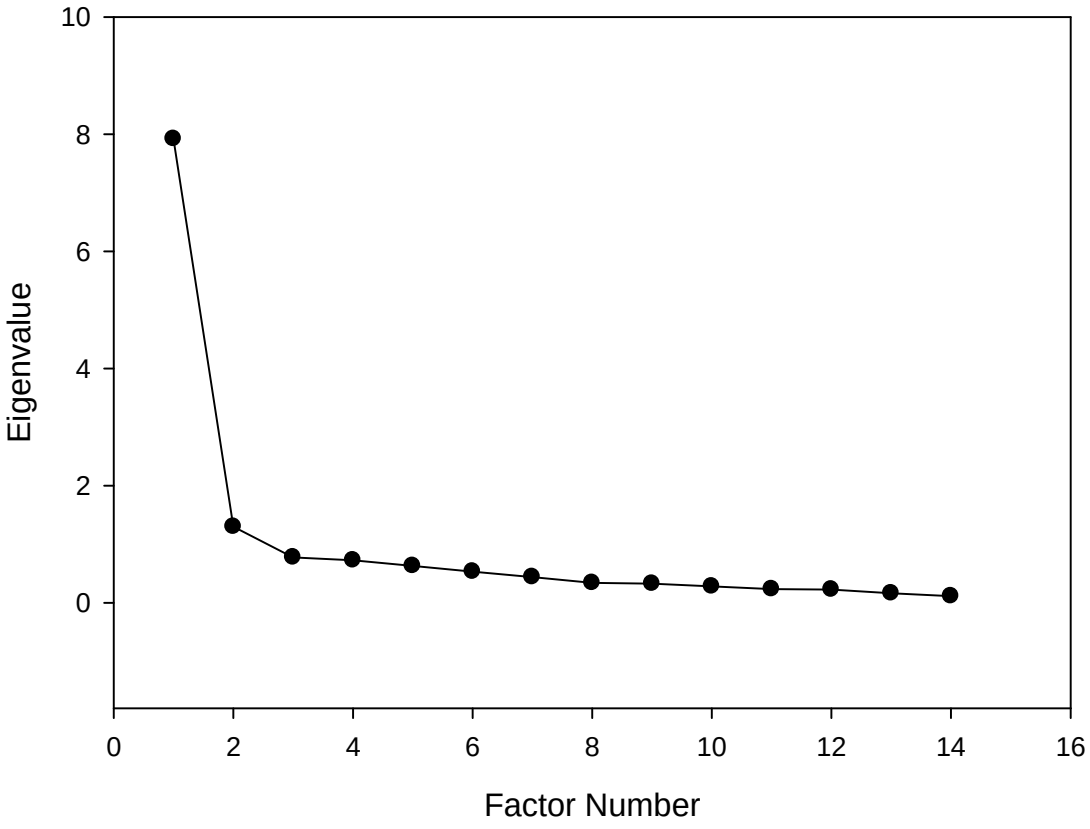


Figure 61. Scree plot for principal factors extraction of positive psychological functioning factors at Time 2.

Table 66

Factor loadings for positive psychological functioning variables at Time 2 – varimax rotation

Variable	Factor 1	Factor 2
Self-Acceptance	.84	
Environmental Mastery	.80	
Purpose in Life	.78	
Positive Affect	.73	
Negative Affect	.70	
Personal Growth	.67	
Positive Relations with Others	.66	.48
Autonomy	.62	
Gratitude	.56	.48
Social Actualisation		.74
Social Acceptance		.68
Social Integration		.66
Social Contribution	.50	.59
Social Coherence		.51

When oblique rotation was requested, factors interpreted as Intrinsic and Extrinsic correlated .66. Furthermore, no complex variables were revealed, and there was a distinction between the social well-being factors and all other variables (see Table 67).

Table 67

Factor loadings for positive psychological functioning variables at Time 2 – oblique rotation

Variable	Factor 1	Factor 2
Self-Acceptance	.88	
Environmental Mastery	.85	
Positive Affect	.81	
Purpose in Life	.81	
Negative Affect	.80	
Autonomy	.69	
Personal Growth	.67	
Positive Relations with Others	.62	
Gratitude	.49	
Social Actualisation		.82
Social Acceptance		.74
Social Integration		.63
Social Coherence		.48
Social Contribution		.48

Chapter 11 – Discussion

The current research sought to examine four questions with regard to positive psychological functioning. Firstly, is there any evidence for the independence of positive psychological functioning and depression? Secondly, can knowledge of a person's positive psychological functioning assist with the prediction of whether that person may be at risk of developing depression? Thirdly, are there differential influences of positive psychological functioning factors with respect to depression? Fourthly, it sought to assess the potential effectiveness of knowledge of positive psychological functioning for the prediction of depression, diagnosis, content and focus of therapy, therapeutic progress, and the development of preventive strategies and techniques. It is apparent from the results that these issues must be answered largely in the negative.

With regard to the independence of positive psychological functioning and depression, despite the indications from the research outlined in the literature review, the results clearly indicate that positive psychological functioning does not appear to be orthogonal or, indeed, separate in any way to depression. Given the clear indications from prior research that positive and negative psychological functioning are separate dimensions, this is somewhat surprising. Indeed, the aspects of positive and negative psychological functioning examined in the current research seem to be linked to the extent that they appear to be opposing poles of a single continuum. Nevertheless, the findings of this strong previous research in a number of domains cannot be ignored, and so it is considered unlikely that the results of the current research demonstrate a single continuum with regard to depression. Rather, the analyses indicate that there is a strong negative correlation between mood and positive psychological functioning with all the measures used, which may be indicative of a differential influence of strong negative mood (as in depression) on positive psychological functioning.

The second question examined by the current research was whether knowledge of a person's positive psychological functioning can assist with the prediction of whether that person may be at risk of developing depression. There were insufficient numbers of participants who made the transition from being not

depressed to depressed to enable a thorough statistical analysis of the factors that might be influencing this transition. In addition, the findings from the first research question indicate that positive psychological functioning and depression are not separate systems. From the specific analyses performed, it seems clear that there is only a marginal utility in knowledge of a person's positive psychological functioning with regard to the later development of depression. As with the first research question, rather than two separate systems influencing each other, the results are suggestive of a continuum. For example, improvements in mood were associated with improvements in psychological well-being, and vice versa. Due to insufficient numbers of participants in some transitional categories, it was not possible to examine whether a causal relationship existed between the two, however in the context of the other findings it seems reasonable to assume that positive psychological functioning and depression are not separate systems.

The third research question considered whether there are differential relationships between positive psychological functioning factors and depression. The results suggest that, in this regard, some of the positive psychological factors are affected less as a person develops depression. For example, Self-Acceptance declined almost three-times faster than Personal Growth, while Social Integration declined almost twice as much as Social Coherence as EDS scores increased. These relativities remained the same across most of the analyses conducted, suggesting that there is indeed a robust differential relationship between the two facets of positive psychological functioning and depression, albeit confined to a limited number of factors. As previously noted, this appears to be consistent with both the various theoretical frameworks seeking to explain depression and the symptomatology outlined in the DSM-IV. Despite the differential effects, then, these findings provide support for the notion that positive psychological functioning and depression are not separate systems. Furthermore, the research reviewed for the current study on this point may be incorrect in its claim that absence of the positive is different to presence of the negative. Rather, presence of the negative appears to have a substantial influence on some positive psychological functioning factors, and in a manner consistent with current theories of depression.

