

**Enhancing well-being and goal striving in senior high school students:
Comparing evidence-based coaching and positive psychology interventions**

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Abstract:

This study compared a cognitive-behavioural, solution focused (CB-SF) coaching intervention and a positive psychology intervention (PPI) utilising a randomised control trial design. PPIs are described as volitional activities focused on enhancing well-being and promoting flourishing through helping people to change their feelings, behaviours, and/or cognitions drawn from the science of positive psychology, whereas CB-SF coaching is construed as the application of specified psychological knowledge within a goal-focused coaching process. To date, there has been no research that compares the impact of coaching and positive psychology programs in the same study. The purpose of this research was to compare the relative effectiveness of CB-SF coaching and PPIs with adolescents in a school context. Seventy-three (73) Senior High School (Year 11) students (male and female) were recruited from two selective high schools in Sydney, NSW, Australia. Participants were randomly assigned to one of three conditions for ten weeks. The first group received CB-SF coaching, the second group received a PPI, while the third group was a “Well-being as Usual” control group. Compared with CB-SF coaching, participation in the PPI led to increases in mental well-being, although these findings were less pronounced at a nine-month follow-up time point. The CB-SF coaching was associated with increased academic goal striving compared to the PPI and Controls post intervention however gains were not maintained at the nine-month follow-up time point. Trends for the variables of depression, stress, and cognitive hardiness were in the expected directions, although effects were not statistically significant. Overall findings suggest that both types of proactive mental health interventions have great potential to contribute to the well-being and academic goal-striving of an adolescent population, although more research is warranted.

Purpose and Relevance to Coaching

Although coaching-related research is relatively new there is a growing body of empirical literature suggesting that coaching can be an effective intervention in a wide range of settings including community samples of adults, in the workplace with employees, line managers and executives as well as in health-related settings. However the current empirical coaching-specific research base is limited. While significant progress is being made in the development of this research base, most research has been conducted with adults. The generalisability of these findings to the adolescent population cannot be assumed, but rather must be empirically investigated.

Whilst there has been widespread use of academic tutoring in the education sector, there is currently an increasing interest in the use of coaching more broadly, both for students and staff. Coaching in this context may focus on academic and/or life goals for students and professional and/or life goals for staff. In this sense, coaching in education extends beyond a sole focus on academic performance to include a broader aim including life goals and the enhancement of well-being. For example, an edited book entitled "*Coaching in Education*" (Van Nieuwerburgh, 2012) was recently published and provides a broad range of examples of coaching in the education sector in Australia, United Kingdom and the United States of America. At this point in time however research is sparse. Further research is urgently required given the recent increase in interest and uptake by schools.

One of the primary reasons for the increased interest in coaching in the education sector relates to an increased interest in well-being. Whilst coaching has historically been used to aid in goal striving and attainment, it is increasingly being seen and utilised as a proactive intervention aimed at increasing well-being and

reducing mental illness. For example, the authors (Green & Grant) conducted a randomised control trial on the use of cognitive-behavioural, solution-focused (CB-SF) coaching for senior high school students and found that it led to increases in hope and hardiness and reductions in depression (Green, Grant, & Rynsaardt, 2007).

Whilst evidence-based coaching has been defined as an “applied positive psychology” (see section on coaching psychology below) and has been included in a meta-analysis on positive psychology interventions (PPIs; Sin & Lyubomirsky, 2009) its purpose and process is significantly different from a regular PPI such as a gratitude or kindness intervention. Coaching’s primary aim is to clarify personally meaningful goals and provide assistance through the goal-striving process to support goal attainment. Well-being enhancement is not usually a direct focus of the intervention, however is an associated beneficial outcome of this process. In comparison, a PPI’s primary aim is to increase positive feelings, cognitions and behaviours through a variety of approaches, one of which might be goal-setting. PPI’s can be single component (i.e. gratitude) or multi-component (i.e. a number of strategies used over a period of time).

To date both CB-SF coaching interventions and PPIs have been shown to be effective in terms of reducing anxiety, stress and depression and increasing various facets of well-being and goal engagement (Bolier et al., 2013; Grant, Green, & Rynsaardt, 2010; Green et al., 2007; Green, Oades, & Grant, 2006; Sin & Lyubomirsky, 2009), However, to date there have been no comparisons between the efficacy of CB-SF coaching and PPIs.

As noted above, this is a timely study because educational institutions in the USA, Europe and Australia are beginning to invest in bringing Positive Psychology

into the educational setting (Green, in press; Seligman, Ernst, Gillham, Reivich, & Linkins, 2009) and it is not yet known whether coaching, as an applied positive psychology, may be a better alternative for achieving some desirable outcomes such as goal-striving and hardiness.

In addition there is increasing interest in larger scale approaches to well-being in schools under the banner of “positive education” (Seligman et al., 2009). For example, within Australia in recent years, an increasing number of both independent and state schools have made commitments to whole-school positive education programs that aim to help students, staff, and whole-school communities flourish psychologically, socially, and academically. For example, Geelong Grammar School in Australia has developed and applied a Model for Positive Education, which is a whole-school approach to cultivating flourishing in students, staff, and members of the school community (See Norrish, Williams, O'Connor, & Robinson, 2013). It has been argued that both PPIs and coaching are integral parts of positive education Programs (Green, in press; Green & Norrish, 2013; Green, Oades, & Robinson, 2012).

Proactive Mental Health

The need for proactive approaches to mental health is required given increasing rates of mental illness in the general population. Youth, in particular, are arguably one of the most potentially fruitful populations with which to conduct mental health promotion and prevention interventions. Focusing on youth can offer a double benefit: in the short term it may improve the well-being of young people, and in the longer term it may give them psychological tools to help them deal with stress and life problems over time as they grow into adulthood and beyond.

Supporting the mental health and well-being of young people in adolescence is important given it is a difficult time for many. High school students frequently feel under significant pressure to perform well academically, as performance at school affects university entry and future career prospects. Adolescence is also a high-risk period for the onset of psychological disorders (Kessler et al., 2005; Paus, Keshavan, & Giedd, 2008). The 2007 National Survey of Mental Health and Well-being, conducted by the Australian Bureau of Statistics, revealed that more than a quarter (26%) of Australian youth aged 16-24 years had experienced a mental disorder in the previous 12 months (Slade, Johnston, Oakley Browne, Andrews, & Whiteford, 2009). Mental illnesses such as depression and anxiety in adolescence are related to a myriad of negative outcomes including poor physical health, social and interpersonal problems, academic problems, substance use and suicidal behaviour (Lewinsohn, Rohde, & Seeley, 1995; Messer & Beidel, 1994). Further, in addition to mental illness, Australia also has alarmingly high rates of binge drinking and violence among the adolescent population (Donovan, James, Jalleh, & Sidebottom, 2006). These difficulties tend to continue into adulthood if left untreated (Hankin et al., 1998).

Proactive Interventions

To date, intervention efforts with youth have typically focused on treating disorder and dysfunction (Andrews & Wilkinson, 2002; Horowitz & Garber, 2006; Spence & Shortt, 2007). However, there is growing interest in proactive and preventative approaches that build resilience and well-being, rather than merely treating symptoms of distress. Adolescence is proposed as the ideal time for implementing promotion and prevention activities, as increasing well-being in

adolescents may prevent future mental health problems and lead to benefits in other life domains (Howell, 2009; Suldo & Huebner, 2004).

There has also been substantial and growing interest in the roles of schools in cultivating well-being (Clonan, Chafouleas, McDougal, & Riley-Tillman, 2004; Gilman, Huebner, & Furlong, 2009). Schools are one of the most important and influential developmental contexts of children and adolescents' lives and serve as ideal base for nurturing physical and psychological health. Whilst traditionally focused on academic competence, schools are increasingly recognised for the role they play in nurturing the whole-child, including a young persons' emotional, social, psychological and physical well-being (Waters, 2011).

Whilst historically a teacher's role has been implicitly connected to providing pastoral care, within the emerging positive education movement, there is a greater focus on teacher delivery of explicit well-being programs in schools. For example, in Australia, where many schools are embracing whole-school approaches of positive education, all staff at Geelong Grammar School, Knox Grammar School, Loreto Kirribilli and St Peters College have undergone extensive training in positive education prior to roll-out of well-being programs to students. The relatively new fields of coaching psychology and positive psychology offer great promise for the development of interventions that nurture, protect and promote well-being within school settings. The added benefit is that these interventions can easily be taught and delivered in-house by trained staff.

Coaching Psychology

Grant (2007) defined coaching psychology as the "systematic application of behavioural science [within a coaching context] to the enhancement of life experience, work performance and well-being of individuals, groups and

organisations” (p. 23). As such, coaching psychology is an applied science focused on the use of knowledge from a specific domain (i.e. behavioural science). Coaching psychology has previously been defined as an applied positive psychology (Interest Group in Coaching Psychology, Australian Psychological Society), whereby coaching (including the methodology and relationship) provides the opportunity for the application of positive psychology research, such as strengths identification and use (Linley, Nielsen, Wood, Gillett, & Biswas-Diener, 2010).

Evidence-based coaching may be viewed as the applied discipline of Coaching Psychology (as it is focused on how knowledge is used). Grant and Stober (2006) define *evidence-based coaching* as “the intelligent and conscientious use of *best current knowledge* integrated with practitioner expertise in making decisions about how to deliver coaching” (p. 6, italics in original), with “best current knowledge” defined as “up-to-date information from relevant, valid research, theory and practice” (Grant & Stober, 2006, p. 6).

Evidence-based coaching (as is positive psychology), is also concerned with optimal functioning and well-being enhancement. Its focus, however, is on understanding and applying relevant psychological theories and techniques to a collaborative relationship to enhance goal attainment and increase self-regulation for the normal, nonclinical population (Grant, 2007).

Evidence-based Coaching in Schools

As noted above, coaching is increasingly being utilised in schools. The recently published book “*Coaching in Education*” (Van Nieuwerburgh, 2012), provides examples of coaching applications in schools in Australia, the United Kingdom and the United States of America. In addition, there is increasing global sophistication involved in training and education in coaching generally and more

specifically in regard to coaching in the education sector. For example, the University of East London's Coaching Psychology Unit offer students a dedicated module on "Coaching and Mentoring in Education" and in 2010 held an International Conference on Coaching and Positive Psychology in Education.

