

**Student Mental Health in Higher Education: A Mixed Methods
Approach to Evaluating the Impact of a Positive Psychology Course**

Aflaha Rukhsaar Khan, BSc (Psych.) (Hons.)
School of Medicine and Psychology
The Australian National University, Canberra, Australia

A thesis submitted for the degree of
Doctor of Philosophy (Clinical Psychology) of The Australian National University

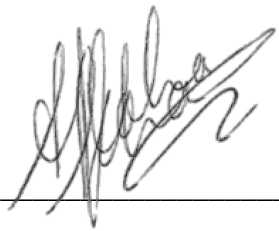
December 2023

© Copyright Aflaha Rukhsaar Khan, 2023

All Rights Reserved

Declaration

I declare that this thesis reports my original work. No part of this thesis has been accepted previously and presented for the award of any degree or diploma from any university, and to the best of my knowledge no material published by another individual is included in this thesis, except where due acknowledgement is given. Regarding multi-author manuscripts, I have specified my contributions in the *Author Contributions* sections of the relevant study chapters.



Aflaha Rukhsaar Khan

“Contrary to what we usually believe, the best moments in our lives are not the passive, receptive or relaxing times. The best moments usually occur when a person’s body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile.”

– Mihaly Csikszentmihalyi (1990)

To mum, nana, and nani

Without your sacrifices, this opportunity to pursue further education would not have
been possible.

Acknowledgments

I would like to acknowledge, first and foremost, my primary supervisor, Professor Elizabeth Rieger. Your invaluable insights have played an instrumental role in shaping this research, and I am deeply grateful for your unwavering guidance and warm words of encouragement, which have nurtured my sense of self-efficacy. It has been a privilege to learn from you.

I also extend my gratitude to my associate supervisors. To Associate Professor Richard Burns, thank you for being so generous with your time, and imparting your expertise in and enthusiasm for statistics and wellbeing. To Dr Eryn Newman, I extend my gratitude for your patience and support with facilitating my research in your role as the positive psychology course convener.

I would also like to thank the participants of this research, and the educators who facilitated participant recruitment and taught in the positive psychology course. Your involvement in and commitment to this research has been vital to its completion.

I would like to extend my gratitude to the Australian government and the Australian National University for providing financial and material supports, including free tuition and a living stipend during my candidature. I have also benefited from student services available through the Postgraduate and Research Students Association (PARSA) and the Research Development Unit, particularly the home stretch program, the thesis boot camp, and weekly writing in company sessions.

Thank you also to Denise Holden from Central Editing who reviewed this thesis. Reviewing strictly adhered to standard D (Language and Illustration) and standard E (Competence and Consistency) of the Institute of Professional Editors (IPEd) guidelines.

To the clients I have had the privilege of learning from and working alongside, you have served as a constant reminder of the importance of research. Thank you for the wisdom you have shared and your company on this journey.

To all my friends who have been on this journey with me, thank you for trouble shooting obstacles and celebrating every milestone. Biggest shout out to my office pals, Steph and Paige, and my PhD companions, Aly and Tori, for your enduring solidarity, countless chats, and coffee walks. This time in my life will be marked with wonderful memories of our friendships.

To my family, Mum, Shainaz Khala, Faisal Khalu, and Farhat, thank you for the warm meals, for the comfort of your company, and practical support to manage all the “life” that happened along the way.

Last but not least, to my best friend, Yasir, thank you for your stubborn belief in me, patience, helpful perspective, advice, and accountable coffee dates. This journey would have been much more difficult without your love, support, and company. I am so excited to see what the future holds for us beyond this season of our “good life”.

Abstract

More than 30 years of research has documented concerning trends in the mental health of university students. To address this issue, universities now recognise the importance of both reducing psychological distress and disorder, and enhancing wellbeing among students. As a result of this recognition, several high profile universities have incorporated positive psychology courses, which educate students about wellbeing theory, research, and practice, as a standard part of their curricula. However, high quality research into the impact of these courses on students' mental health is limited. Consequently, the current program of research aimed to: first, identify the students most in need of mental health support within universities; second, to investigate the impact of a comprehensive positive psychology course on students' mental health; third, to explore potential moderators of course efficacy; and fourth, to understand students' perspectives of this course. These aims were achieved in two key studies.

The first of these studies surveyed students completing a positive psychology course and students completing standard arts or science courses offered in the same semester at three points in time (the beginning of the semester, end of the semester, and six months later) over three consecutive years. The survey included self-report measures of wellbeing and psychological distress as outcomes of interest, and of basic demographic information and social identification with the university as potential predictors of these outcomes and moderators of course efficacy. The results indicated that students who identified less strongly with the university were the most vulnerable to experiencing deteriorations in mental health. Specifically, lower psychological distress and depression were observed at the beginning and end of the academic

semester among students with higher social identification with the university, irrespective of their course condition. In addition, comparing courses indicated that the positive psychology course had a significantly greater positive impact than the standard courses at the end of the academic semester in terms of generalised psychological wellbeing and distress, as well as for specific aspects of these constructs including autonomy, environmental mastery, and depression, with longer-term improvements observed specifically for overall psychological wellbeing and environmental mastery. Finally, greater environmental mastery was found among positive psychology students with higher social identification with the university, relative to students from standard courses, at the end of the semester.

The second study sought to enhance our understanding of the beneficial aspects of this positive psychology course, and achieved this using a qualitative approach to explore students' experiences within the course. After completing the course, students participated in focus groups to discuss various positive and negative aspects of the course. Using Interpretative Phenomenological Analysis, three superordinate categories (and 14 subcategories) were identified, namely, interest in wellbeing, beneficial to wellbeing, and balancing competing needs.

Together, the main findings of this thesis provide quantitative and qualitative evidence for the beneficial impact of positive psychology courses on wellbeing and psychological distress over time, which may stimulate future research into the efficacy and the implementation of these courses as one strategy in a whole-of-university approach to promoting wellbeing in higher education.

Table of Contents

Acknowledgments	i
Abstract	iii
List of Tables	ix
List of Figures.....	x
Chapter 1	Thesis Overview and Aims
1.1	Research Gaps and Methodological Limitations..... 2
1.2	Current Research Questions and Aims3
Chapter 2	The Mental Health of Students in Higher Education
2.1	Trends in the Mental Health of Students in Higher Education 8
2.2	Aetiology of Poor Mental Health in University Students.....12
2.3	Vulnerable Student Groups in Higher Education14
2.4	Mental Health Interventions for Higher Education17
2.5	Chapter Summary19
Chapter 3	Theories of Wellbeing
3.1	Defining Wellbeing Through the Ages.....21
3.2	Conceptualisation and Operationalisation of Wellbeing..... 23
3.2.1	Ryff's Model of Psychological Wellbeing 24
3.2.2	Alternative Theories of Psychological Wellbeing 28
3.3	Chapter Summary 35
Chapter 4	University Positive Psychology Courses
4.1	Positive Psychology: The Scientific Study of Wellbeing37
4.2	Description and Evaluation of Positive Psychology Courses 39
4.2.1	Qualitative Evaluations of Positive Psychology Courses..... 42
4.2.2	Quantitative Evaluations of Positive Psychology Courses 47
4.3	Aims and Hypotheses of the Present Program of Research..... 54

Chapter 5 Study 1: Evaluating the Impact of an Undergraduate Positive Psychology Course on Wellbeing and Psychological Distress 57

5.1	Introduction	59
5.1.1	Examining Predictors of Students' Mental Health.....	60
5.1.2	Positive Psychology Courses: A Population-Level Intervention for Students' Mental Health	62
5.1.3	Moderators of Positive Psychology Courses	66
5.1.4	Aims and Hypotheses of the Current Study	69
5.2	Materials and Methods.....	70
5.2.1	Participants.....	70
5.2.2	Study Design.....	73
5.2.3	Measures	73
5.2.4	The Positive Psychology Course.....	80
5.2.5	Procedure	82
5.2.6	Statistical Analyses	84
5.3	Results	91
5.3.1	Sample Characteristics	91
5.3.2	Predictors of Wellbeing and Psychological Distress over Time	93
5.3.3	Impact of the Positive Psychology Course and Moderators of Course Impact Over Time.....	99
5.4	Discussion.....	121
5.4.1	Summary of the Study Findings	121
5.4.2	Predictors of Wellbeing and Psychological Distress in University Students	122
5.4.3	The Impact of the Positive Psychology Course versus Standard Courses on Wellbeing and Psychological Distress Outcomes	126
5.4.4	Moderators of Course Impact.....	137
5.4.5	Practical Implications.....	138
5.4.6	Limitations and Future Directions	141
5.4.7	Conclusion	146

Chapter 6 Study 2: Eliciting Student Perspectives to Inform the Design of Positive Psychology Courses: A Qualitative Study 148

6.1	Introduction	150
6.2	Materials and Methods.....	154

6.2.1	Participants.....	154
6.2.2	The Positive Psychology Course.....	155
6.2.3	Procedure.....	157
6.2.4	Analysis	158
6.3	Results	159
6.3.1	Interest in Wellbeing.....	159
6.3.2	Beneficial to Wellbeing.....	161
6.3.3	Balancing Competing Needs.....	164
6.4	Discussion.....	167
6.4.1	Limitations and Future Directions	173
Chapter 7	General Discussion	177
7.1	Overview of the Main Findings	177
7.1.1	Study 1: Evaluating the Impact of an Undergraduate Positive Psychology Course on Student's Wellbeing and Psychological Distress	177
7.1.2	Study 2: Eliciting Students' Perspectives of a Positive Psychology Course to Inform its Design: A Qualitative Study.....	180
7.2	Implications of Current Findings for Practice in Higher Education	182
7.2.1	Positive Psychology Courses: An Academic Strategy to Support Student Mental Health.....	183
7.2.2	Essential Components of Positive Psychology Courses.....	186
7.2.3	A Collaborative Approach to Student Mental Health in Higher Education.....	189
7.3	Theoretical Implications of the Current Findings for Research	192
7.4	Limitations of the Current Research Program and Future Direction	194
7.5	Concluding Remarks	200
	References	202
	List of Appendices	267
	Appendix A: Study 1 Measures	268
	Appendix B: Study 1 Template for Intervention Description and Replication	279
	Appendix C: Study 1 Ethics Documentation	281