The fourth research question sought to examine the potential effectiveness of knowledge of positive psychological functioning for the prediction of depression, diagnosis, content and focus of therapy, therapeutic progress, and the development of preventive strategies and techniques. The answer to this research question is considered in the following sections.

Bad is Stronger than Good

While the strong negative correlation between mood and positive psychological functioning found in the current research can be interpreted as being indicative of a single continuum, as previously mentioned, the weight of prior research effectively rules this out as a possibility. An alternative view could be that the influence of one of the facets is so strong that it is masking the true nature of the relationship (that they are, in fact, separate systems).

In this regard, depression's strength as a psychological construct beyond its status as a mood disorder may be influencing the results. That is, to the extent that depression is a strongly negatively valenced event, it may be overpowering the influence of positive psychological functioning, almost to the point of irrelevance. One mechanism through which this might occur is the so-called 'negativity bias', which is a tendency for negative events or stimuli to have a greater impact that commensurate positive instances on cognition, affect, and behaviour (Hilbig, 2009).

For example, Baumeister, Bratlavsky, Finkenauer, and Vohs (2001) conducted a review of the literature pertaining to whether negatively valenced events have a greater impact on a person than positively valenced events of the same type, and concluded that "when equal measure of good and bad are present, however, the psychological effects of bad ones outweigh those of the good ones. This may in fact be a general principle or law of psychological phenomena, possibly reflecting the innate predispositions of the psyche or at least reflecting the almost inevitable adaptation of each individual to the exigencies of daily life" (Baumeister, et al., 2001, p. 323). According to this view, then, as a person experiences depression it might be expected that the nature and pervasive influence of the disorder would effectively negate any positive aspects of a person's psyche, stripping them of any substantial influence.

Baumeister et al. (2001) examined a wide range of areas in their review of the literature, including: reacting to events, close relationships, other relationships and interactions, emotion, learning, child development, social support, information processing, memory, stereotypes, forming impressions, self, feedback, and health. While the number of areas examined by Baumeister et al. is impressive and provides strong support for their findings that 'bad' is indeed stronger than 'good', the areas of reacting to events, are considered to be the most relevant for the current research to consider, and the research highlighted in their review was used to inform the discussion of the findings of the current research.

An illustration of this is provided by research reported by Brickman, Coates, and Janoff-Bulman (1978), who compared three groups of people: a sample of lottery winners, a sample of paralysed accident victims, and a control sample of people who had not experienced either event. Brickman et al. found that people who had won the lottery were not significantly happier than either of the other two groups, with their initial euphoria returning to the levels experienced before their good fortune (referred to as adaptation-level effects). That is, this group of people appeared to quickly adapt to their new circumstances and incorporate them to the extent that their good fortune did not particularly influence their daily lives. Indeed, as noted by Baumeister et al. (2001), perhaps the lasting effect of winning the lottery was a negative one, since these people reported being unable to enjoy so-called ordinary pleasures as much as before the win. In examining the group who had experienced some form of paralysis following an accident, Brickman et al. found that these people were slower to adapt to this negative event, and also reported being significantly less happy than the control sample. Brickman et al. reported an apparent 'nostalgia effect', where the accident victims compared their current circumstances to their life before the accident, which may have served to maintain this group's lower level of reported happiness. As such, it would appear that this is an instance where a negative event has a more powerful impact than a positive event, with a consequent pervasive negative impact on a person's psychological functioning.

Perhaps of particular relevance to the current research is a study by Wells, Hobfoll, and Lavin (1999) that examined the gains and losses of women early in their pregnancy, and examined whether these were good predictors of post-partum

depression and anger. Their hypothesis that resource losses would be better predictors than resource gains was supported, with gains in resources having no significant effect, while resource losses had a significant effect on postpartum anger. In addition, Wells et al. found that women who experienced loss earlier in their pregnancy were more vulnerable to later loss. As Baumeister et al. (2001) note, this suggests a "snowballing effect of consecutive bad outcomes" (p. 326). As such, it again appears that positive events had little or no effect on a person's life, while negative events seem to have a significant impact, and may even operate cumulatively. Baumeister et al. highlight the impact of bad events in a similar way to that noted by Wells et al., concluding that people appear to respond more strongly to bad events than to good events, in that "bad events produce more emotion, have bigger effects on adjustment measures, and have longer lasting effects" (p. 328).

With regard to the construct of emotion itself, Baumeister et al. (2001) note a number of studies highlighting the greater influence of negative emotions and moods. Esses and Zanna (1995) conducted a series of four studies examining the influence of negative mood on the application of unfavourable stereotypes to certain ethnic groups. Esses and Zanna found that a negative mood is especially likely to result in people describing ethnic groups in terms of unfavourable characteristics, regardless of the type of mood induction applied or participant group. Indeed, only when a negative mood induction was employed did the stereotypes applied differ significantly from the baseline of participants in a neutral mood. As Baumeister et al. note, when the good and bad moods were equidistant from the neutral control, bad moods were found to have a stronger effect.

Similarly, Finkenauer and Rimé (1998) investigated emotional events that are shared with others versus those that are kept secret. When asked to recall such events, people recalled significantly more bad events than good events (some four times more, in fact), thus suggesting that people's recall for emotional events favours negative ones. As Baumeister et al. (2001) note, this is suggestive of bad emotions remaining more salient in people's minds than events that produce good emotions.

Finally, Beck's (1987) structural model states that certain negatively biased schemas become markedly more relevant as a person develops depression, thus

changing cognitive processes to produce a systematic bias in data abstraction, interpretation, and both short-term and long-term memory. This would appear to be consistent with the theory that bad is stronger than good, particularly in the context of Beck's assertion that a person experiencing depression displays deficits in both the initial assessment of the information he or she receives, along with interpretive deficits regarding feedback on his or her behaviour. In this way, the author considers that a degenerative feedback system may exist that contributes to 'bad' becoming stronger more rapidly than 'good' as depression increases.

Additionally, Rozin and Royzman (2001) examined whether there exists a general bias that gives greater weight to negative events, objects, and personal traits. Rozin and Royzman proposed four aspects of the negativity bias: negative potency, greater steepness of negative gradients, negativity dominance, and greater negative differentiation. Their principle of negative potency holds that negative events are subjectively more potent and therefore of higher salience than positive events of equal magnitude. Negative events are also thought to grow more rapidly in negativity than do positive events (the principle of greater steepness of negative gradients), while "the holistic perception and appraisal of integrated negative and positive events (or objects, individuals, hedonic episodes, personality traits etc.) is more negative than the algebraic sum of the subjective values of those individual entities" (Rozin & Royzman, 2001, p. 298) (the principle of negativity dominance). Finally, the principle of greater negativity differentiation holds that negative stimuli are generally seen as being more elaborate and differentiated than positive stimuli of equal valence. Evidence was noted supporting these principles in a wide range of domains. Further, Rozin and Royzman propose that negative events possess a higher potential for contagion than positive events. That is, negative events may generalise more to neighbouring domains, as well as being more resistant to elimination, thus making them perhaps more salient to a person's life in general than positive events.