Research conducted in Australia at the University of Sydney has given preliminary support for the use of evidence-based coaching in educational settings for students and staff. For example, Green et al. (2007) conducted a randomised waitlist control group study of evidence-based life-coaching with an adolescent population. Participants were randomly assigned to receive either a 10-week CB-SF coaching program or allocated to a wait-list control. Fifty-six female senior high school students (mean age = 16 years) were randomly allocated to an individual life-coaching group or to a wait-list control group. Participants were randomly assigned to a teacher-coach (who had been trained in the use of evidence-based coaching models and techniques) and they met one-on-one for 10 sessions over two school terms. Each coaching session involved the setting of session goals, followed by a discussion of what was going on in the student's life. A primary aim of coaching was to raise awareness of personal circumstances and use that awareness to identify resources that could be utilised to move towards personal goals. Students were also assisted to systematically work through the self-regulatory cycle of setting goals, developing (self-generated) action plans and then monitoring and evaluating progress. The findings indicated that student coaches (compared to controls) experienced significant increases in cognitive hardiness and hope, and a significant decrease in levels of depression, which suggested that evidence-based coaching might be an effective intervention for high school students.

Madden, Green, and Grant (2011) also conducted a pilot study by utilising

strengths-based coaching for primary school boys in a within-subject design study. Thirty-eight Year 5 male students (mean age 11 years) participated in a strengths-based coaching program as part of their personal development/health program at an independent, private primary school in Sydney, Australia. Participants were randomly allocated to groups of four or five with each group receiving eight coaching sessions over two school terms. The Youth Values in Action survey (Park & Peterson, 2005) was used to highlight participants' character strengths, and the participants were coached in identifying personally meaningful goals, and in being persistent in their goal-striving, as well as finding novel ways to use their signature strengths. They also completed a "letter from the future" that involved writing about themselves at their best. The strengths-based coaching pilot program was associated with significant increases in the students' self-reported levels of engagement and hope. Thus, strengths-based coaching programs might be considered as a potential mental health prevention and promotion intervention in a primary school setting to increase students' well-being and may also form an important part of an overall positive education program.

In another study, Grant et al. (2010) studied the impact of developmental coaching on teachers. A randomised controlled (pretest-posttest) design was used to explore the impact of coaching on goal attainment, workplace well-being, resilience, and leadership styles. Participants were 44 high school teachers who were randomly assigned to either a 20-week CB-SF coaching intervention or a wait-list control group. Participants in the coaching group received multi-rater (i.e., 360-degree) feedback on their leadership behaviours and, with the help of a professional coach, attempted to use that feedback to develop more of a positive, constructive leadership style (by, for example, disputing self-limiting beliefs or displaying greater

empathy). The findings indicated that the coaching participants reported significant increases in goal attainment, well-being, and resilience. They also had significant reductions in stress in comparison to the wait-list control group. Coaching also appeared to enhance dimensions of constructive leadership (e.g., achievement, humanistic–encouraging), whilst reducing self-reported aggressive/defensive and passive/defensive styles. These findings suggest that coaching, as a professional development method, has great potential to contribute to the professional development and well-being of teachers in an educational setting.

Positive Psychology

Positive Psychology is defined as the scientific study of well-being and optimal human functioning (Gable & Haidt, 2005). Since a seminal article by Seligman and Csikszentmihalyi (2000) that called for a renewed focus within the social sciences on positive aspects of human functioning, the field has grown rapidly and is now established as a credible and ever-evolving field of research and practice (Rusk & Waters, 2013).

One particular area of specialisation has been the development and evaluation of PPIs. PPIs are volitional activities focused on enhancing well-being and promoting flourishing through helping people to change their feelings, behaviours, and/or cognitions (Sin & Lyubomirsky, 2009). In a meta-analysis of 51 studies ($N = 4,266$), Sin and Lyubomirsky (2009) found that PPIs significantly enhanced well-being (effect size = .29) and alleviated symptoms of depression (effect size = .31) suggesting that PPIs have a valuable role to play in mental health. In a more recent meta-analysis of 39 studies ($N = 6,139$), where inclusion was limited to studies that utilised a randomised controlled trial design, PPIs were found to enhance both subjective and psychological well-being as well as alleviate symptoms of depression

(with small but significant effect sizes found at both post-intervention and follow-up time points over six months) (Bolier et al., 2013).

Positive Psychology in Schools

One area of great interest has been the application of positive psychology in schools (Green, Oades, & Robinson, 2011; Norrish & Vella-Brodrick, 2009). While still in the formative stages relative to research in adults, the application of PPIs with adolescents is gaining momentum. For example, Froh, Sefick, and Emmons (2008) conducted a study where students were required to foster gratitude through counting blessings for a two-week period. Classes of students were randomly allocated to the counting gratitude condition, a condition where they were instructed to pay attention to daily hassles, and a non-intervention comparison condition. Students in the gratitude condition reported more satisfaction with their schooling experience than students in the other two conditions and enhanced well-being relative to students in the hassles condition. In another study, students who took part in a 5-week hope program reported increased self-worth, life satisfaction, and hope relative to students in a comparison control condition (Marques, Lopez, & Pais-Ribeiro, 2011). Benefits were maintained over an 18-month follow-up time point.

Research has also focused on multi-component interventions that integrate multiple positive psychology variables. For example, Seligman et al. (2009) randomly assigned 347 Year 9 students to a year-long positive psychology curriculum or their usual language arts curriculum. The positive psychology curriculum involved activities aimed at cultivating the 24 signature strengths included in the Values In Action Framework (VIA; Peterson & Seligman, 2004). Individual, participant, and teacher reports indicated that taking part in the PPI was associated with increased engagement with school and improved social skills up to 18 months post intervention

(however, no long term significant differences on measures of depression and anxiety were found between groups). In another study based on VIA character strengths, students who took part in a six-month program that helped them understand and develop their strengths experienced increased satisfaction with life compared with students in a comparison condition (Proctor et al., 2011). Hence, it appears that PPIs yield important benefits.

Norrish and Vella-Brodrick (2010) also completed a study where 90 Year 10 students were randomly allocated to a six-hour positive psychology workshop, a comparison workshop (that involved exploring life's simple pleasures), or a health program (that integrated usual aspects of the school curriculum such as safe sex and partying responsibly). Participants' well-being and symptoms of depression and anxiety were measured post intervention and at a 7-week follow-up time point. While trends for well-being and symptoms of depression, anxiety, and stress were in the expected direction, and qualitative feedback indicated that students received benefits from the PPI, no clear statistically significant differences were evident. The authors took these findings as an indication that the program required more depth and a longer time frame that allowed participants to apply their learning over several weeks. The authors revised the program based on emerging research and participants' recommendations for improvement to be 10 x 1.5 hour sessions. The current study is based on this longer, revised program.

Coaching and Positive Psychology

Coaching and positive psychology share many overlaps; both use a strengths-based approach where the focus is on building competence and capacity alongside remediating challenges and dysfunction. Both approaches emphasise the importance of teachable skills that can be imparted in individual or group settings.

Both have been shown to lead to increases in well-being (Sin & Lyubomirsky, 2009). Both are growing in evidence-base, although larger and longer term trials are needed.

Despite substantial overlaps, there are important differences. Coaching interventions have a strong focus on explicit goal setting and provide opportunity for explicit goal-striving (peer coaching in this study) to enhance self-regulation. PPIs more directly focus on understanding and applying strengths and cultivating positive subjective experiences such as gratitude and kindness. Whilst goal-setting may be discussed in a PPI, there is usually no requirement for any explicit goal-setting and certainly no explicit or individualised goal-striving (e.g., regular peer coaching) that occurs within the context of a PPI. A full overview of the content of the programs utilised in this study are outlined in Appendix 1.

Aims of the Research

To date, there has been no research conducted that compares the impact of coaching and positive psychology programs in the same study. The purpose of this research is to compare the relative effectiveness of CB-SF coaching and PPIs in a school context utilising a randomised control design with a sample of high school students who were not dysfunctional or at-risk. It is anticipated that the both the CB-SF coaching and PPI interventions will be associated with increases in mental well-being, hardiness and goal striving and decreases in depression, anxiety and stress.

The outcomes of this research could have significant implications for the emerging positive education movement and the broader use of evidence-based coaching and applied positive psychology with young people. The research sought to answer four key questions:

- 1) What is the efficacy of CB-SF coaching and PPIs to increase well-being, hardiness, and goal-striving with an adolescent sample compared to a control group and will these effects be maintained at nine month's follow-up?
- 2) What is the efficacy of CB-SF coaching and PPIs to decrease depression, anxiety and stress with an adolescent sample compared to a control group and will these effects be maintained at nine month's follow-up?
- 3) Do the CB-SF coaching and PP interventions differ in their efficacy to enhance specific outcome variables (e.g., depression as opposed to well-being, or academic goal-striving as opposed to more global well-being)?
- 4) Which intervention, CB-SF coaching or PP intervention, is more effective with an adolescent population?

In addition, it is hypothesised that compared to the control group, participants in the two intervention conditions will show:

- Increased levels of mental well-being and hardiness;
- Decreased levels of depression, stress and anxiety.

Further, it is anticipated that participation in the CB-SF coaching intervention, with its focus on goal-setting and goal-striving will be associated with greater levels of goal striving (academic and personal).

Furthermore, qualitative data will be collected via a student feedback questionnaire (Appendix 2) and interviews will be conducted with the teacher-facilitators post-intervention. Qualitative data can play an important role in evaluation by providing information useful to understanding the processes behind observed results. Furthermore qualitative data may assist in expanding or clarifying quantitative evaluation findings.

Method

Participants

Ninety students were recruited to take part in this study; however, due to attrition, data is available for only 73 of the students. Participants were 73 Australian adolescents aged 15 to 17 years (M age = 16.03, SD = .44). There were 32 females and 41 males. Participants were all senior high school students (Year 11) at either a boys or girls high school in Sydney, Australia. Both schools were 'selective' in that students apply to the school and are admitted based on high academic performance. Pre-intervention scores on the Depression, Anxiety and Stress Scales (DASS-21, Lovibond & Lovibond, 1995) all fell within the normal range of psychopathology except for Anxiety which, at M = 7.84 (SD = 5.30) can be considered to be at the boundary of the normal (0 – 7) and mild (8 – 9) categories.

Participants were from diverse cultural backgrounds. While the majority (n = 47, 64.4%) were born in Australia, there were also several students who were born in China (n = 7, 9.6%) and Hong Kong (n = 4, 5.5%). Additionally, three participants were born in New Zealand and India; two in Malaysia; and one each in Japan, Korea, the Philippines, Sri Lanka, Sweden, Taiwan, and Vietnam. The majority (n = 57, 78.1%) spoke at least one language other than English at home. The most common other languages spoken were Cantonese (n = 19, 26.0%) and Mandarin (n = 17, 23.3%).

The 73 participants were randomly assigned to the Coaching group, (n = 25), the Positive Psychology group, (n = 24), a "Well-being as Usual" Control group (n = 24). Participants completed self-report measures at Time 1 (pre-intervention), Time 2 (post-intervention) and at Time 3 (9 months post-intervention).