Appendix D: Study 1 Cohort Effects	288
Appendix E: Study 1 Drop-out Effects	289
Appendix F: Study 1 Tests of Fixed Effects for Predictors over Time Models	290
Appendix G: Study 1 Tests of Fixed Effects for Interaction and Moderation Models	291
Appendix H: Study 1 Pairwise Comparisons between Courses	292
Appendix I: Study 1 Pairwise Comparisons over Time	293
Appendix J: Study 2 Ethics Documentation	294
Appendix K: Study 2 Focus Group Questions	299

List of Tables

Table 3.1	<i>Definitions for the six aspects of psychological wellbeing.....</i>	27
Table 4.1	<i>Key quantitative evaluations of comprehensive positive psychology courses</i>	52
Table 5.1	<i>Demographic characteristics of the sample</i>	72
Table 5.2	<i>Model build-up strategy for investigating research question one (predictors of wellbeing and psychological distress outcomes over time)</i>	88
Table 5.3	<i>Model build-up strategy for investigating research question two (impact of positive psychology course over time)</i>	89
Table 5.4	<i>Model build-up strategy for investigating research question three (moderation analyses)</i>	90
Table 5.5	<i>Baseline characteristics and differences by condition (positive psychology versus standard courses)</i>	92
Table 5.6	<i>Estimates of effects from full and interaction models for wellbeing outcomes</i>	96
Table 5.7	<i>Estimates of effects from full and interaction models for psychological distress outcomes</i>	98
Table 5.8	<i>Descriptive statistics for wellbeing outcomes by course condition and time</i>	99
Table 5.9	<i>Estimates of effects from various MMRM investigating the impact of course over time on wellbeing outcomes</i>	100
Table 5.10	<i>Estimates of effects from moderation models (Step 2) wellbeing outcomes</i>	101
Table 5.11	<i>Descriptive statistics for psychological distress outcomes by course condition and time</i>	113
Table 5.12	<i>Estimates of effects from various MMRM investigating the impact of course over time on psychological distress outcomes</i>	114
Table 5.13	<i>Estimates of effects from moderation models (Step 2) psychological distress outcomes</i>	115

List of Figures

Figure 3.1	<i>Differences and Similarities between Ryff's Model of Psychological Wellbeing and Seligman's PERMA Model</i>	30
Figure 5.1	<i>The Interaction Effect of Time by Social Identification for Psychological Distress and Depression</i>	95
Figure 5.2	<i>The Interaction of Course by Time for Psychological Wellbeing</i>	104
Figure 5.3	<i>The Interaction Effect of Course by Time for Autonomy.....</i>	106
Figure 5.4	<i>The Interaction Effect of Course by Time for Mastery.....</i>	108
Figure 5.5	<i>The Interaction Effect of Course by Time by Social Identification for Mastery</i>	108
Figure 5.6	<i>The Interaction Effect of Course by Time by Social Identification for Positive Relations with Others</i>	110
Figure 5.7	<i>Summary of the Interaction Effect of Course by Time for Wellbeing Outcomes.....</i>	112
Figure 5.8	<i>The Interaction of Course by Time for Psychological Distress</i>	117
Figure 5.9	<i>The Interaction of Course by Time for Depression</i>	118
Figure 5.10	<i>Summary of the Interaction Effect of Course by Time for Psychological Distress Outcomes.....</i>	121

Chapter 1 Thesis Overview and Aims

Empirical research into the mental health of university students from different countries around the world suggests a concerning proportion may experience psychological disorder or heightened psychological distress during their time in higher education (Auerbach et al., 2018; Dessauvagie et al., 2022; Liu et al., 2018; Pereira et al., 2020; Sanci et al., 2022). Moreover, longitudinal research indicates the incidence of psychological disorder and related problematic outcomes, such as suicide, may be increasing over time (Storrie et al., 2010; Thorley, 2017; Williams et al., 2015), along with demand for university counselling and disability support services (Broglia et al., 2018; Gallagher, 2014; Stallman, 2012; Thorley, 2017). As a result of these concerning trends in student mental health, a large body of research has been concerned with identifying those most at risk, and thus most in need of mental health support. However, there remains a lack of longitudinal research into predictors of poor mental health among university students.

Research has also been dedicated to developing and evaluating various large-scale interventions to support students' mental health in higher education. Examples of these include cognitive-behavioural strategies, recreational programs, and academic strategies that entail changes to assessment or the curriculum (Conley et al., 2015; Fernandez et al., 2016; Regehr et al., 2013; Upsher, et al., 2022; Winzer et al., 2018; Worsley et al., 2022). One noteworthy academic strategy has emerged from the field of positive psychology in the form of, typically, semester-long, credit-bearing positive psychology courses dedicated to providing students with an understanding of the science and practice of wellbeing (Parks, 2014). However, research into their efficacy for supporting mental health is still in its infancy (Hobbs et al., 2022). There are few

quantitative or qualitative evaluations of positive psychology courses, indicating the potentially premature use of positive psychology courses for promoting students' wellbeing given the absence of sufficient evidence to support their efficacy.

1.1 Research Gaps and Methodological Limitations

Reviewing the limited number of efficacy studies on university positive psychology courses reveals various gaps in the research which need to be addressed. Firstly, existing studies have primarily investigated the immediate impact of completing a positive psychology course (Lambert et al., 2018; Yaden et al., 2021). It therefore remains important to investigate their longer-term impacts. Furthermore, prior research focuses on determining the impact of positive psychology courses on wellbeing (Young et al., 2022), and thus has mostly neglected examining their impact on psychological distress or disorder. More broadly, previous research has investigated the impact of positive psychology courses on generalised measures of wellbeing and mental illness (Hood et al., 2021), leaving unexplored their impact on specific components of both these categories of mental health. Additionally, few studies have examined moderators or mediators of course impact to determine who might benefit the most (or least) from these courses (Pastore & Fortier, 2023; Young et al., 2022), and how they may be optimised for specific student sub-populations in the university environment. Finally, few studies have evaluated students' perspectives of positive psychology courses, and their main findings predominantly provide insight into the beneficial and positive aspects of these courses, rather than ways in which they could be enhanced.

In addition to these gaps in the research, efficacy studies concerning positive psychology courses have been criticised for poor methodological rigour (Hobbs et al., 2022; Van Zyl et al., 2019, 2023). These criticisms stem from observations indicating

various sources of bias in these studies, including bias resulting from participant selection, reporting of findings, confounding variables, and missing data (Hobbs et al., 2022). Furthermore, positive psychology research has more broadly been criticised for the use of poorly constructed measures, an over-reliance on cross-sectional research designs, and the lack of qualitative and mixed methods research (van Zyl et al., 2023).

1.2 Current Research Questions and Aims

Accordingly, the overall objective of this program of research was to address the aforementioned research gaps using relatively more rigorous research methods. This was achieved by using both quantitative and qualitative research methods. Quantitative research methods were used to investigate the immediate and longer-term impact of a comprehensive positive psychology course on undergraduate university students' level of wellbeing *and* psychological distress. In addition, the current research explored demographic factors and social identification with the university as potential moderators of course impact to enable the identification of students who may benefit the most *or* least from positive psychology courses. Furthermore, qualitative research methods were utilised to evaluate students' perspectives on both the positive and negative aspects of this positive psychology course. Related yet distinct from this evaluation of the positive psychology course, the current body of research also sought to more broadly examine demographic factors, and social identification with the university, as predictors of wellbeing and psychological distress over time, as this may support future developments of positive psychology courses to target subgroups at risk in the university.

Specifically, this program of research addressed four main research questions:

1. Which students are most in need of wellbeing support in higher education?
2. Is a comprehensive positive psychology course, as one approach for supporting students' wellbeing, effective both upon course completion and in the longer-term?
3. Which students benefit the most (or least) from a comprehensive positive psychology course?
4. What are students' perspectives on the strengths and weaknesses of using a comprehensive positive psychology course to support their wellbeing?

This thesis comprises seven chapters. Following this overview chapter, there are three introductory chapters, two research chapters, and an overall discussion chapter to conclude. In Chapter 2, research concerning the state of students' mental health in higher education is reviewed. The need for novel approaches for supporting students' mental health is established, and wellbeing-enhancing interventions are introduced as one option. In Chapter 3, theories of wellbeing are discussed to provide an understanding of how the construct may be defined, operationalised, and enhanced. The relative benefits of enhancing psychological wellbeing over subjective wellbeing are deliberated, and Ryff's (1989a, 1989b) psychological wellbeing model is outlined as the theoretical foundation for the current program of research. Chapter 4 is the last of the introductory chapters. Here, positive psychology courses are introduced as a potentially advantageous approach for supporting students' wellbeing. Attention is drawn to the scarce evidence base concerning the impact of positive psychology courses, while the gaps in, and limitations of, the research are highlighted.

The first research study is presented in Chapter 5. This chapter describes the quantitative evaluation of a comprehensive positive psychology course. Specifically, a longitudinal controlled trial was conducted to measure the impact of this course on undergraduate students' wellbeing and psychological distress. Students completing a positive psychology course, and students completing standard arts or science courses offered in the same semester, were asked to complete a survey at three points in time (the beginning of the semester, end of the semester, and six months later) over three consecutive years. The survey included self-report measures of wellbeing and psychological distress as outcomes of interest, and basic demographic information and social identification with the university as predictors of these outcomes and moderators of the course's impact on these outcomes. Data was analysed using mixed models repeated measures analysis of variance, and analyses aimed to answer the first three research questions outlined above: identifying students most (or least) in need of support over time; demonstrating the impact of a positive psychology course on students' levels of wellbeing and psychological distress over time; and revealing who may benefit most (or least) from the course over time. Accordingly, this study addressed the aforementioned gaps in research using a wide range of comprehensive psychometric measures and a longitudinal research design.