There is also evidence for an immediacy bias with regard to emotions. Van Boven, White, and Huber (2009) found that people tend to perceive their immediate emotions as being more intense than previously experienced emotions, and that this bias is quite pervasive – emerging across different materials, procedures, and emotions. Moreover, they found that this bias occurs for both positive and negative

(but not neutral) stimuli. If so, a person's experience of depression may be self-referential. That is, a person's experience of depression may amplify both real and perceived negative experiences and emotions, perhaps to the point of inducing despair and loss of hope. Further, this may also be an influencing factor in the notion of contagion raised by Rozin and Royzman (2001), and may be a mechanism through which negative cognitions, affect, and events generalise to neighbouring domains in a person's psyche. Van Boven, White, and Huber also note that there does not appear to be a negativity bias in relation to the greater intensity of immediate emotions and that, as such, the experience of an immediate positive event may mitigate the tendency to report more intense emotional reactions to negative stimuli.

Consequently, it seems clear that a negative emotional state such as depression is so strong as to essentially overwhelm any influence of positive psychological functioning (Baumeister, et al., 2001; Rozin & Royzman, 2001). Moreover, it would appear that the impact of negative emotional states such as depression is self-referential, with the immediacy bias serving to both influence a person's interpretation of events in a negative way, as well as to amplify a person's depressive state (Van Boven, et al., 2009).

If negative emotional states are so much stronger than positive emotional states, the fact that most of the population does not appear to be experiencing these negative emotional states begs the question of how and why positive emotional states can overcome negative emotional states. Diener and Diener (1996) noted that human beings appear to have a positive affective set-point (despite bad apparently being stronger than good), and proposed theoretical considerations that might account for why this is so. Their first proposal is that negative events are more prominent if they appear as part of a wider landscape of positivity, thus allowing negative events to be noticed more quickly and assessed appropriately. Diener and Diener also propose that an overall positive state is important for motivational reasons. In order to obtain a wide range of survival necessities, they state that human approach tendencies must prevail. Since positive affective states facilitate approach tendencies, they consider it desirable for people to experience a positive mood, on average.

The idea that optimal mental health requires a high ratio of positive to negative experiences was examined by Fredrickson and Losada (2005), as an extension to Fredrickson's (1998) 'Broaden and Build' theory. Fredrickson and Losada sought to determine the characteristics of participants defined as being in flourishing mental health with regard to their mean ratio of positive to negative affect.

Developmental Considerations

Given the strong and pervasive influence of the negativity bias, it might be expected that it would have a developmental trajectory, which indeed appears to be the case. For example, in the domain of social referencing, Hornik, Risenhoover, and Gunnar (1987) examined the effects of maternal communications on infant responses to ambiguous toys. They examined positive, neutral, and negative displays of emotions by the mothers, and found that these did influence the infants' responses to the toys in accordance with the emotion displayed. While the infants' responses did not differ for the neutral and positive emotional conditions, infants in the negative (disgust) condition played less with the ambiguous toy.

Hertenstein and Campos (2001) considered whether positive, neutral, and negative tactile cues given by mothers could influence the behaviour of twelve-month old infants to ambiguous toys. The mothers were asked to relax their grip (positive condition), tense their fingers (negative condition), or apply constant pressure (neutral condition) as a toy was presented. As with Hornik et el. (1987), Hertenstein and Campos found the negative condition had a greater effect on the infants' behaviour than the positive and neutral conditions. Infants in the negative condition took longer to interact with the toy, and touched it less often than those in the neutral condition, while the behaviours were no different across the positive and neutral conditions.

This negativity bias in social referencing has also been noted in older children. Walden (1993) examined whether an experimenter telling children whether they could expect to see something positive, scary, or neutral (or were not given any information) when they opened a box. Walden found that, for children as young as two years, being told that the contents of the box would be frightening essentially eliminated all proximal behaviour toward the stimulus. The other three conditions of positive, neutral, and control were equivalent in all aspects of the children's behaviour.

It would appear that the research indicates that negative cues have a more immediate and significant impact than positive or neutral cues, thus suggesting that a negativity bias is present from the earliest stages of child development, at least within the domain of social referencing. There are also indications that the negativity bias is pervasive across wider developmental domains. For example, Lagattuta and Wellman (2002) examined whether the quality and content of parent-child communications about negative emotions are different from their everyday talk about positive emotions. Lagattuta and Wellman found that there was no significant difference between the number of positive and negative words used when the children were younger than three years. However, after three years the number of unique negative words being used almost doubles, while the number of positive words remains the same. In addition, Dunn, Bretherton, and Munn (1987) found that children between 18 and 24 months mainly discussed themes of distress, pain, and fatigue with their mothers, and that by their third year 51.2% of the children's casual conversation focused on a 'distress' theme, while only 7.3% of their conversations focused on a theme of pleasure or liking. Thus, as with social referencing, it would also appear that children's discourse is indicative of a negativity bias.

Children not only discuss and recall negative emotional events more frequently, they also appear to display greater socio-cognitive skills while doing so. For example, Lagattuta and Wellman (2002) found that children discussed the causes of emotions, asked open ended questions, and talked about past affective experiences with greater frequency when talking about negative as opposed to positive emotions. In addition, they also focused more on the relationships between negative emotions and other mental states than positive emotions. This appears to be related to the causal precursors of negative and positive emotions, with Lagattuta and Wellman (2001) finding that 3 to 7-year-old children use a person's past experiences to explain a current negative emotional state more than they did to explain any current positive emotions. The children also referred more frequently to a person thinking about the past when experiencing a negative versus a positive emotion.

The implication of Lagattuta and Wellman's (2001, 2002) studies that there exists a negativity bias in children's memories is supported by Fivush, Hazzard, Sales,

Sarfati, and Brown (2003). Fivush et al. found that children displayed more sophisticated sociocognitive skills when discussing and remembering negative emotions and events. Children between 5 and 12 years of age recalled negative events with greater coherence and with more focus on internal states than positive events. Conversely, they reported more descriptive details, objects, and persons when recalling positive versus negative events.

Consequently, it would appear that the negativity bias is a robust and pervasive aspect of human psychology that seems to exist from at least 12 months of age. This would seem to imply that the negativity bias is a significant and important aspect of the human psyche. Indeed, it is thought to be an evolutionarily adaptive process that helps humans to safely explore our environment while minimising the risk of being exposed to harm (Cacioppo, Gardner, & Berntson, 1997, 1999).

Cacioppo et al. (1997, 1999) propose that there are two significant aspects of the human affect system. The first aspect is the 'positivity offset', which suggests that when there is no affective information available about a novel stimulus humans will display a weak drive to approach that stimulus. Cacioppo et al. (1997, 1999) believe that this positive offset provides the motivation for humans to learn about our environment by approaching novel stimuli, as well as promoting social cohesion. Furthermore, Cacioppo et al. (1997, 1999) state that because the consequences of a harmful or fatal event are harder to reverse than those of simply missing an opportunity to interact with the environment, the affective system also displays a negativity bias that causes us to react more strongly to negative rather than positive or neutral stimuli. Cacioppo (1999) also argues that while negative emotions serve to prompt mental or behavioural adjustments, positive emotions indicate that it is safe to pursue the intended course of action, regardless of whether the course of action is to approach the stimulus or avoid it. As such, positive information may not necessarily increase approach behaviours – it may simply allow a confirmation of the original intended behaviour. Vaish, Grossman, and Woodward (2008) argue that the existence of the negativity bias in early development serves evolutionarily adaptive functions. That is, the early development of a negativity bias allows the child to learn that it should avoid aversive stimuli (even in a social referencing context), thus improving the child's chances of survival.