Measures

The *Short Warwick-Edinburgh Mental Well-being Scale* (SWEMWBS; Stewart-Brown et al., 2009) is a seven-item measure of mental well-being. The scale represents a wide conceptualisation of well-being and includes cognitive (i.e., satisfaction), affective (i.e., emotional), and psychological functioning components. Respondents rate each item (e.g., 'I have been feeling close to other people') on a five-point scale ranging from 'none of the time' to 'all of the time' with high scores indicating more mental well-being. The SWEMWBS has been found to have a strong correlation ($r = .95$) with the longer Warwick-Edinburgh Mental Well-being Scale. The SWEMWBS has been validated for measuring mental well-being in populations aged 16 years and over.

The *Depression Anxiety and Stress Scale – Short Form* (DASS; Lovibond & Lovibond, 1995) is a 21-item measure of symptoms of depression, anxiety, and stress. Respondents rate their experience of each item over the past week on a four-point scale ranging from 0 to 3. The DASS consists of seven items for each of the three subscales of depression (e.g., 'I felt down-hearted and blue'); anxiety (e.g., 'I felt I was close to panic'); and stress (e.g., 'I found it hard to wind down'). Higher scores indicate higher symptoms of depression, anxiety, and stress. The DASS has been found to have high internal consistency in a non-clinical sample (depression $\alpha = .82$; anxiety $\alpha = .90$; stress $\alpha = .93$) and to have good convergent validity with other measures of depression and anxiety. The lower age limit of the development samples was 17 years.

The *Cognitive Hardiness Scale* (CHS; Nowack, 1990) is an 18-item measure of resilience. This scale, based on Kobasa's (1979) work, assesses the individual's sense of personal control, their propensity to rise to meet challenges, and their

commitment to action. The CHS has been used in a wide range of studies exploring a range of issues such as burnout (Gopal, Glasheen, Miyoshi, & Prochazka, 2005), stress and work absenteeism (Greene & Nowack, 1996) and executive coaching (Grant, Curtayne, & Burton, 2009). The measure is scored on a five-point Likert-type scale. Nowack (1990) reports an internal consistency of .83.

The *Personal Strivings Questionnaire* (PSQ; Emmons, 1986) requires participants to think of their personal strivings as the “objectives (goals) that you are typically or characteristically trying to attain in your daily life”. The participants were instructed not to make their strivings too specific (e.g., to run 5km today) and were given the following examples: “trying to be physically attractive to others” and “trying to seek new and exciting experiences”. Each participant was instructed to generate two personal strivings 1) academic; and 2) personal. Additionally, participants rated themselves on goal striving: “In the last 10 weeks, how successful have you been in attaining your strivings?” This was rated on a Likert scale of 1 to 5 (1 = 0% successful and 5 = 100% successful).

The Participant Feedback Questionnaire. Students assigned to the CB- SF Coaching group and the PPI group completed a feedback questionnaire after completing the programs. They were asked to rate their satisfaction with the overall program in terms of the program content, delivery, and activities as well as their enjoyment of the ten program sessions independently. Participants were also asked to indicate how frequently they did the program homework and how often they implemented strategies in their lives. In addition, they completed five open-ended questionnaires about their more general impressions on the program. These questions asked (1) what they enjoyed about the program; (2) what they learnt from the program; (3) how they were applying the concepts in their lives; (3) what they

didn't find useful; and (4) what they would change about the program (see Appendix 2 for a copy of the participant feedback questionnaire).

Teacher Feedback Questionnaire. All four teacher-facilitators from the PPI and CB-SF coaching groups were interviewed via phone to seek feedback on their overall impressions of the program and to identify specific elements/aspects of the program that they believe may have been the most potent (see Appendix 3 for a copy of the Teacher Feedback Questionnaire).

Program Materials

Teachers who delivered the CB-SF coaching and PPI programs received a training manual including step-by-step instructions for program delivery. Power-point presentations were also provided. Students allocated to both program conditions received a workbook that included additional information on key concepts covered in the workshops, an explanation of practice activities, and space to make personal comments and reflections.

Procedure

Training staff members

Four teachers—two from each school—were selected to deliver the interventions and assigned to deliver either the CB-SF Coaching Program or the PPI Program. These staff members received two days of training in the intervention from the respective program developers. Teachers were also provided ongoing telephone and email supervision from the program developers throughout delivery to ensure they were adhering to the manualised intervention protocol and to discuss any potential issues that arose during the intervention. For both the CB-SF coaching and the PPI group, a supervisor observed the delivery of the program on three separate occasions and provided guidance and feedback to the teacher-facilitators.

Execution of the study

An information session explaining the study was conducted at both schools, after which students from each school were provided with plain language explanatory statements and consent forms. Students who submitted personal and parental consent forms were randomly allocated to one of the three study conditions: (1) CB-SF coaching; (2) PPI; and (3) Well-being as Usual comparison condition. Students in the intervention conditions took part in the 10 x 1.5 hour sessions either before or after school-time. Sessions were run at an interval of 2 weeks, taking place over the course of 2 school terms (22 weeks including a two week semester break).

The program was run as a combined project across the schools, so male and female students took part in the program together. Participants completed the aforementioned questionnaires during school hours at three different time points (i.e., pre-intervention, one week post-intervention and nine months post-intervention). Details for the three conditions are as follows.

The Three Conditions

The Coaching Program

The 10 week CB-SF Coaching Program was based on the Coach Yourself program that has been utilised in four previous randomised, controlled studies on evidence-based life coaching (Grant et al., 2010; Green et al., 2007; Green et al., 2006; Spence & Grant, 2007). In the first coaching session, participants were provided with an overview of the Coach Yourself program and provided with information regarding setting personally meaningful goals. Each participant was required to set one academic goal and one personal goal (and identify these in the “Personal Strivings Scale”).

In addition, within each coaching session, participants were required to set session goals focused on the aim and objective of that particular session. The aim of coaching is to raise the students' personal awareness of their current situation. Students took turns acting in the roles of 'coach' and 'coachee'. When acting as coaches, students were encouraged to assist coachees to identify personal resources that could be utilised in moving towards their goals, and to develop self-generated solutions and specific action steps, systematically working through the self-regulation cycle of setting goals, developing action plans, monitoring and evaluating progress. A summary of the 10 sessions is provided in Appendix 1.

The PPI

The PPI was a 10-session multi-component program. Students were introduced to the importance of taking care of their mental health and wellbeing and to regularly devoting time to nurturing the things that make their lives meaningful and fulfilling. Specific content focused on identifying their strengths, savouring positive emotions and experiences, fostering flow and peak engagement experiences, cultivating kindness, hope and gratitude, nurturing relationships, and enhancing meaning and purpose. Each session comprised a combination of background theory, an explanation of supportive research, interactive activities, short media clips, and personal and group exploration. Between sessions, students were encouraged to reflect on the role of various concepts in their lives and undertake simple homework tasks that required them to implement key skills. A summary of the 10 PPI sessions is also provided in Appendix 1.

Comparison Condition

Participants allocated to the comparison condition did not take part in either program. This group is identified as the "Well-Being as Usual" condition in the

results section. The Well-being as Usual group participated in a peer support training program to provide leadership and support for younger students (consists of a 3 day camp) and “The Crossroads Program” being mandatory lessons on drug and sexual health issues (consists of a 2 day workshop). Neither of these “well-being” programs included topics such as those covered in either the CB-SF Coaching or PPI programs such as goals setting, strengths identification, or cultivating gratitude.

Results

Participants

Data Cleaning

SPSS Version 21.0 was used for all data analyses. Scores on the dependent variables were examined for accuracy of data entry and missing values. Three participants had not completed the questionnaires at Time 3 (two from the Positive Psychology group and one from the Well-being as Usual group). The intention to treat method was used, with Time 2 scores carried forward to Time 3 for these three participants. As missing data appeared to occur randomly and comprised less than 5% of the total sample, scores were prorated. Visual inspection of boxplots suggested a few outliers. An inspection of 5% Trimmed Means indicated that extreme scores were influencing overall means for the three DASS variables, so a decision was made to truncate outliers. The data did not appear to violate any other assumptions of multivariate analysis, with the exception of the Striving Scales which were substantially negatively skewed and high on kurtosis and this should be taken into account when interpreting the results.

Preliminary Analyses

A controlled randomisation procedure was utilised to assign the 73 participants to the Coaching group ($n = 25$), the Positive Psychology group, ($n = 24$),

or the Well-being as Usual group ($n = 24$). Means for the Coaching, Positive Psychology, and Well-being as Usual groups for Time 1 (pre-intervention), Time 2 (post-intervention), and Time 3 (nine month follow-up) are displayed in Table 1.

One way between groups ANOVAs were used to explore pre-intervention differences on all of the outcome variables of mental well-being, symptoms of depression, anxiety, and stress, cognitive hardiness, and academic and personal strivings. No significant baseline differences between the three conditions were found ($p > .05$, two-tailed), indicating that there were no pre-existing differences on the measures between the three groups. A series of independent measures t -tests were used to explore gender differences for outcome variables, with no significant differences found ($p > .05$, two-tailed).

Analyses

A series of 3 x 3 mixed methods ANOVAs were used to assess the impact of the three different conditions (Coaching, Positive Psychology, and Well-being as Usual) on the various outcome variables across the three time points. Means and standard deviations for the key variables are displayed in Table 1.

Table 1
Means and Standard Deviations as a Function of Group and Pre-intervention (1), Post-intervention (2), and Follow-up (3) Time Points.

	Coaching n = 25	Positive Psychology n = 24	Well-being as Usual n = 24	Total N = 73
WEMWBS1	51.64(6.21)	49.92(6.71)	47.67(5.77)	49.77(6.37)
WEMWBS2	51.36(5.73)	54.17(6.55)	48.17(6.14)	51.23(6.53)
WEMWBS3	49.08(8.87)	52.25(6.94)	47.54(8.42)	49.62(8.26)
DEP1	8.00(6.73)	9.42(8.56)	9.58(6.24)	8.99(7.17)
DEP2	6.72(5.83)	6.50(4.91)	9.00(6.90)	7.40(5.96)
DEP3	9.41(7.58)	5.58(4.93)	11.33(8.29)	8.79(7.39)
ANX1	7.20(5.54)	7.92(5.42)	8.42(5.07)	7.84(5.30)
ANX2	6.88(5.90)	6.83(6.49)	8.83(7.85)	7.51(6.75)
ANX3	9.36(7.61)	7.75(7.30)	9.00(7.60)	8.71(7.43)
STR1	11.68(6.77)	13.08(7.87)	12.92(7.34)	12.55(7.25)
STR2	10.48(7.24)	10.50(7.08)	14.17(7.95)	11.70(7.53)
STR3	14.56(9.32)	10.66(6.09)	15.84(8.11)	13.70(8.16)
CH1	99.48(12.41)	101.75(13.23)	101.67(10.97)	100.95(12.12)
CH2	101.56(15.99)	107.50(11.98)	96.29(14.39)	101.78(14.77)
CH3	99.72(14.43)	100.99(15.57)	95.08(11.56)	98.61(14.00)
AS – S1	3.48(0.82)	3.54(0.98)	3.38(0.97)	3.47(0.91)
AS – S2	4.00(0.76)	3.29(1.23)	3.04(1.20)	3.45(1.14)
AS – S3	3.60(0.92)	3.67(0.92)	3.00(0.78)	3.42(0.88)
PS – S1	3.56(0.77)	3.63(1.10)	3.17(0.87)	3.45(0.81)
PS – S2	3.40(1.00)	3.96(1.00)	3.17(1.01)	3.51(0.99)
PS – S3	3.32(0.99)	3.92(0.83)	3.38(0.86)	3.54(0.93)

WEMWBS = Warwick-Edinburgh Mental Well-being Scale; DEP = DASS Depression Subscale; ANX = DASS Anxiety Subscale; STR = DASS Stress Subscale, CH = Cognitive Hardiness; AS – S = Academic Striving – Successful; PS – S = Personal Striving – Successful.