The second research study is presented in Chapter 6. This chapter describes a qualitative evaluation of the same positive psychology course, conducted to enrich the empirical findings of Study 1. Specifically, students were invited to participate in focus groups to discuss various positive and negative aspects of the course, after they had completed the course in the first year it was offered. Focus groups were recorded, transcribed, and analysed for themes by two independent researchers using

Interpretative Phenomenological Analysis. As a result, this study aimed to address the fourth and final research question stated above, with the emerging themes providing insights into students' perspectives on the strengths and weaknesses of using a comprehensive positive psychology course to support their wellbeing.

The thesis concludes in Chapter 7, which provides a synthesis of key findings arising from this program of research and positions these findings in the context of existing research. It further draws practical and theoretical implications arising from these findings, and points towards future directions for research in light of the limitations of the current research. It discusses the contributions of this program of research to the evidence base concerning the impacts of positive psychology courses on university students' mental health. In combination, the body of research outlined in this thesis contributes to understanding the impact and implementation of positive psychology courses as one cost-effective and scalable strategy in a whole-of-university approach to promoting wellbeing in higher education.

Chapter 2 The Mental Health of Students in Higher Education

The historical origins of scholarly institutions dedicated to intellectual pursuits can be traced back to Aristotle (Pedersen, 1997), who argued that it is through the pursuit of knowledge that we may achieve fulfilment or a deep sense of psychological wellbeing (Aristotle, 350 B.C.E./2014; Arthur, 2019; Curren, 2013; Hummel, 1993). He referred to this construct as *eudaimonia*; a Greek word consisting of two parts, with “*eu*” roughly translating to good, and “*daimon*” meaning spirit. As a result, *eudaimonia* (“good spirit”), or psychological wellbeing, has become commonly associated with living a good and meaningful life and the highest of human potentials. Furthermore, in his famous text, *Nicomachean Ethics*, Aristotle suggested that *eudaimonia* may be achieved via the development of moral and intellectual virtues, with moral virtues reflecting the development of personal character and qualities such as courage, honesty, and discipline, while intellectual virtues reflected the development of knowledge and qualities such as wisdom and the ability to reason and understand. This dual focus on the development of both character *and* knowledge has influenced the traditional objective of universities as modern-day institutions for learning and education (Lewis, 2007; Newman, 1982; Pedersen, 1997). This becomes evident when perusing the mottos of leading universities around the world as commonalities appear in their reference to “light” and “truth”, broadly symbolising the connection between knowledge and self-actualisation reflected in Aristotelian philosophy.

On the basis of these historical and philosophical origins, it seems intuitive then to assume that the period of time spent learning at university would be a positive and enriching experience for students. In contrast to this ideal, however, empirical research

into students' mental health indicates a much bleaker reality. This chapter will provide a brief review of research on students' mental health in higher education, which will establish the need for additional interventions to support student wellbeing.

2.1 Trends in the Mental Health of Students in Higher Education

Concerning trends in the mental health of university students have been documented in the past three decades (Sharp & Theiler, 2018). Deteriorations in student mental health are apparent from the point of commencing university, with a significant increase in mental health problems observed as little as four weeks into the first semester compared to pre-university (Conley et al., 2014; Cooke et al., 2006; Fisher & Hood, 1987). Examining students over time also demonstrates poorer mental health outcomes at various points over the course of their undergraduate degrees relative to pre-university levels (Andrews & Wilding, 2004; Bewick et al., 2010; Cooke et al., 2006). Surprisingly, the most unfavourable outcomes have been documented at the end of the final year of study, leading some researchers to argue that students' mental health may not return to pre-university levels throughout the entire duration of their candidature (Bewick et al., 2010). Together, this data has led to the suggestion that the university environment or system places a substantial strain on students' mental health (Larcombe et al., 2021; Mulder & Cashin, 2015; Sharp & Theiler, 2018).

On the basis of these concerning trends, academic interest in the mental health and wellbeing of university students has been growing gradually over the last 45 years, with the most noteworthy rise in research articles on this subject observed in the past decade (Hernández-Torrano et al., 2020). A substantial literature on the topic has been established, with important contributions from different countries around the world and from diverse academic disciplines, including psychology and education

(Hernández-Torrano et al., 2020). This research has predominantly focused on establishing the prevalence, and understanding the correlates and consequences, of mental health disorders or psychological distress among university students, as well as investigating the efficacy of various interventions for supporting students' mental health (Hernández-Torrano et al., 2020). Research has, to a lesser degree, investigated the factors that contribute to positive mental health or wellbeing among university students (Hernández-Torrano et al., 2020), despite recognition among experts in the field that this is an equally important endeavour (International Conference on Health Promoting Universities and Colleges, 2015). Overall, then, there exists an extensive literature on the mental health of university students.

In terms of prevalence, similar rates of mental health disorder or psychological distress have been observed among students in higher education from different parts of the world. Evidence for this comes from the World Health Organization's (WHO) survey of 19 universities from eight relatively high income countries between 2014 to 2017, which collected data from 13,984 students in their first year of tertiary education (Auerbach et al., 2018). From this large sample, 31% of students had experienced at least one of the common mental health disorders in the last 12 months. Similarly, the American Health Association conducted a large survey of 108 universities in 2015 and collected responses from 67,308 students (Liu et al., 2018). The data revealed that one in four students had been either diagnosed with or treated for a mental health disorder in the past 12 months. Furthermore, a survey of 21,000 students from 140 universities in the United Kingdom revealed that one in five had been diagnosed with a mental health disorder, and one in three had experienced elevated levels of psychological distress (Pereira et al., 2020). Likewise, a survey of 14,880 Australian university students from

2019 revealed that approximately one in five students reported a mental health disorder and expressed elevated concern about their mental health (Sanci et al., 2022). Relatively fewer large-scale surveys have documented the prevalence of mental health disorders or psychological distress in non-Western university student samples, though their results are largely consistent with Western countries (Dessauvague et al., 2022; Wu et al., 2020). Together, this data has prompted international cause for concern regarding the mental health of university students.

Building on this data, researchers have attempted to determine whether university students may be more vulnerable to experiencing psychological disorder or distress than their non-student peers from the general population, as well as whether rates of psychological distress have been increasing over time. This research has yielded some inconsistent results. On one hand, studies have found higher rates of psychological distress (Cvetkovski et al., 2012; Houghton et al., 2010; Larcombe et al., 2016; Leahy et al., 2010; Maser et al., 2019; Mulder & Cashin, 2015; Stallman, 2010), and lower rates of wellbeing (Bore et al., 2016; Cardwell et al., 2013; Eloff & Graham, 2020) in student samples compared to the general population. In further support of this, researchers have documented double and triple the incidence of depression and suicidality, and a fivefold rise in the formal disclosure of a mental health disorder, over a 10-year period among university students (Storrie et al., 2010; Thorley, 2017). Over time there have also been reports of increasing demand for university counselling and disability services (Broglia et al., 2018; Gallagher, 2014; Stallman, 2012; Thorley, 2017). On the basis of this concerning data, some researchers have labelled the functioning of university students a mental health crisis (Evans et al., 2018).

In contrast to these observations, arguably more robust evidence exists for there being no difference in the level of mental health disorder and psychological distress between students and the general population (Blanco et al., 2008; Burns & Crisp, 2020; Macaskill, 2013; McManus & Gunnell, 2020). Notably, a 17-year longitudinal study compared data from students with non-students to demonstrate little difference in both mental health and wellbeing (Burns & Crisp, 2020). Similarly, another study found the overall prevalence of common mental health disorders, suicide attempts, and self-harm did not differ over a 14-year period between students and non-students (McManus & Gunnell, 2020). There is even some evidence indicating there may be long-term benefits arising from attending university, particularly for specific minority groups such as individuals who identify as LGBTQ or were raised in low socioeconomic households (Balloo et al., 2022). Research indicating differences between student and non-student groups has also been more broadly criticised for using inappropriate recruitment methods, which overtly invite students to take part in surveys about their mental health or experiences at university, and consequently yield a sample that may over represent students who are struggling. Moreover, comparing data between studies introduces concerning confounds, as data is often collected using different methods and across different time periods. Accordingly, it has been suggested that the rising incidence of psychological disorder and distress, and demand for psychosocial services among university students observed may be due to their greater willingness than non-students to seek help (Burns & Crisp, 2020).

Despite these inconsistencies in the literature regarding the level of risk carried by being a university student, there is agreement among researchers that universities need to better meet the increasing demand for mental health services to support students'

during their tertiary education. Furthermore, only a small proportion of those in need of support are actually accessing the psychosocial services currently available (Auerbach et al., 2016; Gallagher, 2014; Macaskill, 2013; Stallman, 2012; Storrie et al., 2010), despite increasing demand for support, indicating the need for additional, more acceptable forms of support and intervention. In addition, universities could do more to address the unique stressors in the university environment that may be detrimental to students' mental health (Larcombe et al., 2021).

It is further imperative that universities invest in additional ways to support student mental health, as poor mental health outcomes among students have been associated with a wide range of negative academic and personal outcomes. These negative outcomes include: impaired functioning (Mulder & Cashin, 2015; Stallman & Shochet, 2009), poorer academic performance (Andrews & Wilding, 2004; Duffy et al., 2020; Eisenberg et al., 2009; Wyatt & Oswalt, 2013), dissatisfaction with tertiary education and early withdrawal from university (Arria et al., 2013; Auerbach et al., 2016; Devine & Hunter, 2017; Lipson & Eisenberg, 2018), various problematic behaviours such as substance use, suicide, self-harm, and more generally, the problematic over-reliance on escape-avoidance coping (Cvetkovski et al., 2012; Deasy et al., 2014; Eisenberg et al., 2013). These negative outcomes have the potential to affect not only students' academic success, productivity, and future careers, but also the public image and profile of universities.

2.2 Aetiology of Poor Mental Health in University Students

Various explanations have been put forth for these concerning trends in students' mental health outcomes. Firstly, the majority of individuals commence university in early adulthood, typically immediately or soon after completing secondary education.