Theoretical Considerations

If, indeed, the influence of depression is so great that it can so greatly affect positive psychological functioning, then some insight into the nature of depression might be possible if the various theoretical approaches are considered. The theories of depression considered in the current research can be assessed for their potential impact on positive psychological functioning, and then compared to the results of the various analyses.

With regard to Psychological Well-Being (Ryff, 1989b), a person scoring low on Autonomy, for example, is considered to be particularly sensitive to others' opinions, to the point that he or she relies on his or her beliefs about what others are thinking to guide his or her behaviour. Someone scoring low on Environmental Mastery is considered to have problems managing everyday affairs and lacks a sense of control over the world around them. Low scores on Personal Growth are considered to leave a person feeling bored and uninterested in life, and unable to develop new attitudes or behaviours. A person scoring low on Positive Relations with Others is believed to have few close, trusting relationships, and finds it difficult to be warm, open, and concerned about others, while someone who has low scores on Purpose in Life is considered to lack a sense of meaning in life and to also lack a sense of direction. Finally, someone who has low scores for Self-Acceptance is thought to be dissatisfied with themselves, to the point of being troubled about some of their personal qualities and, thus, wishing that they were different from who they are. An examination of Figure 36 suggests that Positive Relations with Others, Autonomy, and Self-Acceptance are most affected by the development of depression, while Purpose in Life seems to be the most resilient factor. In the context of the descriptions above, the author considers that both the diagnostic criteria for depression and the theoretical perspectives provide support for these findings.

The DSM-IV (American Psychiatric Association, 2000) lists the diagnostic criteria for depression as including: A depressed mood for most of the day, nearly every day; markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day; significant weight loss when not dieting or weight gain, or decrease or increase in appetite nearly every day; insomnia or hypersomnia nearly every day;

psychomotor agitation or retardation nearly every day; fatigue or loss of energy nearly every day; feelings of worthlessness or excessive or inappropriate guilt nearly every day; diminished ability to think or concentrate, or indecisiveness, nearly every day; and, recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide. For a diagnosis to be made, five (or more) of these symptoms must have been present during the same two-week period and represent a change from previous functioning. At least one of the symptoms must be either depressed mood or loss of interest or pleasure. In terms of the descriptions of the various facets of Psychological Well-Being presented above, the author considers that the results are closely aligned with what might be expected when considering the relationship of these diagnostic criteria to low scores on these facets. Autonomy could be considered to be linked with feelings of worthlessness or guilt if one compares one's own views or beliefs to those of others, particularly if one is so strongly influenced by others that one adopts their views or beliefs as one's own. Environmental Mastery could similarly be considered to be linked to a diminished ability to think or concentrate or indecisiveness. The boredom and disinterest in life characterised by low scores on Personal Growth would appear to be closely aligned with the diagnostic criterion of diminished interest or pleasure in daily activities, which might also include Positive Relations with Others. Similarly, Self-Acceptance also appears to be strongly correlated with feelings of worthlessness or inappropriate guilt. Purpose in Life, on the other hand, does not appear to be a good match for any of the diagnostic criteria, and it is this facet that was least affected by increasing EDS scores.

Apart from the link to the theory that bad is stronger than good (Baumeister, et al., 2001) mentioned earlier, Beck (1987) has proposed that systematic errors in thinking lead to catastrophising and generalisation of individual negative events to global negative beliefs about the self, the world, and the future. While it is acknowledged that the scope of these beliefs is broad, there appears to be a strong correlation with theories of positive psychological functioning. With regard to psychological well-being (Ryff, 1989b), the six dimensions of Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance seem to fit well with the Beck's cognitive triad of the self, the world, and

the future. In particular, Autonomy, Personal Growth, and Self-Acceptance would be a good match for the 'self' component of the triad, while Environmental Mastery and Positive Relations with Others appears to be a good match for the 'world' component. Finally, Purpose in Life would seem to be a good match for the 'future' component.

Similarly, with regard to Social Well-Being's (Keyes, 1998) dimensions, Social Integration is an evaluation of one's relationship to society and the community, while Social Acceptance relates to whether a person holds favourable views of human nature and feels comfortable with others. Keyes notes that Social Acceptance can be seen as a social analogue of personal acceptance. That is, people who are positive about their personalities and who can accept both the good and bad aspects of their life circumstances are thought to typify good mental health. Thus, social acceptance of others could actually be seen as an analogue for personal acceptance, since high social acceptance would not be possible without commensurately high personal acceptance. Social Contribution is the evaluation of one's social value, which Keyes considers is related to self-efficacy and social responsibility beliefs. Keyes also states that Social Contribution is reflective of whether, and the extent to which, one feels that one's activities are valued by society and contribute to the common good. Social Actualisation involves the evaluation of the potential and trajectory of society. Keyes notes that, in this context, optimal functioning includes being open to experience, and holding the desire to continually grow. Finally, Social Coherence is the perception of the quality, organisation, and operation of the social world. Keyes observes that Social Coherence is analogous to meaninglessness in life, with less healthy individuals seeing their personal lives as less meaningful and coherent than healthy individuals. Further, Keyes notes that this includes appraisals that society is discernable, sensible, and predictable. An examination of Figure 37 suggests that Social Integration is most affected by declining mood, while Social Coherence is least affected. The author considers that Social Integration involves more of a personal evaluation of oneself compared to others than Social Coherence. Indeed, Social Coherence would appear to be an almost global general evaluation of the wider social world, and thus have less relevance to any intrapersonal evaluations.

Again, these criteria can be assessed in terms of their possible relationship to the diagnostic criteria described earlier. Albeit that the facets of Social Well-Being must involve a comparison of oneself with others in some way, thus providing a possible foundation for negative evaluations, Keyes' (1998) observations seem to provide insight into the ways in which depression might influence Social Well-Being.

Similarly, Social Well-Being's (Keyes, 1998) dimensions of Social Integration, Social Acceptance, Social Contribution, Social Actualisation, and Social Coherence also appear strongly related to Beck's cognitive triad. Since Social Integration is an evaluation of one's relationship to society and the community, it almost certainly relates to the 'world' component. Similarly, Social Acceptance relates to whether a person holds favourable views of human nature and feels comfortable with others, again apparently relating it strongly to the 'world' component. Social Contribution is the evaluation of one's social value and, as such, seems to be related to the 'self' component of the triad. Social Actualisation, on the other hand, involves the evaluation of the potential and trajectory of society, and so seems to be related to the 'future' component. Finally, Social Coherence is the perception of the quality, organisation, and operation of the social world, and so would appear to be linked to the 'world' component.

As such, the author considers that Beck's (1987) theory of depression is highly correlated with both psychological well-being and social well-being. Consequently, if depression develops in a manner consistent with this theory it could be expected that it would have a substantial impact on both of these aspects of positive psychological functioning. The results of the current study would also appear to support this contention, since an almost linear negative correlation was observed to exist between increasing levels of depression and almost all components of positive psychological functioning. While this is consistent with the theory that bad is stronger than good (Baumeister, et al., 2001) in terms of the impact of the progression of depression, Beck also proposes a mechanism through which the development of depression might influence positive psychological functioning. Beck states that depression negates the self-serving bias that is normally present in a person, and which promotes effective functioning. In this regard, Greenberg, Pyszczynski, Burling, and Tibbs(1992) have found that while people who are not depressed are biased toward self-focus after

success rather than self-focus after failure, depressed people are the opposite. That is, they exhibit a depressive self-focusing style whereby they are prone to self-focus after failure rather than self-focus after success. Consequently, this shift in focus as someone develops depression could account for the way in which negative psychological functioning (as it relates to depression) becomes increasingly dominant over positive psychological functioning.