Mental Well-being

A 3 x 3 mixed-methods ANOVA was conducted to explore the differences between the three groups across the time points for the WEMWBS variable. The main effect for time was significant, Wilks' Lambda = .91, $F(2, 69) = 3.63$, $p = .03$ (partial eta squared = .10). The main effect for group was significant $F(2, 70) = 3.45$, $p = .04$ (partial eta squared = .09). The group by time interaction was also significant, Wilks' Lambda = .87, $F(4, 138) = 2.58$, $p = .04$ (partial eta squared = .07). Post-hoc comparisons using the Tukey HSD test indicated that the mean change in scores between Time 2 and Time 1 for the Positive Psychology group was significantly higher than the mean change in scores between Time 2 and Time 1 for the Coaching group ($p = .02$). These results are summarised in Figure 1, where it can be seen that the PPI group had an increase in well-being after the intervention that was statistically greater than the change in well-being for the Coaching group. While the PPI group demonstrated an increase in well-being relative to the control group, post-hoc comparisons did not reveal these differences to be statistically significant. No significant differences were found in relation to Time 3.



Figure 1: Students' scores for mental well-being, for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Depression

The 3 x 3 mixed-methods ANOVA revealed no significant main or interaction effects, or main effects for group or time for the DASS Depression subscale. As can be seen in Figure 2, whilst the ANOVA did not reach statistical significance, there was a clear trend for students who took part in the Positive Psychology program to report fewer symptoms of depression by the third time point. Of note, at Time 3, the Well-being as Usual group reported over twice the symptoms of depression than the Positive Psychology group. Furthermore, the Well-being as Usual group reported symptoms in the 'Mild' range of the DASS interpretation guidelines; whereas the Positive Psychology group reported DASS scores well within the 'Normal' range.

Therefore, it seems that while the overall ANOVA did not reach statistical significance, there was a clear trend for students who took part in the Positive Psychology program to report fewer symptoms of depression by the third time point, relative to students in the Well-being as Usual group.

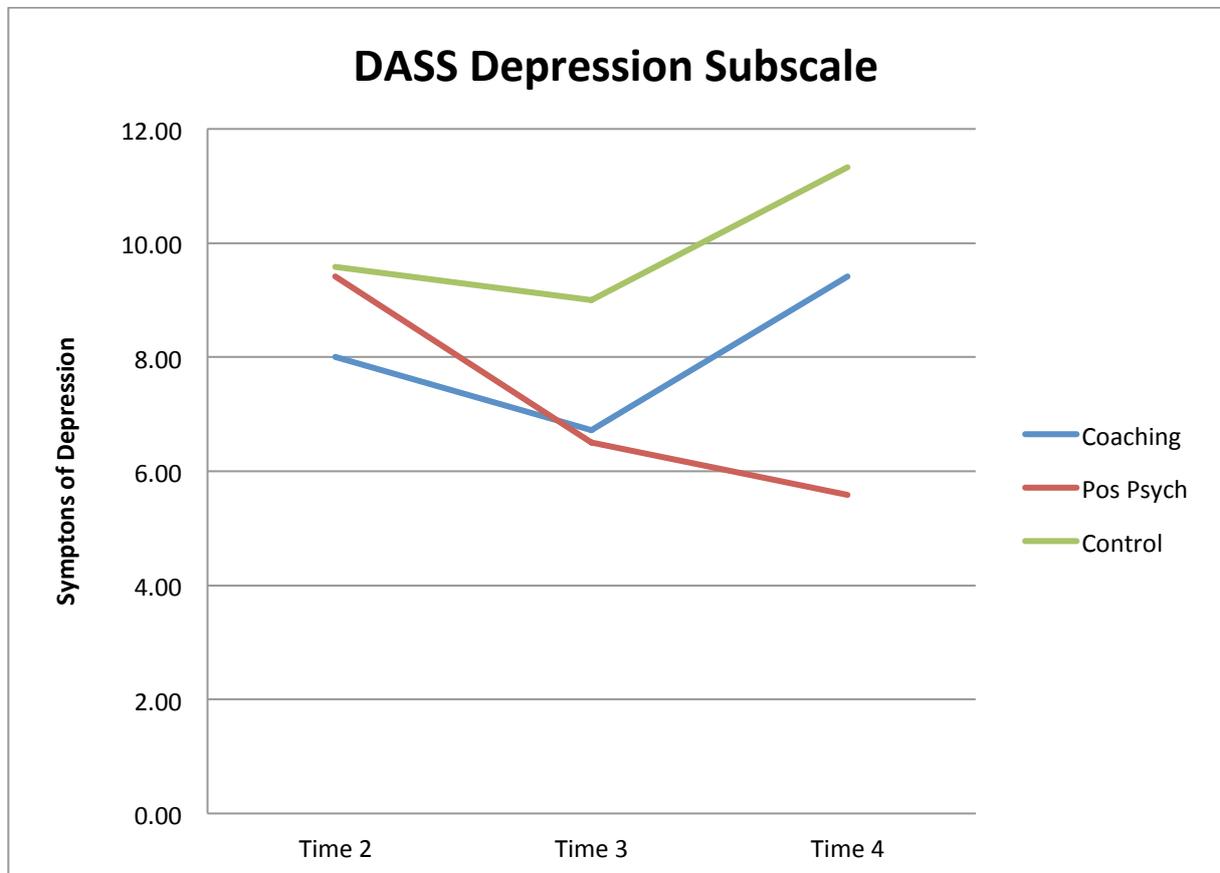


Figure 2: Students' scores for DASS Depression Subscale, for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Anxiety

The 3 x 3 mixed-methods ANOVA for the DASS Anxiety subscale revealed no significant interaction effects, or main effects for group or time. See Figure 3 for reported levels of symptoms of anxiety for the three groups over time, showing little meaningful differences between the three groups on the variable of anxiety.

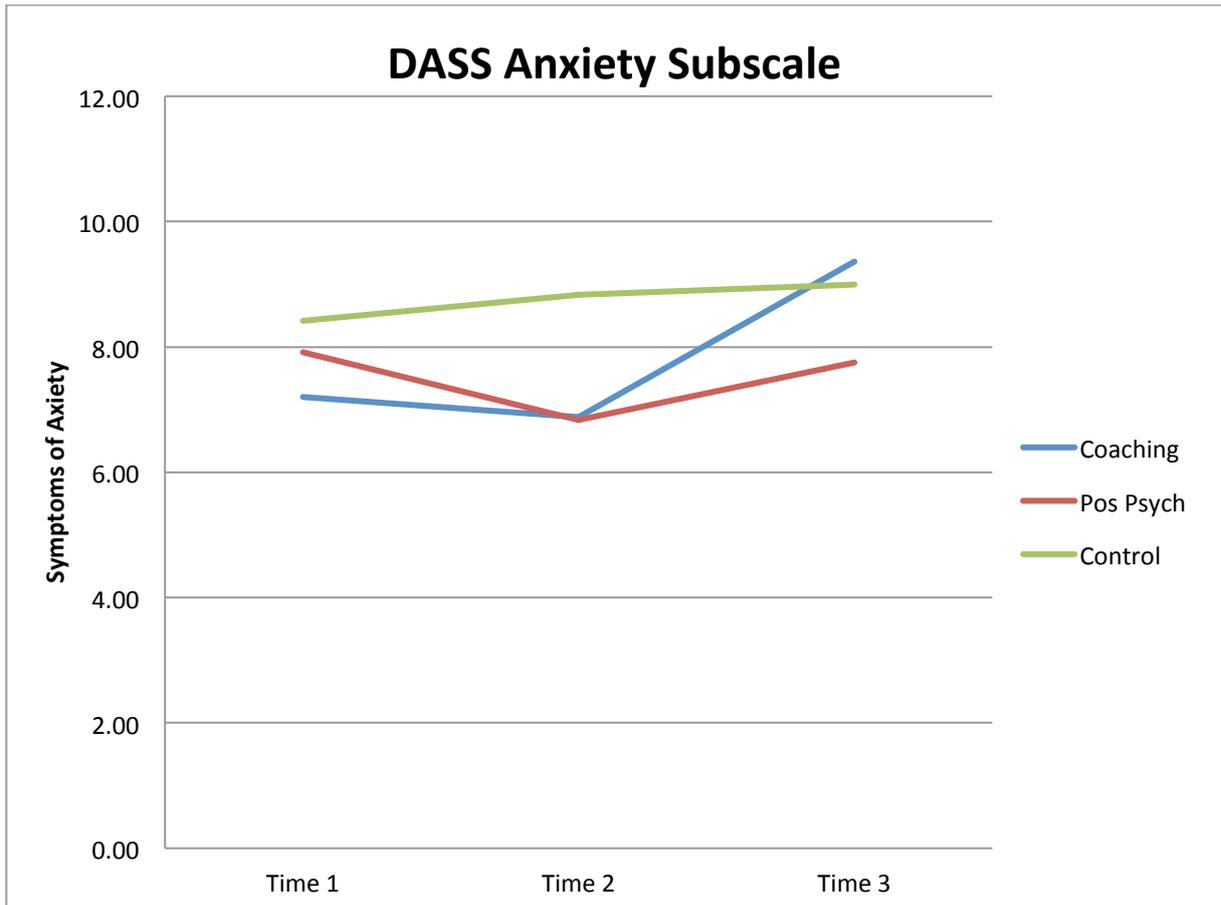


Figure 3: Students' scores for the DASS Anxiety Subscale, for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Stress

The 3 x 3 mixed-methods ANOVA for the DASS Stress subscale revealed no significant interaction effects, or main effects for group or time. As displayed in Figure 4, both the Coaching and Positive Psychology groups did experience a decrease in Stress from before to after the program, while students in the Well-being as Usual group experienced an increase in stress, but these differences were not found to be statistically significant. The trend for decreased stress was maintained for the Positive Psychology group at the third time point.