As a result, the start of university typically coincides with the transition from adolescence into adulthood. This transition is marked by various developmental challenges, such as moving out of the family home and establishing new relationships, which require greater personal responsibility and independence and may lead to feelings of social isolation or loneliness (Conley et al., 2014; Schulenberg et al., 2004). These developmental challenges further coincide with the peak age of onset for common mental health disorders (Kessler et al., 2007; Patel et al., 2007; Solmi et al., 2022). Thus, the concurrent transition to university and adulthood is likely to create fertile ground for the development or exacerbation of mental health difficulties (Macaskill, 2013).

A second factor potentially driving poorer mental health may be the characteristics of universities themselves. Factors unique to the university, such as course experiences, may increase students' vulnerability to poor mental health (Brooker & Vu, 2020; Larcombe et al., 2016). In one noteworthy study, course experiences – such as workload, assessment-related stress, a sense of belonging to the university, the level of autonomy support received from teachers, peer engagement, and intrinsic motivation to study – considered together, predicted students' wellbeing more strongly than various demographic and situational factors, or progress and participation in the course (Larcombe et al., 2021). In further support of this, qualitative research found that negative academic experiences, such as being alone in lectures or tutorials, assessments, exams, competition, deadlines, time pressures, and poor guidance, were the conditions most identified during which students “felt bad” during their university education (Brooker & Vu, 2020).

Finally, barriers to accessing mental health services within universities may contribute to and perpetuate poor mental health among students. Several barriers have

been identified, including factors that are internal and external to individual students (Cage et al., 2020; Hartrey et al., 2017). In terms of internal factors, fear of stigma related to disclosing mental illness and symptoms of mental illness (e.g., poor motivation) may inhibit students from seeking support. External barriers to accessing support include lack of appropriate mental health support or long waitlists (Raunic & Xenos, 2008; Stallman, 2012), as well as potential time constraints resulting from workload (Pickles et al., 2012). As a result of these barriers, it is likely that students may not be receiving early intervention to prevent further deterioration in their mental health and wellbeing.

2.3 Vulnerable Student Groups in Higher Education

In an environment where the need for wellbeing support exceeds the available resourcing, targeted population-level approaches provide a means of assisting those students who are most at risk of deterioration in their mental health during the challenges of their university studies. Accordingly, extensive research has been dedicated to identifying the students who may be most vulnerable to experiencing mental health problems, and thus, most in need of these supports from their universities (Sheldon et al., 2021). As this literature is extensive, the following summary is not exhaustive but intends to provide a succinct overview of the students most at risk, with specific consideration given to demographic and psychosocial risk factors.

An extensive literature has examined demographic variables as predictors of psychological disorder and distress in tertiary students. Broadly summarised, female students consistently report poorer mental health compared to their male counterparts (Auerbach et al., 2018; Cvetkovski et al., 2012; Eisenberg et al., 2007; Said et al., 2013; Stallman, 2010). Additionally, LGBTQ students appear to be at greater risk (Auerbach et al., 2018; Campbell et al., 2022; Smithies & Byrom, 2018). Yet some inconsistencies

have been observed regarding the risk carried by age. The majority of studies indicate younger students may be more vulnerable due to the typical age of onset for common mental health disorders and/or their relatively lesser developed capacity to regulate emotions (Campbell et al., 2022; Cvetkovski et al., 2012; Pereira et al., 2020). In contrast, some studies indicate poorer outcomes for mature-age students due to their generally greater financial stressors, and additional work and family commitments (Auerbach et al., 2018; Burns & Crisp, 2020; Richardson et al., 2017). Additionally, there is also some evidence indicating lower educational achievement, including lower grades in secondary school and lower levels of academic qualification (i.e., undergraduate versus postgraduate) may be prognostic of poorer mental health (Baik et al., 2015; Hjorth et al., 2016; Mahon et al., 2022; Winefield et al., 2012). Moreover, lower socioeconomic status has been associated with poorer mental health among students in university (Browne, 2017; Eisenberg et al., 2007; Ibrahim et al., 2013; Richardson et al., 2017). Various studies have also documented worse mental health outcomes among international students (Alharbi & Smith, 2018; Brunsting et al., 2018), indigenous and ethnic minorities (Lipson et al., 2018; Stoll et al., 2022), and students undertaking highly demanding programs of study, such as medicine and law (Cuttillan et al., 2016; Kelk et al., 2010; Larcombe et al., 2020; Lewis & Cardwell, 2019; Maser et al., 2019).

Similarly, extensive research has also been dedicated to identifying psychosocial predictors of psychological disorder and distress in university students. A recent review of the literature broadly categorised these factors into academic, social, psychological, lifestyle, and physiobiological factors (Limone & Toto, 2022). From this review, academic factors predicting poorer mental health outcomes included highly demanding programs of study, mastery of subject, being an international student, studying full-

time, and receiving lower grades. Additionally, social isolation, loneliness, poor housing and poverty, and experiences of bullying and discrimination were identified as social predictors of poor mental health among students, whereas experiences of childhood trauma, abuse, or neglect, and longer-term or severe stress were identified as psychological predictors. Furthermore, living away from family, increased alcohol and drug use, and poor sleep habits, nutrition, and physical activity were lifestyle factors associated with poor mental health. Finally, genetic and biological vulnerabilities, family history, pregnancy or birth complications, brain injuries, and chronic health conditions were found to be physiobiological factors contributing to the development of psychological disorders or distress in university student populations. It is worth noting however, that the latter social, psychological, lifestyle, and physiobiological factors may not be specific to students but rather more general predictors of mental distress.

Moreover, further research is needed to understand whether the impact of these risk factors varies over the duration of a student's candidature, as few studies have explored how demographic and psychosocial factors affect psychological distress and disorder over time. This is an important limitation in the literature as research exploring predictors of both negative *and* positive mental health outcomes over time may provide important insights into not only those students who are most or least at risk, but also the periods of study that may pose the greatest challenge to them. This information would enhance universities' capacity to support students' mental health and wellbeing by using limited resources to develop interventions for specific subgroups of students during critical periods of risk.

2.4 Mental Health Interventions for Higher Education

In an attempt to address the mental health challenges experienced by a substantial proportion of university students, universities have made free disability and counselling services available. While effective (Murray et al., 2016) and tailored to address student issues, these services focus on the individual, and high counsellor-to-student ratios and low utilisation rates indicate that they are inadequate as the sole approach for supporting the mental health of students (Cooke et al., 2006; Gallagher, 2014; Raunic & Xenos, 2008; Stallman, 2010, 2012).

In recognition of this, research into various complementary, population-based interventions has proliferated in the last decade, including interventions broadly categorised as setting-based interventions (i.e., structural and institutional changes) (Fernandez et al., 2016; Upsher et al., 2022), promotion and prevention programs (Conley et al., 2013), and stress- and mental-illness-reducing interventions (Winzer et al., 2018; Worsley et al., 2022). More specifically, these interventions include academic (Brooker et al., 2019; Fernandez et al., 2016; Reed et al., 2011; Smith & Baik, 2019; Upsher et al., 2022), cognitive-behavioural (Conley et al., 2013; Winzer et al., 2018; Worsley et al., 2022), mindfulness (Conley et al., 2013; Dawson et al., 2020; Worsley et al., 2022), relaxation (Conley et al., 2013; Worsley et al., 2022), and recreational or psychoeducational approaches (Regehr et al., 2013; Winzer et al., 2018; Worsley et al., 2022) to name a few (see Christensen & Kennedy [2023] for a more extensive list of interventions). While the various publications cited above suggest the majority of these interventions are efficacious, research from the United Kingdom contends the evidence for their efficacy is mixed at best (Robertson et al., 2022).

Accordingly, novel interventions for supporting students' mental health are needed. The development of some of the abovementioned and various other novel interventions has been inspired by *The Okanagan Charter: An International Charter for Health Promoting Universities and College* (2015). The Charter conceptualises health as a complete state of physical, mental, and social wellbeing, and thus, provided a shift in research and practice beyond pathology to optimal human functioning. This has spurred the development of health-promoting university frameworks around the world (Dooris, 2001; Newton et al., 2016). Despite some differences, these frameworks broadly recognise the complexity of the problem, recommending a multi-strategy approach that acts at various levels of the university, and importantly, moves the goal beyond treating mental illness to also promoting mental health and wellbeing (Taylor et al., 2019). These frameworks are commonly referred to as whole-school or whole-of-university approaches to promoting wellbeing in institutions of higher education, and several case studies on and guidelines for their implementation are available in the literature (Christensen & Kennedy, 2023; Dooris et al., 2020; Larcombe, 2016).

In support of this relatively more comprehensive and novel approach to supporting students' mental health, a growing body of evidence suggests enhancing positive mental health or wellbeing may buffer against psychological disorder and distress (Grant et al., 2013; Keyes et al., 2010; Lamers et al., 2015; Ryff, 2014; Wood & Joseph, 2010). Evidence for this is provided by studies demonstrating the beneficial impact of positive mental health or wellbeing on psychopathology (Trompetter et al., 2017). Specifically, increases in wellbeing over time have been shown to predict decreases in mental illness, while, conversely, decreases in wellbeing over time have been found to predict increases in mental illness (Grant et al., 2013; Keyes et al., 2010;

Lamers et al., 2015; Ryff, 2014). Furthermore, researchers who have attempted to identify common profiles of wellbeing within student samples, observed that higher wellbeing profiles were associated with lower depression and the use of healthier coping strategies, relative to lower wellbeing profiles (Bhullar et al., 2014; Freire et al., 2016). In addition, positive mental health has been associated with various beneficial academic outcomes (Christensen & Kennedy, 2023), including enhanced learning (Duckworth & Cara, 2012) and higher academic achievement (Antaramian, 2015). This literature, combined with the mixed efficacy of existing wellbeing promoting interventions, underscores the imperative to continue researching interventions for promoting student wellbeing within higher education. The development of efficacious wellbeing promoting interventions may further provide an essential complement to pathology-reducing interventions for supporting students' mental health.