Seligman's (1974, 1975) Learned Helplessness Theory of Depression proposes a relationship between the symptoms of learned helplessness and depression. In this regard, Seligman considers that the first symptom of lowered initiation of voluntary responses is related to psychomotor retardation, manifesting in behaviours such as becoming isolated and withdrawn, moving slowly, and finding it difficult to take actions or make decisions. The second symptom, a negative cognitive set, is thought to manifest itself with depressed people believing that they are more ineffective than they really are, particularly with regard to their own actions. Specifically, it is the "belief that success or failure are independent of one's efforts" (Seligman, 1992, p. 87). Time course is the third symptom of learned helplessness, and Seligman (1992) believes that this is actually related to time being a healing agent. That is, if someone waits for long enough their depression will improve. The application of this symptom to the current research is probably limited, with Seligman (1992) noting that this symptom probably applies to suicidal ideations associated with depression diminishing as time passes and their cognitive set changes.

In terms of lack of aggression and loss of appetite, the fourth and fifth symptoms of learned helplessness, Seligman (1992) considers that a lack of overt aggression is a further restriction in the range of voluntary responses in a person with depression. Indeed, Seligman believes that this restriction extends to include the depressive symptoms of loss of libido and appetite, and that there is a direct correlation between deficits in appetite, sexual interest, and social skills seen in helpless animals.

The final symptom of physiological changes relates mostly to norepinephrine depletion and cholinergic activity. In animals experiencing learned helplessness, norepinephrine depletion produces social withdrawal and depressive-like behaviour in

monkeys, and prompts a failure to withdraw from shock in rats. Further, Seligman (1992) notes that when the cholinergic system is activated in symptomatic people, feelings of depression arise in minutes, and the person experiences helplessness, suicidal ideations, and self-hatred. In overall terms, however, Seligman believes that depression is caused by the belief that action is futile, in that the aspects of a person's life that relieve suffering, bring fulfilment, and provide nurturance are beyond control. The author considers that, in the face of such a belief that a person has no power to control their environment or their circumstances, this would negate the influence of any positive psychological functioning factors that exist in a person. In essence, they would become irrelevant (in the depressed person's mind) because they could not possibly be brought to bear to have a positive influence.

The final theory examined in the current research was Abramson, Metalsky, and Alloy's (1989) Hopelessness Theory of Depression. This is essentially a revision of the Learned Helplessness Theory of Depression (Seligman, 1992), where hopelessness causes a person to hold an expectation that certain highly desired outcomes will not occur, or that certain aversive outcomes will occur. In addition, the person is thought to believe that there is nothing he or she can do that will change the likelihood of either of these outcomes. Hopelessness is thought to arise from at least three types of inferences: (a) causal attribution (why the event occurred), (b) consequences (what will happen as a result of the event occurring), and (c) characteristics about the self (given that the event occurred, what does this say about me?). As with the Learned Helplessness Theory of Depression, the author considers that the development of such a set of inferences would effectively negate a person's positive psychological functioning, while allowing depression to develop.

Shortcomings and Future Research

The current research was unable to examine the transition of sufficient numbers of participants from being classified Not Depressed to Depressed. Consequently, it was not possible to undertake certain statistical analyses because of insufficient numbers in the various categories examined. The main reason for this appears to be an incorrect assumption during the planning stages of the research. It was assumed that for both first-year university students and pregnant women that most of them would be experiencing a generally positive outlook to their life at the

time. That is, the students would be excited and hold positive expectations as they embarked on their university career, and that pregnant women would hold similar views and emotions about the impending birth of their child. However, the mean EDS score of the student cohort clearly suggests that they were experiencing borderline depression, a finding that is supported by Stallman's (2010) recent research into psychological distress in university students. Indeed, Stallman estimated that the prevalence of mental health problems in university students was 19.2%, with some 67.4% of her sample reporting what she described as subsyndromal symptoms. While the results of the current research are thought broadly to support the concept of 'bad' being stronger than 'good', the author considers that more might have been able to be said about the predictive value of a person's positive psychological functioning in terms of the later development of depression had more participants made this transition. As such, this is an opportunity for future research.

The EDS was employed because the author considered it to be most appropriate for use with the maternity sample, and because it had been endorsed as a continuous measure of mood. However, while the EDS would appear to be the instrument of choice for assessing depression in maternity samples, instruments such as the BDI have been more widely employed in depression-related research. To the extent that the EDS is not the 'gold standard' for assessing depression, it may have affected the conclusions regarding whether individual participants were depressed, along with the comparability of the research in a wider arena.

While the use of a sample comprised of students and pregnant women was considered appropriate in order to capture people likely to make the transition from being not depressed to depressed, these two groups may not be representative of the wider population. This lack of representativeness is not only in terms of whether students and pregnant women are a suitable analogue for the influence of positive psychological functioning on the development of depression. To the extent that the experience of males may be different in this regard, the current research would not have been able to consider this. Consequently, it may be advisable in any future research to draw a random sample of the population.

In addition, the author considers that the findings of the current research suggest areas for further research with respect to clinical psychology treatment. If, indeed, bad is stronger than good, this may have implications for the emphasis on the development of regimens such as pleasant events schedules as quickly as possible in therapy. The author's own clinical experience indicates that, for a significant number of people, this is not something that they are able to accept and adopt. Consequently, the author has observed people interpreting this as yet another failure experience and evidence that any efforts to overcome their depression are futile. In light of the findings of the current research, it may be advisable to focus more on symptom relief (thus specifically targeting the 'bad' component of depression) before instituting any actions designed to improve the person's circumstances and return them to normal functioning. Furthermore, the results would also suggest that some aspects of positive psychological functioning are more resilient and resistant to depression than others. As such, it might be advisable to employ these aspects as foundations on which to help the person build a broader improvement to their functioning, both in terms of overcoming their symptoms and re-building a fulfilling life.

Conclusion

Despite indications from previous research that positive psychological functioning might be expected to have an influence on the development and progression of depression, the results from the current research do not support this. While there is no reason to doubt that positive and negative psychological functions are separate systems rather than being opposing poles of a continuum, it would appear that there is a substantial difference in terms of their impact on individual psychology. For reasons that appear grounded in evolutionary psychology, humans may be predisposed to amplifying both the influence and impact of negative events, even if such events exist only in our mind. Indeed, it may even be the case that social expectations and pressures surrounding the search for the so-called 'good life' may in fact be counter-productive if they are interpreted as personal failure experiences when this is not achieved. In fact, extrapolating the findings of the current research would suggest that in order to be 'happy', humans would need a substantial absence of negative influences and a surfeit of positive influences. For the vast majority of the population, this is likely to be an impossible goal. To the extent that a life of

contentment (which would seem to be a more achievable goal than happiness) is possible, it may indeed be necessary to engage in some positive self-deception by amplifying the self-serving bias in some way.

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Appendices

Appendix 1

Information Sheet for the Maternity Group

Thank you for your interest in this study. My name is John Forbes, and I am a PhD candidate in Clinical Psychology at Edith Cowan University, Joondalup Campus.