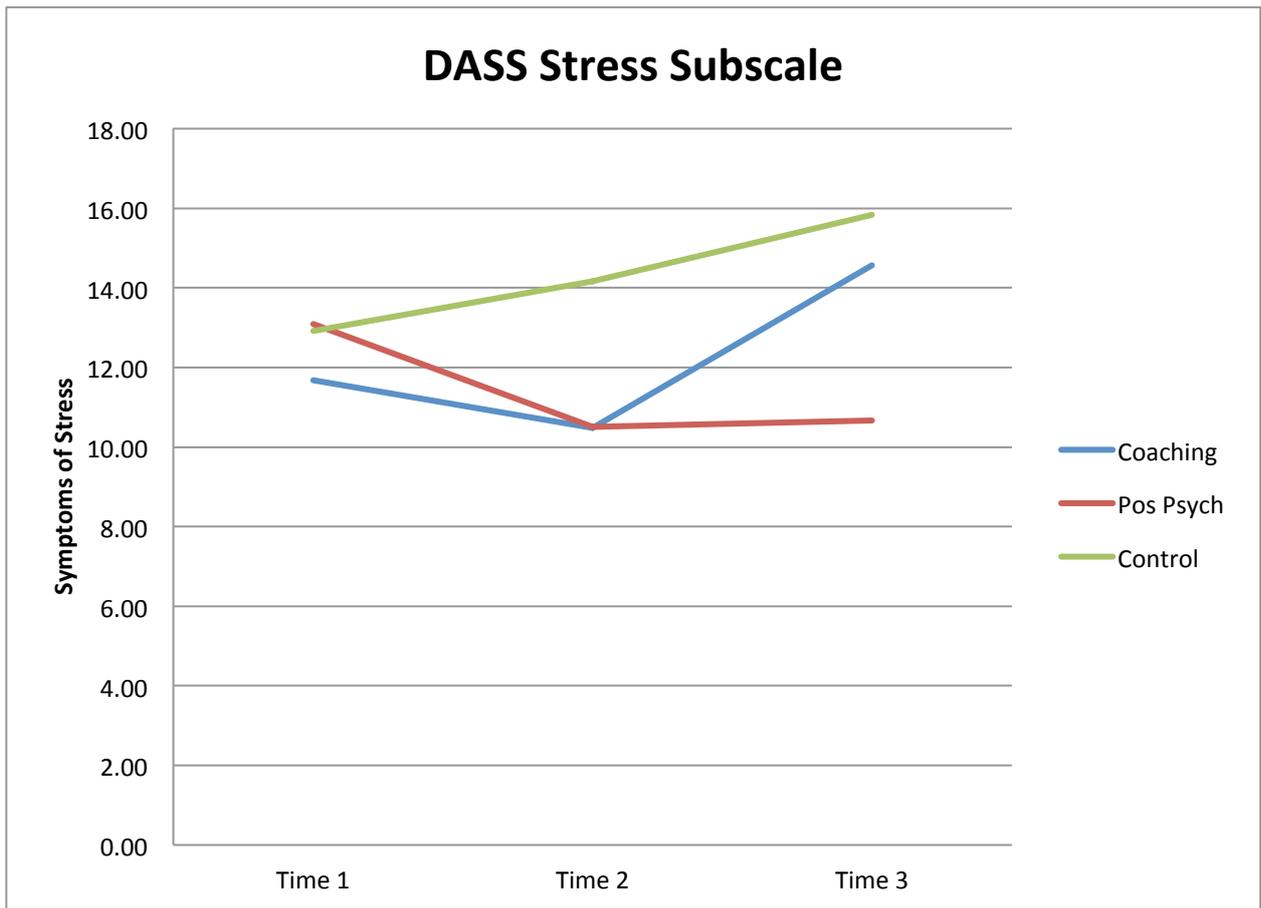


Figure 4: Students' scores for the DASS Stress Subscale, for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Cognitive Hardiness

A 3 x 3 mixed-methods ANOVA was conducted to explore the differences between the three groups across the time points for Cognitive Hardiness. The main effects for time or group or the group by time interaction were not significant. As can be seen in Figure 5, the Well-being as Usual group experienced decreases (non-significant) in cognitive hardiness overtime. The Positive Psychology group reported a peak (non-significant) in Cognitive Hardiness at the second time point; the Coaching group reported a similar trend but less pronounced.

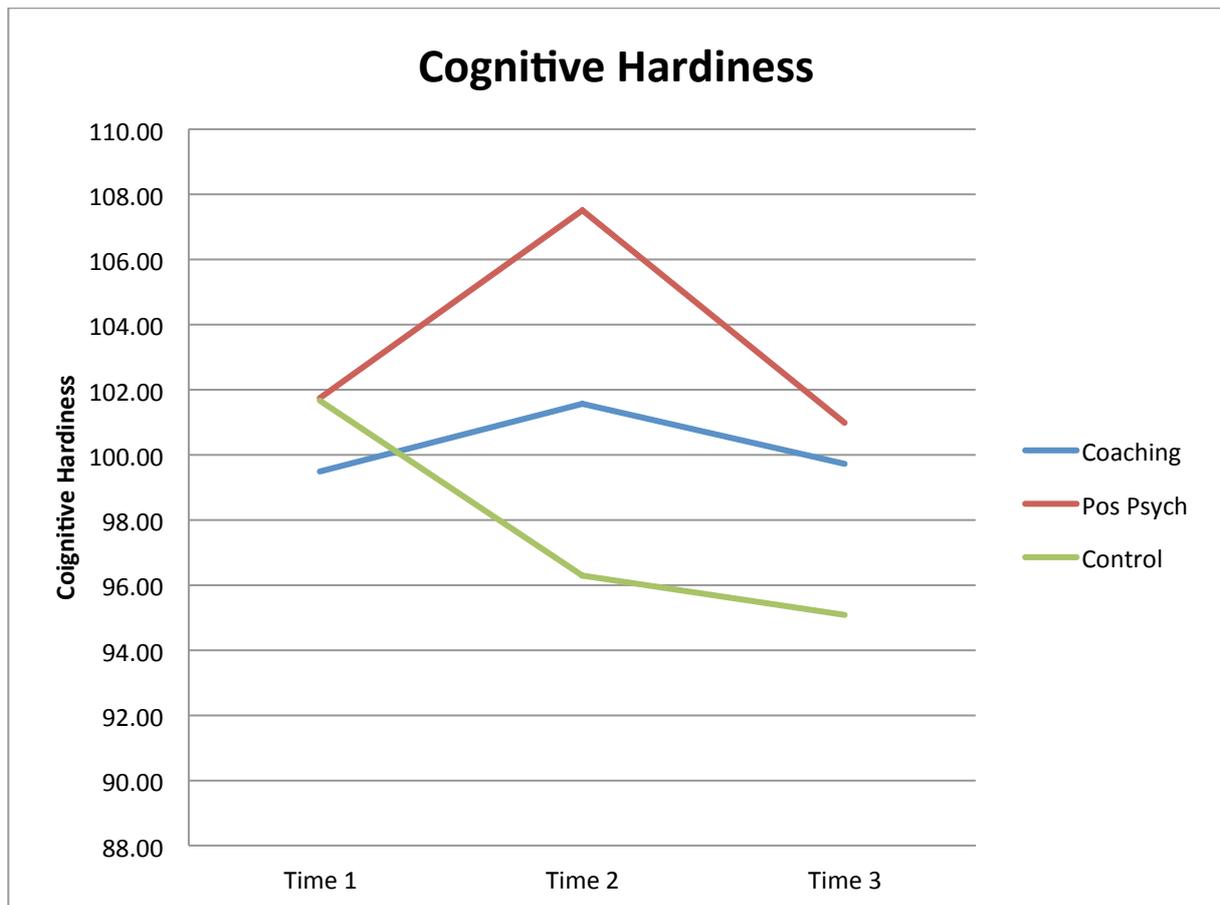


Figure 5: Students' scores for the Cognitive Hardiness Subscale, for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Academic Striving

Means for each group, over time, on the Academic Striving variable are shown in Figure 6. Per a 3 x 3 mixed model ANOVA, there was a significant main effect for group, $F(2, 70) = 3.60, p = .03$ (partial eta squared = .09). This same outcome variable also had a significant time by group interaction, Wilks' Lambda = .824, $F(4, 140) = 3.51, p = .009$, (partial eta squared = .09). Post-hoc comparisons using the Tukey HSD test indicated that the mean change in scores between Time 2 and Time 1 was significantly higher for the Coaching group than the Positive Psychology group ($p = .02$) or the Well-being as Usual Control group ($p = .01$). There were no significant differences between groups between Time 3 and Time 1.

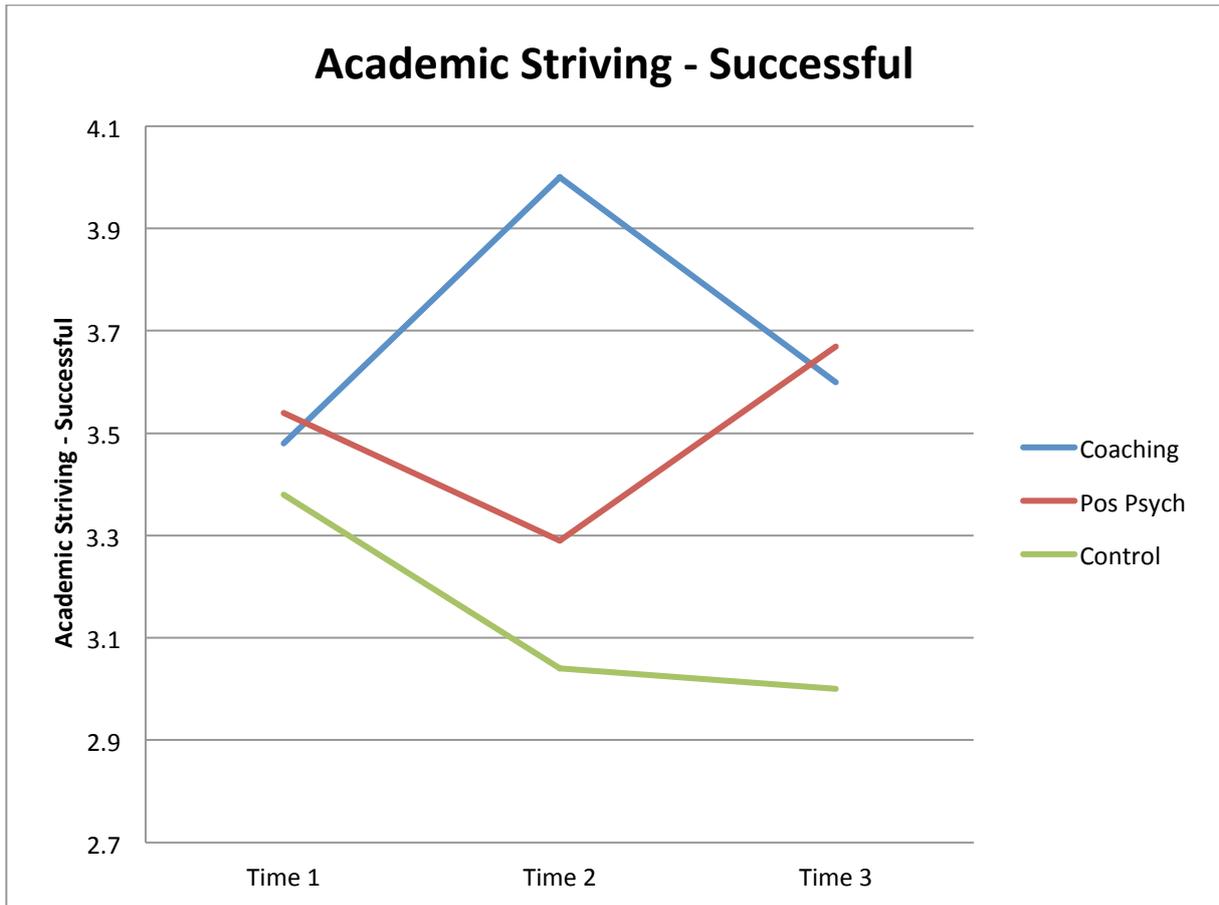


Figure 6: Students' scores for the Academic Striving – Successful outcome variable for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Personal Striving