2.5 Chapter Summary

Despite universities traditionally aspiring to support the personal and intellectual development of a person, research into students' mental health indicates that the university environment or system places a substantial strain on students' mental health. The research reviewed in this chapter revealed concerning trends in students' mental health over the course of their undergraduate degrees, and demonstrated similar rates of mental health challenges in university students from different parts of the world. Furthermore, potential causes of poor mental health among university students were discussed, including the developmental transition to university and adulthood, negative coursework and university experiences, and barriers to accessing support services. In addition, students most at risk within universities were identified on the basis of key demographic and psychosocial predictors of poor mental health, while noting the need

for more longitudinal data. Finally, existing approaches for supporting students' mental health in higher education were outlined to highlight the need for additional interventions that focus specifically on the promotion of positive mental health and wellbeing. In summary, this chapter aimed to illustrate the complex and multifaceted landscape of student mental health in higher education and establish a foundation for the current program of research to delve into new and complementary approaches for intervention.

Chapter 3 Theories of Wellbeing

Alongside interventions designed to prevent or treat psychological disorders, interventions designed to promote positive mental health or wellbeing may provide a complementary approach for supporting students to attain optimal functioning in both their academic and personal lives while at university. In order to design and evaluate effective wellbeing interventions, however, it is essential to define wellbeing as a psychological construct and to identify its components. An extensive literature, spanning centuries and diverse civilisations in human history, has engaged in discourse regarding the topic of wellbeing. This chapter will provide a brief history of wellbeing theory, and review in more depth contemporary psychological theories of wellbeing to provide a foundation for designing and evaluating wellbeing interventions.

3.1 Defining Wellbeing Through the Ages

The concept of wellbeing has a long and rich history, stemming back to approximately 2,000 years ago in ancient Greece and arguably the beginnings of Western philosophy itself (Stoll, 2014). It is thought that Socrates was the first philosopher to theorise about happiness. However, potentially the most cited and influential philosophical perspective on wellbeing has been provided by Aristotle (Hummel, 1993). Central to Aristotle's formulation of wellbeing was the concept of *eudaimonia*, which he defined broadly as living well and acting well. He argued that happiness, as a transient state of subjective being, was the outcome of *eudaimonia*. Aristippus and Epicurus, on the other hand, emphasised *hedonia*, which reflected an orientation towards seeking pleasure and contentment, as central to wellbeing (Irwin, 1991; Rosenbaum, 1990). This distinction between hedonic and eudaimonic wellbeing, or in other words, the pursuit of human happiness versus human potential, continues to

be important in contemporary psychological theories of wellbeing (Ryan & Deci, 2001; Stoll, 2014).

Despite this long and rich history, wellbeing has remained a challenging construct to define (Dodge et al., 2012). Many theories exist as it has been a perennial concern for different cultures and civilisations across time (Lomas et al., 2021), and there is both substantial overlap *and* disagreement among them. Specifically, wellbeing has been a topic of scientific enquiry for contemporary researchers from a variety of different theoretical and academic disciplines, such as philosophy, theology, psychology, sociology, and economics (Burns & Browning, 2016; Dodge et al., 2012). Accordingly, different aspects of wellbeing have been identified and emphasised depending on the perspective adopted. To highlight the potential for divergence in definitions, philosophical and psychological perspectives have broadly considered the essential conditions for an individual to feel good and function well in life (Ryan & Deci, 2001), whereas economic and social indicators of wellbeing have focused on indices such as the wealth of the nation, access to health care and education, and the affordability of housing as objective measures of quality of life (Burns & Browning, 2016). Accordingly, wellbeing appears to be a multifaceted concept and, thus, challenging to clearly define in research (Dodge et al., 2012).

Focusing on contemporary psychological definitions of wellbeing as the theoretical basis of this program of research, two broad and distinct approaches to defining and measuring wellbeing in current psychological research remain, namely, the hedonic and eudaimonic approaches (Dodge et al., 2012; Ryan & Deci, 2001). The hedonic approach proposes that wellbeing consists of subjective feelings of happiness, and generally involves acting in ways that maximise pleasure and minimise pain. In

contrast, the eudaimonic approach equates wellbeing to positive psychological functioning, going beyond subjective feelings to understand the various experiences and activities that give a person meaning and purpose, and enable them to function optimally and thrive. As such, within contemporary psychological research, the hedonic approach to wellbeing is typically measured by the construct of subjective wellbeing, while the eudaimonic approach to wellbeing is typically measured by the construct of psychological wellbeing. Much of the psychological research prior to this century has focused on measuring subjective wellbeing, often reducing the construct to happiness, despite more recent research indicating that it consists of three key components: life satisfaction, the experience of positive emotions, and the absence of negative emotion (Diener et al., 2017). Research into psychological wellbeing has also grown substantially in the last two decades, resulting in the identification of various components of, or criteria, for psychological wellbeing.

3.2 Conceptualisation and Operationalisation of Wellbeing

Based on these two distinct but related approaches to defining wellbeing, several multidimensional models and corresponding assessment measures of wellbeing have been developed. It has been argued that no one model of wellbeing is superior (Butler & Kern, 2016), with each model valuable for operationalising the abstract concept of wellbeing in different but useful ways. While both subjective and psychological wellbeing provide important avenues for research, the focus of this program of research is on psychological wellbeing, primarily on the premise that the pursuit of short-term happiness may at times be at odds with the pursuit of longer-term psychological wellbeing, as the latter may come with a degree of discomfort, effort, and discipline

(Lykken & Tellegen, 1996; Waterman, 1993). Various researchers have even proposed that being able to understand and regulate negative emotions, and feel and express the full range of emotions, may be necessary for achieving high psychological wellbeing (Adler & Hershfield, 2012; Gruber et al., 2011; Kashdan et al., 2015). In line with this, it has been proposed that enhancing psychological wellbeing may enable university students to persist and even thrive in the face of the subjective feelings of unhappiness, dissatisfaction, or stress associated with higher education (Braaten et al., 2019; Ruini & Ryff, 2016).

3.2.1 Ryff's Model of Psychological Wellbeing

Among the numerous contemporary psychological theories of wellbeing, Carol Ryff's (1989a) model focuses specifically on psychological wellbeing and is arguably the most comprehensive. Accordingly, this model has been selected as a foundational theory of wellbeing for the present program of research. Ryff (1989a) recognised that despite various influential theories of wellbeing from prominent authors such as Allport (1961), Bühler (1935), Erikson (1994), Frankl (1959), Jahoda (1958), Jung (Jung & Dell, 1955), Maslow (1968), Neugarten (1973), and Rogers (1995), the literature lacked a comprehensive, theory-guided framework that could be translated into a reliable and valid psychometric measure of psychological wellbeing, and this limited empirical research (Ryff, 1989a). Moreover, this extensive list of theoretical perspectives on psychological wellbeing resulted in a diverse and extensive range of criteria for wellbeing, which made it difficult to determine which of these is essential to examine empirically.

With this in mind, Ryff (1989a) aimed to review and synthesise the common characteristics of these pre-existing theories into one integrative and comprehensive model of psychological wellbeing. By systematically reviewing and synthesising the literature, she identified six key components of positive psychological functioning that were repeatedly discussed by different theorists: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth.

From these aspects of psychological wellbeing, self-acceptance was the most commonly mentioned in earlier texts. Self-acceptance is defined broadly as having a positive attitude towards oneself and includes the ability to acknowledge different aspects of the self (Ryff, 2014). In addition to self-acceptance, the importance of interpersonal relationships characterised by warmth and trust, the opportunity to be autonomous, feelings of mastery and competence in one's environment, and a sense of direction which provides meaning and purpose in life, were identified as themes or key points of convergence between the earlier theoretical perspectives. The final criterion of wellbeing identified was labelled personal growth, which refers to the importance of continuous development towards one's highest potential, and the ability to continually learn, adapt, and grow across time and space. Accordingly, personal growth is not considered the end state of psychological wellbeing, unlike the aforementioned components, but the process via which a person may reach it. In summary, Ryff's (1989a) review and synthesis of earlier influential texts suggests that these six factors may be the most essential criteria for psychological wellbeing.

Ryff (1989b) went on to operationalise her comprehensive model of psychological wellbeing by constructing a measure of these six criteria, that is, the Psychological Wellbeing Scale (Ryff, 1989b). Scale construction initially entailed generating a large

pool of items, from which the most reliable and valid items were selected for each criteria of psychological wellbeing (Ryff, 1989b). On the basis of this research, the scale was refined to 20 items per criterion on a six-point scale ranging from *strongly agree* to *strongly disagree*. Descriptions of high and low scorers for each criterion are provided in Table 3.1. In support of its validity, significant positive correlations were observed between this measure and existing measures of positive functioning, and significant negative correlations were found with existing measures of negative functioning. More specifically, strong correlations were observed between each of the “self-acceptance”, “environmental mastery”, and “purpose in life” subscales and existing measures of wellbeing; whereas, the “positive relations with others”, “autonomy”, and personal growth” subscales only demonstrated weak correlations with existing measures of wellbeing. Ryff (1989b) brings attention to this, and argues that the latter subscales remain important criteria for wellbeing, which previous measures have neglected to define and measure. Over the last three decades, Ryff’s (1989b) original 120-item scale has been refined into various shortened versions, ranging from 84 to 18 items (Ryff & Keyes, 1995; Shryock & Meeks, 2018), which have been used to gather further empirical evidence for the model itself and its utility for operationalising psychological wellbeing (Abbott et al., 2010; Ryff, 2014).

Table 3.1*Definitions for the six aspects of psychological wellbeing*

Criteria	Definition
<i>Autonomy</i>	
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; relies on judgements of others to make important decisions; conforms to social pressures to think and act in certain ways
<i>Environmental Mastery</i>	
High scorer	Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values
Low scorer	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
<i>Personal Growth</i>	
High scorer	Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realising his or her 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 with life; feels unable to develop new attitudes or behaviours
<i>Positive Relations with Others</i>	
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, concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others
<i>Purpose in Life</i>	
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

Criteria	Definition
Low scorer	Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose in past life; has no outlooks or beliefs that give life meaning
<i>Self-Acceptance</i>	
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 he or she is

Note. Adapted from “Psychological well-being revisited: Advances in the science and practice of eudaimonia” by C. Ryff, 2014, *Psychotherapy and Psychosomatics*, 83(1), p. 12.

Copyright 2013 by Karger Publishers, Basel, Switzerland.