This study forms the practical component of my research for the PhD Program and is related to positive psychological functioning in depression. It is hoped that this area of research will reveal factors that may improve our understanding of depression, including how it develops and progresses. With this knowledge, we may be able to more accurately diagnose depression, improve therapeutic interventions, and develop more effective preventive strategies and techniques.

Your involvement in this study will be to provide responses to items on a questionnaire. Total involvement should be approximately 1 hour.

The rationale and design of this study has satisfied the strict guidelines laid down by the Ethics Committee. Subject to any legal obligations, all data remains confidential and publication of the results will not disclose your identity. At no time will your name be reported along with your responses. If you are interested in the outcome of this research project, I will be pleased to share it with you upon its completion, which is scheduled for June 2005. My contact details are listed below.

Should you wish to participate in this study it is requested that you complete the attached consent document and return it to me. Please understand that your participation in this study is totally voluntary and you are free to withdraw at any time during this study without penalty, and to remove any data that you may have contributed. If you are participating in the National Postnatal Depression Prevention and Early Intervention Program, please be aware that this study does not form part of that project, and is separate from any aspect of that program in which you might agree to take part.

Every effort has been made to ensure that this study is not stressful for participants, and no hardship or adverse consequences are anticipated. However, if at any time you become distressed with any aspect of this study, assistance is available to you. In this event, you may contact Dr Craig Speelman, whose contact details are listed below.

If you have any questions regarding any aspect of this research please feel free to contact me, or my supervisor, Dr Craig Speelman.

If you have any concerns about the project or would like to talk to an independent person, you may contact Professor Alison Garton on 6304 5110.

Thank you again for your interest in this research project.

Appendix 2

Information Sheet for the Student Group

Thank you for your interest in this study. My name is John Forbes, and I am a PhD candidate in Clinical Psychology at Edith Cowan University, Joondalup Campus.

This study forms the practical component of my research for the PhD Program, and examines positive psychological processes and how they relate to depression. It is hoped that this area of research will reveal factors that improve our understanding of depression by identifying the role of positive aspects of a person's functioning, such as resilience and coping skills. With this knowledge, we may be able to better understand how depression develops and progresses, improve therapeutic interventions, and develop more effective preventive strategies and techniques.

Your involvement in this study will be to provide responses to items on a questionnaire—once now, and again in a few months. I will contact you directly when it is time to send you the second questionnaire. Total involvement should be approximately 20 minutes on each occasion.

The rationale and design of this study has satisfied the strict guidelines laid down by the ECU Ethics Committee. Subject to any legal obligations, all data remains confidential and publication of the results will not disclose your identity. At no time will your name be reported along with your responses. If you are interested in the outcome of this research project, I will be pleased to share it with you upon its completion, which is scheduled for December 2004. My contact details are listed below.

Please understand that your participation in this study is totally voluntary and you are free to withdraw at any time during this study without penalty, and to remove any data that you may have contributed.

Every effort has been made to ensure that this study is not stressful for participants, and no hardship or adverse consequences are anticipated. However, if at any time you become distressed with any aspect of this study, assistance is available to you. In this event, you may contact Dr Craig Speelman, whose contact details are listed below.

If you have any questions regarding any aspect of this research please feel free to contact me, or my supervisor: Dr Craig Speelman. If you have any concerns about the project or would like to talk to an independent person, you may contact Professor Alison Garton on 6304 5110.

Thank you again for your interest in this research project.

Appendix 3

Consent Form

I (the participant) have read the information sheet and any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realising that I may withdraw at any time. I agree that research data gathered for the study may be published, provided I am not identifiable. I acknowledge that I am aware that if I become distressed with any aspect of this study, assistance is available via the means detailed on the Information Sheet.

_____ _____

Participant Date

Appendix 4

Questionnaire

The only difference between the questionnaire for the Maternity and Student samples was the inclusion of the questions relating to pregnancy and motherhood below the question about the participant's country of birth.

Background Information

What is your date of birth? ___/___/___

What is your country of birth? _____

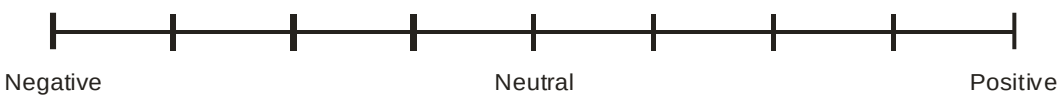
If you were not born in Australia, how many years have you lived in Australia? _____

Was this pregnancy planned? ☐ Yes ☐ No

What problems have you had with this pregnancy?

- ☐ None
- ☐ Gestational diabetes mellitus
- ☐ Pre-eclampsia
- ☐ haemorrhage/threatened miscarriage
- ☐ Excessive vomiting
- ☐ Venous complication (e.g., varicose veins/haemorrhoids)
- ☐ Infection of genitourinary tract
- ☐ Ante-partum
- ☐ Other conditions associated with pregnancy:
  Please specify: _____

Please think about how you feel in general about becoming a mother. Decide whether these feelings are generally positive or negative, and provide a rating on the scale below by circling the appropriate point:



What is your highest level of education completed to date?

- ☐ Primary school
- ☐ Year 10
- ☐ Year 12
- ☐ TAFE
- ☐ Undergraduate university—other than a Bachelors degree
- ☐ Bachelors degree
- ☐ Graduate degree
- ☐ Postgraduate degree

What is your employment status?

- ☐ Employed full-time
- ☐ Employed part-time
- ☐ Self-employed
- ☐ Unemployed
- ☐ Home duties

What is your occupation, or your previous occupation if you have stopped working in the past year?

_____

What is your relationship status?

- ☐ Married
- ☐ De facto
- ☐ Single
- ☐ Separated
- ☐ Divorced
- ☐ Cohabiting (living together)

How many children do you have? _____

Have you experienced any health problems during the past 12 months? ☐ Yes ☐ No

If yes, please list the health problems that you have experienced _____

_____

_____

What is your current state of physical health?

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very Good
- ☐ Excellent

Have you experienced any of the following major life events in the last 12 months (tick all that apply)?

- ☐ Unemployment
- ☐ Separation
- ☐ Miscarriage
- ☐ Moving house
- ☐ Domestic violence
- ☐ Death of someone close
- ☐ Eating disorder
- ☐ Financial difficulties
- ☐ Major physical illness
- ☐ Alcohol or drug addiction
- ☐ Other: _____

Has there ever been a time in your life when you have been consistently depressed or down, most of the day, nearly every day, for at least 2 weeks?

☐ Yes ☐ No

Has there ever been a time in your life when you have been less interested in most things, or less able to enjoy the things you used to enjoy, most of the time over at least 2 weeks?

☐ Yes ☐ No

Have you ever been formally diagnosed with any of the following psychiatric/psychological conditions?

Anxiety disorder	☐ Yes	☐ No
Bipolar disorder	☐ Yes	☐ No
Schizophrenia	☐ Yes	☐ No
Psychotic disorder	☐ Yes	☐ No
Personality disorder	☐ Yes	☐ No
Other	☐ Yes	☐ No

If yes, please specify:_____

Have you ever been diagnosed or treated for depression? ☐ Yes ☐ No

If "Yes," when was your most recent diagnosis or treatment? _____

Are you currently being treated for depression? ☐ Yes ☐ No

If "Yes," what treatment are you receiving?_____

_____

Have you experienced any of the following types of abuse when you were growing up?