A 3 x 3 factor mixed model explored interactions and main effects on the Personal Striving outcome variables (means are shown in Figure 7). There was a significant main effect for group on Personal Striving, $F(2, 70) = 4.80, p = .01$, (partial eta squared = .12). Post-hoc comparisons using Tukey's HSD test showed no significant mean changes between groups across Times 2 and 3 compared to Time 1.



Figure 7: Students’ scores for the Personal Striving – Successful outcome variable for the three conditions, at pre-intervention, post-intervention, and follow-up time points.

Qualitative Data and Program Evaluation

Students in the Coaching and Positive Psychology groups completed a brief questionnaire that sought their feedback on the programs. Students in both groups rated their satisfaction and interest in various elements of the programs on a seven-point scale ranging from ‘very low’ to ‘very high’. They also completed five open-ended questionnaires for more general views and suggestions (see Appendix 2 for a copy of the feedback questionnaire).

Students’ Satisfaction

Students who took part in both programs rated their experience quite highly with means for both groups sitting between 5 and 6 points on the seven point scale

for their satisfaction with the program content, delivery, and activities. There were no meaningful differences between students' evaluations of the two programs. Means and standard deviations for students' satisfaction with the programs, rate of homework completion, and frequency of concept application are displayed in Table 2.

Students also rated how frequently they completed their program homework between the sessions and how regularly they applied the concepts they learnt in the programs in their lives. Interestingly, students in the Coaching group completed more homework and applied their knowledge more regularly than students in the Positive Psychology group, although these differences were not statistically significant.

Table 2
Means and Standard Deviations of Program Satisfaction and Applications for the Coaching and Positive Psychology Groups.

	Coaching		Positive Psychology	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Program content	5.24	1.00	5.32	1.04
Program delivery	5.19	1.03	5.45	0.86
Practical activities	5.24	1.18	5.77	1.11
Homework completion	5.33	1.39	4.86	1.42
Concept application	5.24	0.94	5.00	0.93

Coaching Program Sessions

When asked about their feedback on the individual coaching program sessions, students rated their experiences favorably, with means between 4 and 6 on a 7 point scale. Students described being least interested in the introduction learning content ($M = 4.38$; $SD = 1.07$) and most interest in the ANTS into PETS learning content ($M = 5.86$; $SD = 1.06$). A summary of students' interest in the ten Coaching sessions is provided in Figure 8.



Figure 8: Students ratings of interest in the Coaching Program Lessons.

Positive Psychology Program Sessions

Students rated all sessions of the Positive Psychology Program quite positively, with means between 4 and 6 on the 7 point scale. Students were the least interested in the summary session ($M = 4.59$; $SD = 1.33$) and most interested in the

gratitude session ($M = 5.77$; $SD = .92$). A summary of students' interest in the ten Positive Psychology sessions is provided in Figure 9.

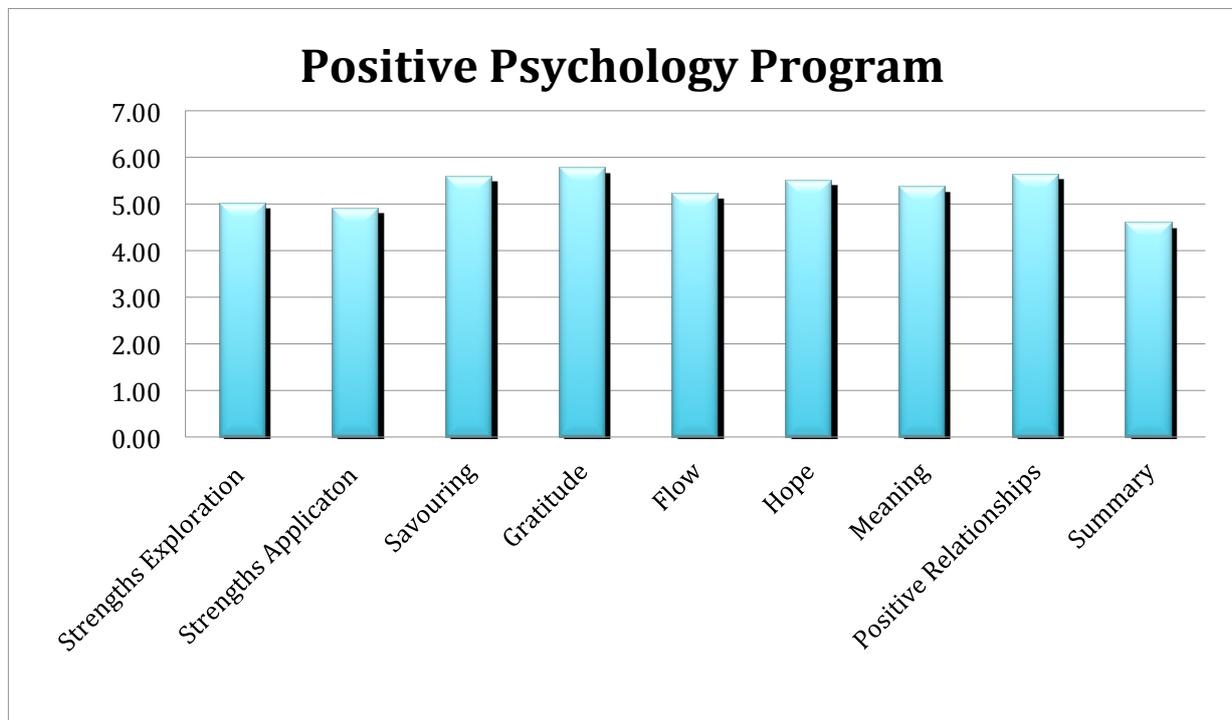


Figure 9: Students ratings of interest in the Positive Psychology Program lessons.

Student Feedback on the Coaching Program

What did you enjoy about the program?

When asked to describe what they enjoyed about the CB-SF Coaching program, all students except one made favourable comments, reporting that the program was 'interesting', 'inspiring', and 'helped me build a sense of accomplishment'. In particular, numerous students described enjoying learning about goals (e.g., 'forming SMART goals') and the social aspects of the program (e.g., 'being able to socialise and talk to people about my week').

What did you learn from the program?

Students described learning something from the program, with all students listing at least one, and often several, new skills they had developed as a result of taking part in the Coaching program. More than half of the students described learning valuable goal setting skills (e.g., 'setting goals, how to achieve goals') and several students mentioned learning new skills in changing Automatic Negative Thoughts (ANTS) into Performance Enhancing Thoughts (PETS).

What, if anything, are you personally applying from the program?

When asked what they were personally applying from the program, each student described at least one real life application from their learning. The content of these comments varied considerably, and included skills such as improved work ethic, time management skills, overcoming procrastination, and developing study plans. Overall, many comments were related to achievement with comments such as 'I've been able to deal with my procrastination and improve my motivation and work ethic' and 'improving my time management through homework/study plans'.

As can be seen, these qualitative responses echo the quantitative findings that the coaching program had a positive impact on academic strivings, and thus give additional validation about the specific impact of the coaching program on academic goals.

What didn't you find useful in the program and what would you change?

When asked what they would change about the program, nineteen students made suggestions for improvement. Key recommendations were that the program was less 'repetitive', especially in terms of the frequency of the 'REGROW sessions'. Numerous students, however, had no recommendations for improvement (e.g., 'I found practically everything we did useful'). When asked what they would change

about the program, most students made suggestions, with by far the most common recommendation being to include more variation.

Student Feedback on the Positive Psychology Program

What did you enjoy about the program?

All 24 students described at least one thing they enjoyed about the Positive Psychology program, with responses such as ‘how to find meaning in your life, even when things are looking down’, and ‘seeing change within yourself’. The comments were quite varied with the most common themes being that students enjoyed hearing about the experiences of others (e.g., ‘really great hearing about everyone’s various experiences’) and seeing video clips about key messages (e.g., ‘the videos!’).

What did you learn from the program?

When asked about their learning, all students made positive comments, with feedback covering all key topics covered by the Positive Psychology program. Most commonly, students described valuing learning about gratitude (e.g., ‘showing more gratitude, not taking things I love for granted’) and considering things from a more positive perspectives (e.g., ‘there are actually two sides of every situation, and that situations aren’t always negative’). Interestingly, in vast contrast to the Coaching Program, only one student related their learning back to their achievement (i.e., ‘more positive = better performance’).

What, if anything, are you personally applying from the program?

When asked what they were personally applying from the program, all students described valued learning. Many students described feeling more grateful (e.g., ‘to be grateful to family and friends’) and applying more kind and altruistic acts (e.g., ‘I’m really moved by the concept of random acts of kindness’). Students also mentioned that they were devoting more time to their relationships (e.g., ‘nurturing

relationships helps a lot with happiness’). Interestingly, despite being a core focus of the program, very few students mentioned noticing and developing their strengths as a key learning outcome across any of the qualitative questions.

Again, as can be seen, these qualitative responses echo and lend support to the quantitative findings that the positive psychology program had a positive impact on well-being. These qualitative comments thus serve as additional validation about the specific impact of the positive psychology program on well-being.

What didn't you find useful in the program and what would you change?