3.2.2 *Alternative Theories of Psychological Wellbeing*

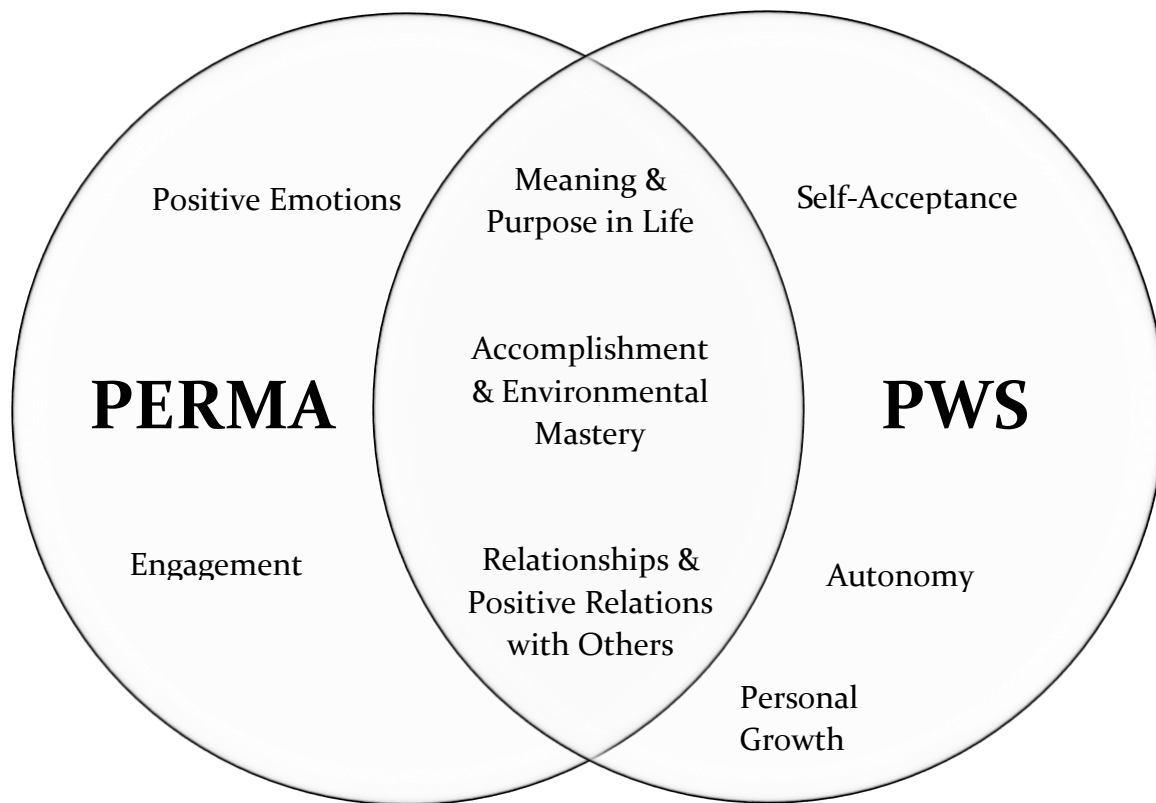
Various alternative conceptualisations and corresponding measures of wellbeing exist which complement Ryff's (1989b) model of psychological wellbeing. Among the most notable of these are the PERMA model (Seligman, 2011; Seligman & Csikszentmihalyi, 2000), the dual-continua model (Jahoda, 1958; Tengland, 2001; Tudor, 1996), the bipolar model (Huppert & So, 2013; Keyes, 2002, 2005), subjective wellbeing models (Diener et al., 2010, 2017), and self-determination theory (Ryan et al., 2008; Ryan & Deci, 2001). These models describe essential criteria for wellbeing that are both shared and distinct from Ryff's (1989b) model of psychological wellbeing, and all but the subjective wellbeing models focus on both the hedonic and eudaimonic elements of wellbeing.

To begin with, the PERMA model of wellbeing was conceived by Martin Seligman almost a decade after Carol Ryff proposed her model of psychological wellbeing

(Pawelski, 2022; Seligman, 2004, 2011). The initial instantiation of this model was conceptualised as the theory of authentic happiness and outlined positive emotion, engagement, and meaning as three key factors of wellbeing (Seligman, 2004). This theory was later reconceptualised into the PERMA model, which proposed five key factors of wellbeing: positive emotion, engagement, relationships, meaning, and accomplishment (Seligman, 2011). Various attempts have been made to operationalise the PERMA model, with Butler and Kern's (2016) PERMA Profiler the most readily used in research with adults given that it is both comprehensive and brief. More recently, researchers have discussed the importance of measuring drivers of wellbeing, and as a consequence, have added physical activity, nutrition, sleep, and optimism to the model (Iasiello et al., 2017). This is commonly referred to as the PERMA+ model of wellbeing. This is one example of several adaptations of the PERMA model which exist in the literature (Cabrera & Donaldson, 2023). However, psychometrically reliable measures of these adapted models do not exist. Despite the popularity of this model in both research and the mainstream media, Seligman (2011) does not make clear the process via which these factors were identified, and suggests the theory is novel despite substantial overlap with Ryff's (1989b) model of psychological wellbeing (see Figure 3.1). Nonetheless, researchers suggest the PERMA model is underpinned by utilitarian, virtue, hedonic, and eudaimonic philosophical traditions (Lambert et al., 2015b).

Figure 3.1

Differences and Similarities between Ryff's Model of Psychological Wellbeing and Seligman's PERMA Model



Additionally, dual-continua or dual-factor models argue that positive mental health (or wellbeing) and mental illness are distinct constructs rather than extreme ends of one continuum, with this approach first proposed by Keith Tudor (1996). Dual-continua models make explicit that the absence of mental illness is not equivalent to positive mental health or wellbeing. Accordingly, this model suggests that it is possible for people to experience differing, and potentially incongruent, levels of mental health and illness. That is, it becomes possible for individuals to experience a high degree of wellbeing, despite fitting the criteria for a mental health disorder. On the basis of this model, four distinct subgroups of mental health have been identified (Iasiello & van

Agteren, 2020): the “complete mental health” subgroup experience no mental illness *and* high wellbeing; the “vulnerable” subgroup experience low mental illness *and* low wellbeing; the “symptomatic but content” subgroup experience high mental illness *and* wellbeing; and the “struggling” subgroup experience high mental illness *and* low wellbeing. As a result, both mental illness and wellbeing may be important and complementary targets of intervention.

An alternative approach was adopted by Corey Keyes and Felicia Huppert (Huppert & So, 2013; Keyes, 2002). Specifically, these researchers defined wellbeing, like mental illness, as a syndrome or condition characterised by a cluster of symptoms of both positive feelings *and* functioning. Keyes (2002) developed 13 criteria for wellbeing which mirror the criteria for a major depressive episode, as specified by the fourth edition text revised version of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*; American Psychiatric Association, 2000). Huppert and So (2013) used a similar technique to derive 10 criteria for wellbeing which mirror the criteria for depression and anxiety, as specified by both the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*; American Psychiatric Association, 1994) and the 10th revision of the *International Classification of Diseases (ICD-10)*; World Health Organization, 1992). Using this methodology, Keyes (2002) developed the mental health continuum model, which broadly measures emotional, psychological, and social wellbeing, and Huppert and So (2013) developed the flourishing model, which measures competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality. These models and corresponding measures of wellbeing provide an objective method for diagnosing positive mental health or wellbeing among individuals. As a result of their design, these

models comprise antonyms of negative mental health or illness (e.g., how often did you feel “happy” or “calm and peaceful”, and “that your life has a sense of direction or meaning to it”), and thus appear to assume that mental health and illness are opposite ends of a single continuum (bipolar model) in contrast to the dual-continua approach.

Offering another point of divergence are subjective wellbeing models that take a purely hedonic approach to defining and operationalising the construct of wellbeing (Diener, 1994). More specifically, this perspective suggests subjective wellbeing consists of both a cognitive and affective component, which broadly reflect feeling good about and within life. These components of subjective wellbeing have been operationalised as life satisfaction (Diener et al., 1985), coupled with high positive affect and low negative affect (Diener et al., 2010). Despite its lack of focus on psychological wellbeing, these models and associated measures of subjective wellbeing have been widely used in research, perhaps in part due to their brevity and ease of measurement (Diener et al., 2018).

Several theories of human motivation and behaviour also overlap substantially with the aforementioned contemporary theories of wellbeing. Noteworthy among these are Deci and Ryan's (2000) self-determination theory, Bandura's (1977) self-efficacy theory, and Tajfel and Turner's (1986) social identity theory, as they have been highly influential in contemporary psychological research. Firstly, self-determination theory identifies competence, autonomy, and relatedness as key psychological needs which must be met to feel motivated towards goal-directed behaviour and effective psychological functioning or wellbeing (Deci & Ryan, 2000). Alternatively, self-efficacy theory proposes that behavioural and psychological change may be achieved via the enhancement of personal mastery or the strength of the belief an individual has in their

ability to enact these changes (Bandura, 1977). On the other hand, social identity theory argues that human behaviour is driven by the meaningful social groups with which we identify and to which we belong, as these groups influence our self-concept, and our views of others and the world (Tajfel & Turner, 1986). Consistent across these contemporary psychological theories of motivation and behaviour, and theories of wellbeing, is the inclusion of mastery, autonomy, and positive relationships as essential components of optimal human functioning.

Despite commonalities among theories relating to wellbeing, there are significant inconsistencies in the definitions of key terms and measures used in this literature. For example, subjective wellbeing may refer to hedonic elements of wellbeing such as feeling happy (Diener, 1994), or simply an individual's subjective perception of their wellbeing (Yaden et al., 2021). On the other hand, two different researchers may state that they are measuring subjective wellbeing, when in fact, one is measuring psychological distress (Haslam et al., 2009; Hoffmann et al., 2020), while the other measures happiness (Gleibs et al., 2011). These inconsistencies in definition and measurement accord with the jingle-jangle fallacies (Kelley, 1927; Marsh, 1994), in which the jingle fallacy refers to two scales with the same name that measure different constructs, and the jangle fallacy refers to two scales with different names that measure the same construct. As a result of this, the wellbeing literature has been criticised for its lack of cohesion and systematic approach to theory and measurement (van Zyl et al., 2023). These inconsistencies in definitions of key terms and measures may be attributed to the lack of collaboration between researchers from different disciplines and the relatively independent development of the aforementioned theories. Nonetheless, existing theories point towards a consensus regarding the multidimensionality of wellbeing as a

psychological construct, and offer the building blocks with which it may be measured and enhanced. Existing theories further recognise that wellbeing is not simply the absence of negative feelings or impairments in functioning, and deserves to be studied in its own right.