Emotional abuse (e.g., being put down constantly, told you were no good etc.)

☐ Yes ☐ No

Sexual abuse (e.g., being involved in sexual activity with an adult)

☐ Yes ☐ No

Physical abuse (e.g., being physically hurt or neglected, or exceedingly punished, etc.)

☐ Yes ☐ No

If you find that answering the above questions is distressing for you, it is strongly recommended that you seek assistance from your GP or another appropriate health professional, or contact John Forbes using the details provided on your Information Sheet.

How many alcoholic drinks can you hold? _____

Have close friends or relatives worried or complained about your drinking in the past year?

☐ Yes ☐ No

Do you sometimes take a drink in the morning when you first get up?

☐ Yes ☐ No

Has a friend or family member ever told you about things you said or did while you were drinking that you could not remember?

☐ Yes ☐ No

Do you sometimes feel the need to cut down on your drinking?

☐ Yes ☐ No

In the 12 months before you were pregnant, how many cigarettes did you smoke each day, on average?

☐ 0 ☐ 1–5 ☐ 6–10 ☐ More than 10

While you have been pregnant, how many cigarettes have you smoked each day, on average?

☐ 0 ☐ 1–5 ☐ 6–10 ☐ More than 10

I would like to know how you are feeling. Please tick the answer which comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

Here is an example, already completed:

I have felt happy

- ☐ *Yes, all the time*
- ☑ *Yes, most of the time*
- ☐ *No, not very often*
- ☐ *No, not at all*

This would mean: "I have felt happy most of the time" during the past week. Please complete the other questions in the same way.

In the past 7 days:

1. I have been able to laugh and see the funny side of things

- ☐ As much as I always could
- ☐ Not quite so much now
- ☐ Definitely not so much now
- ☐ Not at all

2. I have looked forward with enjoyment to things

- ☐ As much as I ever did
- ☐ Rather less than I used to
- ☐ Definitely less than I used to
- ☐ Hardly at all

3. I have blamed myself unnecessarily when things went wrong

- ☐ Yes, most of the time
- ☐ Yes, some of the time
- ☐ Not very often
- ☐ No, never

4. I have been anxious or worried for no good reason

- ☐ No, not at all
- ☐ Hardly ever
- ☐ Yes, sometimes
- ☐ Yes, very often

5. I have felt scared or panicky for no very good reason

- ☐ Yes, quite a lot
- ☐ Yes, sometimes
- ☐ No, not much
- ☐ No, not at all

6. Things have been getting on top of me

- ☐ Yes, most of the time I haven't been able to cope at all
- ☐ Yes, sometimes I haven't been coping as well as usual
- ☐ No, most of the time I have coped quite well
- ☐ No, I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping

- ☐ Yes, most of the time
- ☐ Yes, sometimes
- ☐ No, not very often
- ☐ No, not at all

8. I have felt sad or miserable

- ☐ Yes, most of the time
- ☐ Yes, quite often
- ☐ No, not very often
- ☐ No, not at all

9. I have been so unhappy that I have been crying

- ☐ Yes, most of the time
- ☐ Yes, quite often
- ☐ No, only occasionally
- ☐ No, never

10. The thought of harming myself has occurred to me

- ☐ Yes, quite often
- ☐ Sometimes
- ☐ Hardly ever
- ☐ Never

Self

The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers. Tick the box that best describes your ***present*** agreement or disagreement with each statement.

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
1. Most people see me as loving and affectionate.	☐	☐	☐	☐	☐	☐
2. Sometimes I change the way I act or think to be more like those around me.	☐	☐	☐	☐	☐	☐
3. In general, I feel I am in charge of the situation in which I live.	☐	☐	☐	☐	☐	☐
4. I am not interested in activities that will expand my horizons.	☐	☐	☐	☐	☐	☐
5. I feel good when I think of what I've done in the past and what I hope to do in the future.	☐	☐	☐	☐	☐	☐
6. When I look at the story of my life, I am pleased with how things have turned out.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
7. Maintaining close relationships has been difficult and frustrating for me.	☐	☐	☐	☐	☐	☐
8. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	☐	☐	☐	☐	☐	☐
9. The demands of everyday life often get me down.	☐	☐	☐	☐	☐	☐
10. In general, I feel that I continue to learn more about myself as time goes by.	☐	☐	☐	☐	☐	☐
11. I live life one day at a time and don't really think about the future.	☐	☐	☐	☐	☐	☐
12. In general, I feel confident and positive about myself.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
13. I often feel lonely because I have few close friends with whom to share my concerns.	☐	☐	☐	☐	☐	☐
14. My decisions are not usually influenced by what everyone else is doing.	☐	☐	☐	☐	☐	☐
15. I do not fit very well with the people and the community around me.	☐	☐	☐	☐	☐	☐
16. I am the kind of person who likes to give new things a try.	☐	☐	☐	☐	☐	☐
17. I tend to focus on the present, because the future nearly always brings me problems.	☐	☐	☐	☐	☐	☐
18. I feel like many of the people I know have gotten more out of life than I have.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
19. I enjoy personal and mutual conversations with family members or friends.	☐	☐	☐	☐	☐	☐
20. I tend to worry about what other people think of me.	☐	☐	☐	☐	☐	☐
21. I am quite good at managing the many responsibilities of my daily life.	☐	☐	☐	☐	☐	☐
22. I don't want to try new ways of doing things - my life is fine the way it is.	☐	☐	☐	☐	☐	☐
23. I have a sense of direction and purpose in life.	☐	☐	☐	☐	☐	☐
24. Given the opportunity, there are many things about myself that I would change.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
25. It is important to me to be a good listener when close friends talk to me about their problems.	☐	☐	☐	☐	☐	☐
26. Being happy with myself is more important to me than having others approve of me.	☐	☐	☐	☐	☐	☐
27. I often feel overwhelmed by my responsibilities.	☐	☐	☐	☐	☐	☐
28. I think it is important to have new experiences that challenge how you think about yourself and the world.	☐	☐	☐	☐	☐	☐
29. My daily activities often seem trivial and unimportant to me.	☐	☐	☐	☐	☐	☐
30. I like most aspects of my personality.	☐	☐	☐	☐	☐	☐
31. I don't have many people who want to listen when I need to talk.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
32. I tend to be influenced by people with strong opinions.	☐	☐	☐	☐	☐	☐
33. If I were unhappy with my living situation, I would take effective steps to change it.	☐	☐	☐	☐	☐	☐
34. When I think about it, I haven't really improved much as a person over the years.	☐	☐	☐	☐	☐	☐
35. I don't have a good sense of what it is I'm trying to accomplish in life.	☐	☐	☐	☐	☐	☐
36. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	☐	☐	☐	☐	☐	☐
37. I feel like I get a lot out of my friendships.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
38. People rarely talk me into doing things I don't want to do.	☐	☐	☐	☐	☐	☐
39. I generally do a good job of taking care of my personal finances and affairs.	☐	☐	☐	☐	☐	☐
40. In my view, people of every age are able to continue growing and developing.	☐	☐	☐	☐	☐	☐
41. I used to set goals for myself, but that now seems like a waste of time.	☐	☐	☐	☐	☐	☐
42. In many ways, I feel disappointed about my achievements in life.	☐	☐	☐	☐	☐	☐
43. It seems to me that most other people have more friends than I do.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
44. It is more important to me to "fit in" with others than to stand alone on my principles.	☐	☐	☐	☐	☐	☐
45. I find it stressful that I can't keep up with all of the things I have to do each day.	☐	☐	☐	☐	☐	☐
46. With time, I have gained a lot of insight about life that has made me a stronger, more capable person.	☐	☐	☐	☐	☐	☐
47. I enjoy making plans for the future and working to make them a reality.	☐	☐	☐	☐	☐	☐
48. For the most part, I am proud of who I am and the life I lead.	☐	☐	☐	☐	☐	☐
49. People would describe me as a giving person, willing to share my time with others.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
50. I have confidence in my opinions, even if they are contrary to the general consensus.	☐	☐	☐	☐	☐	☐
51. I am good at juggling my time so that I can fit everything in that needs to be done.	☐	☐	☐	☐	☐	☐
52. I have a sense that I have developed a lot as a person over time.	☐	☐	☐	☐	☐	☐
53. I am an active person in carrying out the plans I set for myself.	☐	☐	☐	☐	☐	☐
54. I envy many people for the lives they lead.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
55. I have not experienced many warm and trusting relationships with others.	☐	☐	☐	☐	☐	☐
56. It's difficult for me to voice my own opinions on controversial matters.	☐	☐	☐	☐	☐	☐
57. My daily life is busy, but I derive a sense of satisfaction from keeping up with everything.	☐	☐	☐	☐	☐	☐
58. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	☐	☐	☐	☐	☐	☐
59. Some people wander aimlessly through life, but I am not one of them.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
60. My attitude about myself is probably not as positive as most people feel about themselves.	☐	☐	☐	☐	☐	☐
61. I often feel as if I'm on the outside looking in when it comes to friendships.	☐	☐	☐	☐	☐	☐
62. I often change my mind about decisions if my friends or family disagree.	☐	☐	☐	☐	☐	☐
63. I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.	☐	☐	☐	☐	☐	☐
64. For me, life has been a continuous process of learning, changing, and growth.	☐	☐	☐	☐	☐	☐
65. I sometimes feel as if I've done all there is to do in life.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
66. Many days I wake up feeling discouraged about how I have lived my life.	☐	☐	☐	☐	☐	☐
67. I know that I can trust my friends, and they know they can trust me.	☐	☐	☐	☐	☐	☐
68. I am not the kind of person who gives in to social pressures to think or act in certain ways.	☐	☐	☐	☐	☐	☐
69. My efforts to find the kinds of activities and relationships that I need have been quite successful.	☐	☐	☐	☐	☐	☐
70. I enjoy seeing how my views have changed and matured over the years.	☐	☐	☐	☐	☐	☐
71. My aims in life have been more a source of satisfaction than frustration to me.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
72. The past had its ups and downs, but in general, I wouldn't want to change it.	☐	☐	☐	☐	☐	☐
73. I find it difficult to really open up when I talk with others.	☐	☐	☐	☐	☐	☐
74. I am concerned about how other people evaluate the choices I have made in my life.	☐	☐	☐	☐	☐	☐
75. I have difficulty arranging my life in a way that is satisfying to me.	☐	☐	☐	☐	☐	☐
76. I gave up trying to make big improvements or changes in my life a long time ago.	☐	☐	☐	☐	☐	☐
77. I find it satisfying to think about what I have accomplished in life.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
78. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	☐	☐	☐	☐	☐	☐
79. My friends and I sympathise with each other's problems.	☐	☐	☐	☐	☐	☐
80. I judge myself by what I think is important, not by the values of what others think is important.	☐	☐	☐	☐	☐	☐
81. I have been able to build a home and a lifestyle for myself that is much to my liking.	☐	☐	☐	☐	☐	☐
82. There is truth to the saying that you can't teach an old dog new tricks.	☐	☐	☐	☐	☐	☐
83. In the final analysis, I'm not so sure that my life adds up to much.	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
84. Everyone has their weaknesses, but I seem to have more than my share.	☐	☐	☐	☐	☐	☐