When asked what they didn't find useful about the program, many students made comments that some concepts weren't that relevant to them (e.g., ‘some sessions seemed common sense to me, and quite useless’). Students also described preferring the experiential content of the program to the background theory (e.g., ‘the introductions could have been a bit more exciting’). When asked what they would change about the program, several students suggested more activities (e.g., ‘less text more interaction’) and several commented on the timing of the sessions, with the recommendation that the sessions should be shorter in length but more regular in frequency.

Teacher Evaluations

Overall the feedback obtained from the four teachers involved in facilitating both the CB-SF Coaching intervention and the PPI was extremely positive. All facilitators found it easy to adhere to the manualised programs and to facilitate the program content. There was some feedback that further training to enhance knowledge of the content would have been beneficial (training consisted of 2 full days only).

The teachers were able to identify what they believed to have the most impact on students. For the CB-SF Coaching group it was the use of the GROW Model (a basic coaching model used to facilitate peer coaching sessions) and the identification of ANTS (automatic negative thoughts). For the PPI group it was primarily the practical activities which helped to ground topics like gratitude and flow.

Both groups identified that combining boys and girls worked well. The benefits seemed to be that they were well behaved in front of each other. The costs were that perhaps some weren't as outspoken given they were in front of peers they didn't know well. It was also observed that the boys appeared to be more confident in speaking up generally with one teacher observing *"the boys were so much more expressive with their emotions, their family experiences, their relationships...than the girls, which really surprised me!"*.

Finally there were no adverse reactions to any of the topics and generally all teachers believed both programs to be of significant value.

Discussion

There is an urgent need to investigate proactive approaches to health and well-being rather than focusing on issues related to overcoming dysfunction or adverse life events in at-risk populations (Linley & Joseph, 2005). In addition, proactive interventions that appeal to adolescents may offer both increases in well-being in the short term however also potentially provide them with the psychological tools to utilise in adulthood and beyond.

This study sought to further evaluate the effectiveness of two proactive mental health interventions being a CB-SF Coaching Intervention and a PPI. The results provide evidence that proactive mental health interventions offered to an adolescent population can lead to increases in both well-being and academic goal-striving, albeit

the two different programs investigated in the study led to different positive outcomes. More specifically the PPI program led to increases in mental well-being whereas the CB-SF coaching program led to increases in academic goal-striving.

Mental Well-Being

Results of the study support hypothesised increases in mental well-being for the PPI group only. There were significant increases in mental well-being reported from pre-intervention to completion relative to the Coaching group, although differences were non-significant at nine-months follow-up. In the qualitative feedback, several students in the PPI group described that they had integrated strategies for supporting their mental well-being in their lives, and, particularly, were nurturing their social relationships. It appears that these strategies lead to enhanced well-being, supporting previous research on PPIs and their positive impact on mental well-being.

The gains of the PPI group in terms of enhanced well-being were less pronounced at the nine-month follow-up time point. Therefore, it appears that the benefits were not sustained over time. Whilst a short-term increase in well-being may be beneficial, maintaining new behaviours is essential to longer term benefits. The issue of sustainability needs to be given serious consideration for any school wishing to implement such programs, with one idea being to integrate booster or reminder sessions that encourage students to revise and refresh their implementation of positive psychology strategies. The use of coaching strategies shown previously to enhance transfer of training (Olivero, Bane, & Kopelman, 1997) could be a useful addition to any PPI training.

Interestingly the CB-SF Coaching did not lead to increases in mental well-being. This is not consistent with previous research i.e., Green et al. (2007). It may

be that this specific population of high achieving students were more focused on academic outcomes than well-being per se, which was not the direct focus of this intervention. This is supported by the coaching participants' qualitative feedback, where it appears they directed a large proportion of their learning to their academic goals, for example, implementing improved study plans and overcoming homework procrastination.

Depression, Anxiety and Stress

Results of the study did not support hypothesised decreases in depression, anxiety and stress. Although overall means decreased on the subscales of Depression, Anxiety and Stress on the DASS-21 for both groups post-intervention, there were no statistically significant decreases as a result of the intervention. There was however a clear trend for students who took part in the Positive Psychology program to report fewer symptoms of depression by the third time point, relative to students in the Well-being as Usual group.

The results of the current study may be explained by a floor effect as the mean scores for all groups in the current study were within the Normal range (except for Anxiety which was at the boundary of normal) on all subscales of the DASS-21 pre intervention. It should also be noted that neither a CB-SF coaching or PPI are aimed directly at reducing mental illness and focus primarily on the enhancement of goal striving and well-being. Any reductions in self-reported depression, anxiety and stress would have been a beneficial by-product.

Cognitive Hardiness

Results of the study did not support hypothesised increases in Cognitive Hardiness. The PPI group did show an increase in Cognitive Hardiness at completion of the intervention, however, this difference did not reach statistical

significance. Similarly the Coaching group reported a similar trend but less pronounced whereas the Well-being as Usual group experienced decreases in cognitive hardiness overtime. These findings are intriguing as previous research has found evidence-based coaching to lead to clear increases in cognitive hardiness (Green et al., 2007). It is important to note, that in the qualitative data, students did describe several benefits that may suggest increases in resilience, such as new skills in identifying and readdressing automatic negative thoughts (Coaching group) and devoting attention to relationships and sources of meaning in life (PPI group). Taken into account the attrition of the sample, it may be that the differences were not pronounced enough to be detected in the small sample size. Further research in larger samples is required to ascertain whether the trends detected in this study reach statistical significance when there is more power to detect significant results.

Goal Striving

Results of the study supported hypothesised increases in academic goal-striving for the CB-SF Coaching group with its explicit focus on goal-striving. The CB-SF Coaching group means for academic goal-striving (successful) significantly increased from Time 1 to Time 2, compared to the PPI and the Well-being as usual condition. This result is consistent with previous research (Green et al., 2007). However there were no significant increases on personal goal-striving for the CB-SF Coaching group. It may be as previously hypothesised that this group was a specific population of high achievers with a strong focus on academic goal attainment, rather than personal goals, particularly at this point in time as the academic pressures of the final years of secondary school increase.

PPI versus CB-SF Coaching

Results of this study show that the two interventions tested differ in their

efficacy in terms of outcomes, i.e. the PPI led to increases in well-being whereas the CB-SF Coaching program led to increases in academic goal-striving. Whilst CB-SF coaching has been shown previously to positively impact on well-being (Green et al., 2006) it may be that the population utilised in this study, being high achievers, had a greater focus on academic achievement rather than well-being, which was not a direct target of the intervention.

Qualitative Data

The qualitative data collected in this study highlighted many positive benefits experienced by participants engaging in both interventions. Furthermore, it yielded intriguing insight into how the interventions were being applied, in terms of the Coaching group describing using their new skills and knowledge in their academic studies where the PPI group using their new skills and knowledge in terms of their relationships and lives more broadly. It would be interesting to explore whether similar patterns were found in samples of students from non-selective schools, who may not be as driven to perform academically. It also highlighted the ease with which committed and enthusiastic teachers could facilitate these types of programs which provides an added benefit to schools in terms of cost reduction and less reliance on external experts. Future research should include vital qualitative data, which can provide clinical insight and understanding into the complex human dynamic occurring within these types of interventions. This may also provide further information regarding the key processes involved in enhancing goal striving, well-being and overall change.

Follow-Up

There were no significant findings at the nine-month follow-up, which suggests any gains made were not sustained. Although there were no statistically

significant results found for the nine-month follow-up period, there are some evident trends – for example, the PPI group tended to show a trend for decreases in depression. In reflecting on these findings the power limitations inherent in a sample size of only 73 within a 3 x 3 research design should be kept in mind. Given these limitations, the findings are promising. Future research with larger sample sizes could explore this point in more depth.

In addition it should be noted that at the nine-month follow-up data collection point was the time of the students' final year at school (Year 12) and just prior to undergoing major trial examinations. As such these factors may have contributed to these results. It is however interesting to note though that there were no significant increases in stress, which may have been expected. In fact, a decrease (non-significant) in self-reported stress was maintained for the Positive Psychology group at this time.

Whilst we may hypothesise as to the reasons for these results, the reality is that there are many events that can occur within a nine-month period that may affect participants' well-being, such as life events, which were not recorded as part of this study. As such we may hypothesise that other confounding variables may have impacted on the follow-up results.

The other consideration is that of transfer of training and sustainability. However this issue is not confined to this study but more broadly in terms of transfer of training generally. There is a significant need to consider strategies that may lead to sustainability of gains in any shorter-term intervention such as this. Follow-up contact via emails, SMS or web-delivered reminders may potentially enhance transfer of training and sustainability of gains.

Further, it may be that with an adolescent population mixed gender groups

are not as effective as single gender groups. For example, a previous study (Green et al., 2007) utilised a female only sample and found significant increases in hope and hardiness through an evidence-based coaching intervention. Drawing potential parallels from academic achievement, research has also found that single gender schools do better academically (refer to Park, Behrman & Choi, 2013). It was also noted in the teacher evaluations that boys were more likely to speak up than girls and it may be that a single sex group of girls only may have facilitated more engagement and discussion.

Another potential explanation for a lack of significance is that group cohesiveness may have been an influencing factor impacting on the results. A measure of group cohesiveness was not utilised. The groups were mixed gender and many students did not know each other prior to commencement. There may have also been specific issues relating to the developmental stage of adolescence which may have affected the participants' capacity to interact as noted previously. However all teacher-facilitators commented that both groups were cohesive and worked well together. There is a long history of research highlighting group dynamics that may impact on the effectiveness of a group. There is a substantial research tradition in the psychological dynamics of small groups (for reviews, see Baron, Kerr, & Miller, 2003; McGrath, 1984).

Future Research

Based on this initial study, further research is warranted. The priority for future research is to repeat with larger samples to ascertain whether the trends that emerged in this study reach statistical significant in bigger sample sizes. Furthermore, it may be that a combined approach of CB-SF coaching and a PPI is more effective in improving mental well-being and reducing mental ill-health than

either separately and this should be included in any future research. In addition, as noted above, future research could compare the effects of different types of interventions based on gender. It may be that a goal-focused coaching intervention is more engaging and action-oriented which may appeal more to males whereas a PPI that encourages active self-reflection and group discussion, particularly on topics relating to relationships, may be more appealing and effective with a female population. Finally, given evidence-based coaching and PPIs more broadly are primarily aimed at a non-clinical population, further research is required to determine the effectiveness of these interventions on those who are languishing or exhibiting sub-clinical symptoms of mental ill-health.

Limitations

There are a number of limitations that need to be considered when interpreting these results. Firstly, participants were self-selected members of a community of students with high academic performance who therefore may not be representative of the general adolescent population. Additionally, the sample was highly cross-cultural, with 78% of the sample speaking at least one language other than English.