Although the various theoretical perspectives outlined above demonstrate the progression in our understanding of wellbeing over time, they are broadly criticised for representing a predominantly Western view of the construct. This is despite the existence of a long history of Eastern perspectives on wellbeing including, but not limited, to ideas from Confucian, Sufi, Buddhist, Hindu, and Taoist traditions (Joshnloo, 2014; Lomas, 2015). Considering these Eastern philosophies, Joshnloo (2014) identified six major points of divergence from Western theories of wellbeing. Relative to Western theories, Eastern theories generally take a more collectivist versus individualistic approach in defining the self; favour a eudaimonistic versus hedonistic understanding of wellbeing; consider achieving harmony more important than achieving mastery in one's environment; emphasise contentment over satisfaction in life; value rather than avoid suffering; and consider spirituality and religion relatively more relevant than not for wellbeing. Accordingly, many have cautioned against the current over-reliance on these Western theories of wellbeing in research, as a neglect of these important distinctions may result in the development of wellbeing measures and interventions that are not culturally sensitive (Lambert et al., 2015a; 2020). Experts in cross-cultural research into wellbeing suggest theories and associated measures may be improved by including aspects such as connectedness with nature, a sense of balance and harmony, feelings of calm and peace, relationship to the group, and leisure (Lambert et al., 2020). More broadly, cultural distinctions in the concept of wellbeing highlight

the need for more integrated and inclusive theoretical models of wellbeing (Lambert et al., 2020; Lomas, 2015).

3.3 Chapter Summary

There is a need for positive mental health or wellbeing interventions which may support students to attain optimal functioning in both their academic and personal lives while at university. However, in order to effectively design and evaluate wellbeing interventions, it is necessary to understand theories of wellbeing which define this concept and identify its components. Accordingly, this chapter began with a brief history of conceptual thought on wellbeing to demonstrate that it has been challenging to define and is a multifaceted construct. On the basis of contemporary psychological definitions of wellbeing, two broad and distinct approaches to defining and measuring wellbeing, namely, the hedonic and eudaimonic approaches were emphasised. These approaches correspond to subjective and psychological wellbeing. While both subjective and psychological wellbeing provide important avenues for research, we established the focus of this program of research on eudaimonic or psychological wellbeing, as this approach to intervention may enable students to persist and even thrive in the face of subjective feelings of unhappiness, dissatisfaction, or stress associated with higher education. Accordingly, Ryff's (1989b) model and corresponding measure of psychological wellbeing was presented as the theoretical foundation for the current research, given its comprehensive and systematic formulation and development. Various alternative conceptualisations and corresponding measures of wellbeing were also discussed to highlight both commonalities and inconsistencies in key definitions and terms among these theories. In conclusion, this chapter aimed to provide a brief

summary of key contemporary psychological theories of wellbeing, which collectively suggest that it is a complex and multifaceted construct, and offer the building blocks with which wellbeing interventions may be designed and evaluated.

Chapter 4 University Positive Psychology Courses

A notable application of wellbeing theory in higher education is the provision of positive psychology courses, which feature among the wide array of strategies and interventions for promoting student wellbeing. Positive psychology courses are typically credit-bearing units of study dedicated to providing students with an understanding of the science and practice of wellbeing. More broadly, they are a population-level, academic strategy for promoting student wellbeing, given that they integrate psychoeducation on wellbeing theory and wellbeing-enhancing activities into the tertiary curriculum. This chapter provides a review of the origins of positive psychology courses, as well as the existing evidence base for their use as an intervention for supporting students' mental health in higher education.

4.1 Positive Psychology: The Scientific Study of Wellbeing

Despite a long history of discourse regarding wellbeing, research into theories of wellbeing and wellbeing-enhancing activities has been significantly propelled over the past two decades as a result of the emergence of the field of positive psychology (Gable & Haidt, 2005). The term positive psychology was originally coined by Maslow (1954) to argue for a shift in scholarly thinking from pathology to wellbeing (Scorsolini-Comin et al., 2013). However, it was not until early this century that the term re-emerged in academic discourse as an area of academic enquiry focused on the study of positive emotion, positive traits or qualities, and positive institutions (Scorsolini-Comin et al., 2013; Seligman, 2002; Seligman & Csikszentmihalyi, 2000). The birth of positive psychology came from the recognition that contemporary psychological research has focused primarily on deficits, dysfunction, and disorder, in spite of the enduring and extensive literature on wellbeing. Thus, early positive psychologists argued that there

should be an equally prominent and complementary focus on the conditions and processes contributing to wellness and effective functioning (Seligman & Csikszentmihalyi, 2000). Accordingly, the conceptualisation of a *positive* psychology as an academic sub-discipline in its own right was established.

Since its establishment, positive psychology has experienced rapid growth and its principles have been readily adopted by various sectors within both research and industry, as well as by popular culture (Kim et al., 2018; Pawelski, 2022; Schueller & Parks, 2014; Sheldon et al., 2010). Rusk and Waters (2013) have attempted to quantify the reach of positive psychology since its advent, and observed the discipline has been integrated within numerous research topics, including but not limited to applied, experimental, social, developmental, and clinical psychology, as well as psychiatry, neurosciences, public health, social sciences, sports sciences, business, and management. Evidence for the integration of positive psychology also exists within hospitality, leisure, tourism, humanities, music, religion, industrial relations and labour, economics, political sciences, and gerontology (Rusk & Waters, 2013). This data demonstrates the popularity and notable influence of positive psychology on wellbeing research and practices within various settings.

One of the most noteworthy applications of positive psychology has occurred within educational settings, such as primary and secondary schools, and universities (Parks, 2011; Seligman et al., 2009). In fact, the application of positive psychology principles and practices within educational settings has become so extensive that this movement is referred to as *positive education* (Norrish et al., 2013). Positive education can be defined as an approach to education which focuses on promoting the wellbeing and personal development of students as a complementary goal to the traditional focus

on knowledge and skill development (Norrish et al., 2013). The broad aim of positive education is to prepare students for success in both their academic *and* personal lives by equipping them with the knowledge and skills necessary for their future careers, as well as those necessary for managing their mental health and wellbeing (Seligman et al., 2009). In implementing positive education, educational institutions have broadly made changes to educational content, teaching practices, and the school environment (Parks, 2011; Slemp et al., 2017). It has been further proposed that the implementation of positive education should include measurement of mental health outcomes, and the use of empirically validated interventions for enhancing these outcomes among students (Seligman & Adler, 2019).

Many primary and secondary schools in particular have adopted these principles of positive education, with reported evidence of effectiveness (Seligman & Adler, 2019) despite the lack of clear guidelines regarding their implementation (Norrish et al., 2013). However, it has been more difficult for universities to implement positive education into their relatively larger and more complex institutions (Morgan & Simmons, 2021; Oades et al., 2011; Parks, 2011). There remains a general lack of positive institutional practices geared towards the promotion of wellbeing at multiple levels within a university, from the classroom to the campus culture and social environments, and the local community, faculty and staff, and residential colleges (McGovern, 2011; Oades et al., 2011).

4.2 Description and Evaluation of Positive Psychology Courses

Focusing specifically on universities, the implementation of positive education has largely taken the form of discrete positive psychology interventions (Morgan & Simmons, 2021) and courses (Parks, 2014). Positive psychology interventions are empirically validated activities that cultivate positive emotions, thoughts, and actions

(Seligman et al., 2005). Given this broad definition, a wide range of approaches may be considered to be a positive psychology intervention. In recognition of this, Parks and Biswas-Diener (2013) have outlined criteria for positive psychology interventions which state (1) the intervention must aim to enhance a positive variable, (2) the intervention must demonstrate empirical efficacy for enhancing this variable, and (3) there must be evidence demonstrating that enhancing this variable will result in positive outcomes. Nonetheless, these criteria remain broad, enabling great diversity in activities or exercises that may be considered a positive psychology intervention. According to these criteria, wellbeing practices typically categorised as a positive psychology intervention include: gratitude exercises such as the three good things exercise (Dickens, 2017); social connection activities such as random acts of kindness (Curry et al., 2018); strengths-based activities such as identifying and using personal strengths in new ways (Schutte & Malouff, 2019); meaning-based activities such as the best possible self exercise (Heckerens & Eid, 2021); and mindful savouring tasks (Smith et al., 2014). Meta-analytic data suggest that positive psychology interventions have a beneficial impact on both wellbeing and psychological distress outcomes, although these effects are generally only small to moderate in size (Carr et al., 2023; Folk & Dunn, 2023; Hendriks et al., 2020; Koydemir et al., 2020).

In addition to adopting positive psychology interventions, many universities now offer positive psychology courses, which are typically semester-long, credit-bearing units of study dedicated to providing students with an understanding of the science and practice of wellbeing. However, there appears to be considerable variation in the structure, theoretical content, and the positive psychology interventions included in these courses. Similarly, inconsistencies appear to exist across studies in the definition

of a positive psychology course. Three broad types of positive psychology courses can be discerned from the literature: specific, comprehensive, and hybrid courses. Specific positive psychology courses focus on one element of wellbeing theory or practice. Examples include character-strengths focused courses offered at universities in Pakistan (Green, 2022), China (Duan et al., 2014), and the United States (Smith et al., 2021). In contrast, comprehensive courses include teaching on a broad range of wellbeing theories or aspects of wellbeing, and wellbeing-enhancing activities or practices. Young et al. (2022) provide a notable example of a comprehensive positive psychology course, which is structured around the PERMA (Seligman, 2011) and psychological wellbeing models (Ryff, 1989b), and includes 17 wellbeing-enhancing activities. The literature also indicates that it is possible to embed specific and comprehensive courses within more traditional courses. These hybrid courses can be broadly defined as units of study within which theoretical and/or practical elements of positive psychology have been combined with elements of a more traditional courses or complementary therapeutic approaches. Examples include an integrated positive psychology and communications skills course offered at Uskudar University in Turkey (Arasil et al., 2020), and the LAVENDER program (Cheung et al., 2021), which embedded positive psychology interventions within a broader wellbeing course for medical students at Albert Einstein College of Medicine in New York. Regardless of the content, structure, or form, positive psychology courses have demonstrated popularity with students (Shimmer, 2018) and have been readily adopted by universities across the world.