Gratitude

Please indicate how much you agree with each of the following statements.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1. I have so much in life to be thankful for.	☐	☐	☐	☐	☐	☐	☐
2. If I had to list everything that I felt grateful for, it would be a very long list.	☐	☐	☐	☐	☐	☐	☐
3. When I look at the world, I don't see much to be grateful for.	☐	☐	☐	☐	☐	☐	☐
4. I am grateful to a wide variety of people.	☐	☐	☐	☐	☐	☐	☐
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.	☐	☐	☐	☐	☐	☐	☐
6. Long amounts of time can go by before I feel grateful to something or someone.	☐	☐	☐	☐	☐	☐	☐

Emotional

Please indicate how much of the time during the past thirty (30) days that you have felt:

	All of the Time	Most of the Time	Some of the Time	A Little of the Time	None of the Time
Cheerful	☐	☐	☐	☐	☐
In good spirits	☐	☐	☐	☐	☐
Extremely happy	☐	☐	☐	☐	☐
Calm and peaceful	☐	☐	☐	☐	☐
Satisfied	☐	☐	☐	☐	☐
Full of life	☐	☐	☐	☐	☐

Please indicate how much of the time during the past thirty (30) days that you have felt:

	All of the Time	Most of the Time	Some of the Time	A Little of the Time	None of the Time
So sad that nothing could cheer you up	☐	☐	☐	☐	☐
Nervous	☐	☐	☐	☐	☐
Restless or fidgety	☐	☐	☐	☐	☐
Hopeless	☐	☐	☐	☐	☐
That everything was an effort	☐	☐	☐	☐	☐
Worthless	☐	☐	☐	☐	☐

Social

The following set of questions deals with how you feel about yourself and your social or community life ***at the moment***. Please remember that there are no right or wrong answers. Tick the box that best describes your ***present*** agreement or disagreement with each statement.

	Strongly Disagree	Somewhat Disagree	Disagree a Little	Don't Know	Agree a Little	Somewhat Agree	Strongly Agree
1. The world is too complex for me.	☐	☐	☐	☐	☐	☐	☐
2. I don't feel I belong to anything I'd call a community.	☐	☐	☐	☐	☐	☐	☐
3. People who do a favour expect nothing in return.	☐	☐	☐	☐	☐	☐	☐
4. I have something valuable to give the world.	☐	☐	☐	☐	☐	☐	☐
5. The world is becoming a better place for everyone.	☐	☐	☐	☐	☐	☐	☐
6. I feel close to other people in my community.	☐	☐	☐	☐	☐	☐	☐
7. My daily activities do not create anything worthwhile for my community.	☐	☐	☐	☐	☐	☐	☐
8. I cannot make sense of what's going on in the world.	☐	☐	☐	☐	☐	☐	☐
9. Society has stopped making progress.	☐	☐	☐	☐	☐	☐	☐
10. People do not care about other people's problems.	☐	☐	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat Disagree	Disagree a Little	Don't Know	Agree a Little	Somewhat Agree	Strongly Agree
11. My community is a source of comfort.	☐	☐	☐	☐	☐	☐	☐
12. I try to think about and understand what could happen next in our country.	☐	☐	☐	☐	☐	☐	☐
13. Society isn't improving for people like me.	☐	☐	☐	☐	☐	☐	☐
14. I believe that people are kind.	☐	☐	☐	☐	☐	☐	☐
15. I have nothing important to contribute to society.	☐	☐	☐	☐	☐	☐	☐