There was substantial attrition (almost 20%) which reduced the power to detect statistically significant results. Reasons for this are unclear. It may be that across several variables, there is a meaningful impact that has not been detected due to a failure to reach statistical significance. This is certainly likely in terms of the DASS depression subscale where, at Time 3, the PPI group reported half the symptoms of depression than the Well-being as Usual group; a result that is encouraging despite not being statistically significant. In Cohen's (1962) seminal power analysis of the *Journal of Abnormal and Social Psychology*, he concluded that

over half of the published studies were insufficiently powered to result in statistical significance for the main hypothesis. The real life complexities of completing research in busy school settings where recruiting and retaining large groups is challenging must be balanced by the importance of large sample sizes with adequate power to detect significant results.

This study relied on self-report inventories. Several limitations of self-report inventories have been noted which indicate the possibility that the response style of participants may not adequately reflect the actual construct of interest (Murphy & Davidshofer, 2004). The use of objective markers of well-being such as a physiological profile (e.g., measured by daily cortisol slope) may provide additional evidence for the impact of pro-active interventions on well-being. For example, in a recent study involving Australian adolescents participating in youth-led programs aimed at improving well-being and mental health, daily cortisol slope as a biological marker of well-being was utilized, with results providing support that youth-led programs have beneficial outcomes (Vella-Brodrick, Rickard, & Chin, 2013).

As such, in future it would preferable to minimise reliance on self-report inventories. Techniques that eliminate self-report recall biases could be utilised to enhance the scientific rigor of a study. For example, the use of complementary objective reports by others or the experience sampling procedure where researchers assess respondents' wellbeing at random moments in their everyday lives (Diener, 2000).

Study Implications

Results should be interpreted with caution given the identified limitations. Whilst this specific research failed to produce significant results in regard to increases in cognitive hardiness or reductions in depression, anxiety and stress, it

would be a shame to not pursue further research in this field given the significant results relating to positive impact on both well-being and academic goal striving. In addition this study provides further evidence supporting PPIs more generally (Bolier et al., 2013; Sin & Lyubomirsky, 2009).

Historically there have been limited resources allocated to mental health promotion interventions for adolescents, particularly in school settings. Most schools provide treatment by school counselors with minimal attention to broader mental health and well-being programs, such as those being promoted in the emerging field of positive education. In order to obtain further support and funding for interventions to promote mental health, an evidence base would need to be shown (Australian Health Ministers' Advisory Council, 2003). The rigorous scientific evaluation of all mental health promotion interventions including randomised control trials, such as the one herein, will continue to provide good evidence of efficacy for mental health promotion interventions.

When considering mental health promotion, interventions such as the CB-SF coaching program and the PPI program seem promising, though further research is still required. Such programs, with their lack of stigma, may assist in increasing social and emotional well-being and potentially achieve savings in mental health costs. It is also useful to note that a growing number of people are attracted to wider models of health maintenance and less medical style interventions (Eisenberg et al., 1998) and both CB-SF coaching and PPIs would fulfill this criteria.

Conclusion

Overall, this study is the first controlled study completed comparing a CB-SF coaching intervention and a PPI. The results are encouraging and provide continued support for the use of both PPIs and CB-SF Coaching interventions for adolescents.

In particular, given the results, it may be suggested that both interventions are useful and perhaps necessary in order to support both well-being and goal-striving in an adolescent population.

There were however non-significant findings relating to cognitive hardiness and depression, anxiety and stress. As noted in the limitations section, the sample size was small and hence power in this study was low. As such, further research with larger samples is needed. In addition, an exploration of the value of integrative programs that combine the best ingredients of the positive psychology and coaching programs would be worthwhile. There is increasing interest in the integration of positive psychology and coaching psychology, particularly in school settings (Green, in press). The implementation of coaching and positive psychology frameworks is gaining attention as a powerful route towards enhancing flourishing within the community and hence requires further research to support their use.

With clear links between physical and mental health now recognised, proactive mental health programs offered in school settings that provide opportunities for students to enhance their physical and psychological health may reduce the ever-increasing costs of disease and mental illness on society. Applied positive psychology programs such as CB-SF coaching and PPIs could potentially bring benefits at an individual, community and societal level.

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APPENDIX 1
Key Components of the CB – SF and PPI Interventions

Session	Example activities and content	Example practice exercise
CB-SF		
Introduction	Introduction to coaching psychology and to the coaching program. Goal-setting.	Reflection on irritations and considering potential goals.
Striving for Momentum	Reviewing the Roadmap of Change. Introduction to the GROW Coaching Model.	Peer Coaching using the GROW Model.
Moving Through Stages of Change	Reviewing the past week. Introduction to the REGROW Model of Coaching.	Peer Coaching using the GROW Model.
Maximising Potential	Weighing up pros & cons of change.	Peer Coaching using the GROW Model.
ANTS into PETS	Introduction to ANTS (automatic negative thoughts) and PETS (performance enhancing thoughts)	Peer coaching using the GROW Model.
Focus on Solutions	Introduction to the House of Change and solution focused approaches to change.	Peer Coaching using the GROW Model.
Being Resourceful	Mapping resources. Identifying challenges & strengths.	Peer Coaching using the GROW Model.
Staying on Track	Brainstorming possible actions to achieve goals.	Peer Coaching using the GROW Model.
Maintaining Momentum	Identifying strategies and support to maintain goal progress.	Peer Coaching using the GROW Model.
Celebrating Success	Reviewing the Program. Identifying achievements and goal progress. Identifying a reward; sharing learnings.	Sharing stories of success and learnings. Celebration.

Introduction	Introduction to positive psychology and discussion of the importance of mental health. Avenues for help seeking.	Identification of messages in the media related to sources of well-being.
Strengths Exploration and Discovery	General introduction to strengths and exploration of students' use of different strengths in various contexts.	Discussion of strengths with family members.
Strengths Identification and Application	Further exploration of strengths and ways that strengths can be used and misused. Developing plans for using strengths in new and creative ways.	Implementation of strengths plans.
Positive Emotions and Savouring	Explore the role of positive emotions in a flourishing life and explore the use of savouring in cultivating enhanced well-being and enjoyment.	Savouring through the senses.
Gratitude	Explore the role of gratitude in a flourishing life and experience simple strategies for cultivating gratitude.	Explore blessings each day.
Flow and Engagement	Introduce the concept of flow, identify sources of flow and engagement in life, and brainstorm ways to increase the frequency of flow activities.	Take notice of flow over the week.
Hope	Introduction to hope as a combination of goals, strategies to achieve the goals and motivation. Completion of a best-possible-self activity. Creation of collages that depict future possibilities.	Taking time each week to reflect on the best-possible-self.
Meaning	Explore what makes life meaningful and the role of kindness and altruism in a meaningful life.	Undertaking random act of kindness.
Positive Relationships	Explore the role of relationships in a fulfilling life and devote attention to building positive relationships through savouring and gratitude.	Reconnecting with important people.
Summary and conclusions	Reflect on experience of various activities and develop clear strategies for implementing positive psychology concepts in life.	Identifying strengths used throughout the program.

APPENDIX 2
Student Feedback Questionnaire - PPI

1. What did you enjoy about the program?

2. What did you learn from the program?

3. What, if anything, are you personally applying that you have learnt from the program?

4. What didn't you find useful in the program?

5. What would you change about the program?

6. Would you recommend this program to your peers?

No, Maybe, Definitely (please circle one).

1. Please circle the number which best represents your level of interest for each topic, with 1 being very low and 7 being very high interest.

Topic	1	2	3	4	5	6	7
	Very low			Medium			Very high
Introduction to positive psychology	1	2	3	4	5	6	7
Strengths exploration and discovery	1	2	3	4	5	6	7
Strengths identification and application	1	2	3	4	5	6	7
Positive emotions and savouring	1	2	3	4	5	6	7
Gratitude	1	2	3	4	5	6	7
Flow and engagement	1	2	3	4	5	6	7
Hope	1	2	3	4	5	6	7
Meaning	1	2	3	4	5	6	7
Positive relationships	1	2	3	4	5	6	7
Summary and conclusions	1	2	3	4	5	6	7

2. Please rate your level of satisfaction with the following aspects of the program overall:

	1	2	3	4	5	6	7
	Very low		Medium			Very high	
Content	1	2	3	4	5	6	7
Delivery	1	2	3	4	5	6	7
Practical Activities	1	2	3	4	5	6	7

3. How often did you...

	1	2	3	4	5	6	7
	Never		About half the time			Very often	
Complete the practice/homework activities between sessions?	1	2	3	4	5	6	7
Apply the concepts from this program in your life?	1	2	3	4	5	6	7

APPENDIX 2
Student Feedback Questionnaire – CB-SF Coaching

1. What did you enjoy about the program?

2. What did you learn from the program?

3. What, if anything, are you personally applying that you have learnt from the program?

4. What didn't you find useful in the program?

5. What would you change about the program?

6. Would you recommend this program to your peers?

No, Maybe, Definitely (please circle one).

1. Please circle the number which best represents your level of interest for each topic, with 1 being very low and 7 being very high interest.

Topic	1	2	3	4	5	6	7
	Very low			Medium			Very high
Introduction to Coaching	1	2	3	4	5	6	7
Roadmap of Change	1	2	3	4	5	6	7
SMART Goals	1	2	3	4	5	6	7
GROW Model	1	2	3	4	5	6	7
ANTS into PETS	1	2	3	4	5	6	7
Co-coaching	1	2	3	4	5	6	7
Solution Focus	1	2	3	4	5	6	7
House of Change	1	2	3	4	5	6	7
Identifying Resources	1	2	3	4	5	6	7
Summary and conclusions	1	2	3	4	5	6	7

2. Please rate your level of satisfaction with the following aspects of the program overall:

	1	2	3	4	5	6	7
	Very low		Medium			Very high	
Content	1	2	3	4	5	6	7
Delivery	1	2	3	4	5	6	7
Practical Activities	1	2	3	4	5	6	7

3. How often did you...

	1	2	3	4	5	6	7
	Never		About half the time			Very often	
Complete the practice/homework activities between sessions?	1	2	3	4	5	6	7
Apply the concepts from this program in your life?	1	2	3	4	5	6	7

APPENDIX 3
Teacher Feedback Questionnaire

1. What were your overall impressions of the program?
2. How did you go with the program delivery? Where you able to adhere to the program plan? Why or why not.
3. How much preparation was necessary for you to deliver the program?
4. What elements/aspects of the program do you think worked best from both a teaching and student perspective?
5. Which topics or concepts did you feel students found most interesting or engaging?
6. Which topics did you feel had the most impact on students?
7. Do you have any recommendations for improvement?
8. Were there any elements of the program that students found more challenging or difficult?
9. Did some students engage with the program more than others? If so, do you have any ideas on why that may be?
10. Did any student have a negative or adverse reaction to any of the topics?
Did any students in the program experience distress at any time? If so, how was that handled?
11. Do you have any advice or recommendations for teachers running a similar program in the future?