In spite of their observed popularity and rapid proliferation in higher education, there are few quantitative or qualitative evaluations of positive psychology courses. This is concerning as it indicates the use of positive psychology courses for promoting

students' wellbeing is potentially premature, given the absence of sufficient evidence to support their efficacy. Moreover, it leaves academics and educators with an inadequate research base upon which to design these courses (Rich, 2011). Of the literature reviewed, most qualitative investigations simply provide narrative descriptions of positive psychology courses from the educators' perspectives (Russo-Netzer & Ben-Shahar, 2011) and summarise findings from standard student course evaluations (Kim-Prieto & D'Oriano, 2011), while some researchers argue many of these quantitative evaluations of positive psychology courses are methodologically limited (Hobbs et al., 2022; Van Zyl et al., 2019, 2023). In addition, existing quantitative evaluations have primarily focused on determining the short-term impact of positive psychology courses on subjective or psychological wellbeing. Thus, they have neglected equally important research questions regarding their longer-term impact, and of potential moderators of any beneficial effects observed on a range of outcomes related to both wellbeing and psychological distress. In the following section, the existing qualitative and quantitative literature concerning the efficacy of positive psychology courses is reviewed to draw attention to these various research gaps.

4.2.1 Qualitative Evaluations of Positive Psychology Courses

A small number of qualitative evaluations of positive psychology courses offer insights into their beneficial impact on students' mental health and wellbeing. However, the majority of these studies consist of educators' perspectives. Some of these studies utilise standard, university-administered course evaluations that reveal high ratings for the overall quality of courses and instructors as supporting evidence for educators' perspective (Bridges et al., 2012; Kim-Prieto & D'Oriano, 2011; Kurtz, 2011). Other studies have simply reported a summary of findings from standard course evaluations (Kim-

Prieto & D'Oriano, 2011) or representative student quotes to demonstrate their generally positive perception of these courses (Jayawickreme & Forgeard, 2011). It therefore remains necessary to conduct in-depth qualitative explorations to develop a more comprehensive understanding of students' experiences within, and perceptions of, positive psychology courses.

In further support of this argument, a review of the literature reveals that the overwhelming majority of qualitative evaluations simply offer course descriptions (Morgan & Simmons, 2021; Riedel et al., 2020; Shek, 2012) or educators' recommendations regarding the design and delivery of positive psychology courses (Parks, 2011). For example, researchers have shared justifications for course design and delivery choices, along with detailed outlines for their positive psychology courses, which include lecture content and assessment (Morgan & Simmons, 2021; Shek, 2012). Additionally, researchers have provided detailed suggestions for incorporating positive psychology into existing courses within the curriculum (Magyar-Moe, 2011), or narrative descriptions of these hybrid courses as exemplars for other educators in the field (Kim-Prieto & D'Oriano, 2011; Kurtz, 2011; Marks, 2011; Parks & Ross, 2014; Pedrotti, 2011; Vella-Brodrick, 2011).

Key recommendations have also been synthesised and shared by positive psychology educators with the most notable and common among them, articulated by Russo-Netzer and Ben-Shahar (2011) from Harvard University, being the inclusion of both theory and practice, and action and reflection, to facilitate students' exploration of self. Similar recommendations are echoed more broadly in the literature. For example, researchers have suggested that experiential or active-learning approaches should be a fundamental part of positive psychology courses as this enables students to generalise

new learnings from the course to their daily lives (Biswas-Diener & Patterson, 2011; Bridges et al., 2012; Kranzler et al., 2011). In addition to content-based strategies, researchers have also encouraged the use of process-based strategies such as inviting students to inform decisions regarding course content and delivery (Biswas-Diener & Patterson, 2011). Relatedly, the importance of educators within positive psychology courses reflecting on their own teaching styles, and modelling the principles and practices of the course, has been highlighted (Russo-Netzer & Ben-Shahar, 2011). Researchers also generally recommend the use of media and non-scientific materials (including philosophy, literature, self-help books, films, business and policy-related materials, stories, quotes, and metaphors) in addition to empirical literature to promote engagement and applicability of course content to students' personal lives, and critical reflection regarding wellbeing-related information available in mainstream media (Jayawickreme & Forgeard, 2011; Russo-Netzer & Ben-Shahar, 2011). These practical recommendations are designed to assist the implementation of the principles of positive psychology within existing university courses (Magyar-Moe, 2011).

Despite these important recommendations from educators' perspectives, it remains important to understand students' perspectives of both the perceived impact, and the design and delivery of positive psychology courses. Not only is there a paucity of information regarding students' perspectives of positive psychology courses, but there is also growing recognition of the importance of mixed methods, and participatory research approaches in education and psychology (Byrom, 2017; Clark & Clark, 2022; Gibbs et al., 2017; Goodyear-Smith et al., 2015; Sampson et al., 2022; Upsher, et al., 2022; Van Zyl et al., 2019). Furthermore, the Okanagan Charter (International Conference on Health Promoting Universities and Colleges, 2015) recommends the use of participatory

research approaches to engage students, among others in the university setting, in the design, implementation, and evaluation of wellbeing-enhancing services or interventions designed for them. In further support of this, the importance of affording students' the opportunity to actively shape their education by offering perspectives on learning and teaching has been emerging within educational research and reform (Cook-Sather, 2006).

Eliciting and understanding students' perspectives may be advantageous for various reasons. Firstly, actively engaging students in the process of designing, implementing, and evaluating health-promoting interventions has resulted in positive outcomes for students, the school, and the social interactions and relationships within the school (Griebler et al., 2017; Vella-Brodrick et al., 2023). More specifically, positive outcomes among students included greater satisfaction with, motivation for, and ownership of, the health-promoting interventions implemented, and improvements in school culture, structures, policies, and the curriculum, as well as student-teacher and peer relationships. Secondly, eliciting students' feedback on wellbeing-enhancing strategies on campus has generally yielded rich qualitative information, given that they are the experts in their own experience and privy to otherwise inaccessible insights (Busher, 2012). Several examples of this exist from large surveys of students from different countries, with those conducted by Baik et al. (2019) and Priestley et al. (2021) comprising good exemplars. Baik et al. (2019) asked a large sample of students what could be done to improve their wellbeing and, as a result, identified recommendations spanning seven broad categories: teaching practices, student services, environment and culture, course design, program administration, assessment, and student societies. Similarly, Priestley et al. (2021) elicited feedback from multiple student panels regarding

the ideal approach to supporting students' mental health and wellbeing, and found recommendations regarding mental health services, mental health culture, and the university environment and culture. The richness of this qualitative data lends strong support to the premise that the goal of improving student mental health can only be achieved through an effective partnership between students and universities. Finally, the information gathered from student participation may be used to improve the efficacy, applicability, and sustainability of the strategy or intervention by informing a more tailored approach (Halliday et al., 2019; Ryan et al., 2021). For example, it is likely that there are differences in students' mental health needs across universities, as highlighted in the results of a systematic review indicating the benefits of adapting health-promoting interventions to the university's cultural context (Suárez-Reyes & Van den Broucke, 2016).

Despite these distinct advantages from understanding student perspectives and involving them in research and design, of the literature reviewed less than a handful of studies have conducted an in-depth analysis of student perspectives on positive psychology courses to date. The first of these analysed students' reflections on the impact of a 20-hour positive psychology workshop, offered as part of their postgraduate clinical psychology training program (Guse, 2010). In addition, two studies have conducted semi-structured interviews to explore students' perspectives of semester-long, undergraduate positive psychology courses (Pastore et al., 2023; Shrivastava et al., 2022). Thematic analyses of the qualitative data from these studies revealed generally positive experiences within these courses, with students' interest in wellbeing, and perceived benefits to wellbeing, common among them. However, these studies are limited by their narrow focus on positive aspects of these courses, as the instructions

provided to guide students and the questions asked within interviews assessed only the potential strengths or benefits of these courses. Accordingly, a more critical perspective of a comprehensive positive psychology course is required, in which students' perspectives on both the potential strengths *and* challenges or limitations of such courses are explicitly sought.

4.2.2 *Quantitative Evaluations of Positive Psychology Courses*

While existing qualitative evaluations allude to the potential benefits of positive psychology courses for improving students' wellbeing, this literature is also limited by the few quantitative evaluations of positive psychology courses that measure their impact on students' wellbeing. Given the limited number of quantitative evaluations, it is only in the last year that the first systematic review of the impact of positive psychology courses on psychological wellbeing was possible (Hobbs et al., 2022). This review of 27 studies found that only 11 (41%) studies observed primarily positive effects, whereas the remaining indicated either mixed ($n = 12$, 45%), null ($n = 2$, 7%), or negative effects ($n = 2$, 7%). On the basis of this, the researchers tentatively concluded that positive psychology courses may be beneficial for students' wellbeing. However, it is noteworthy that only four of the studies reporting positive effects included a comparison group of students. Moreover, only two of these studies evaluated a comprehensive positive psychology course, consisting of teaching on various aspects of wellbeing and wellbeing-enhancing activities (Lee, 2017; Young et al., 2022). As with the overall findings of the review, these two studies demonstrated inconsistencies in the nature of the beneficial impact of positive psychology courses observed. One course reported no change among positive psychology students relative to a decrease in the overall wellbeing of the control group (Young et al., 2022), while the other course reported an

increase in happiness, life satisfaction, gratitude, hope, and meaning in life among positive psychology students relative to the control group (Lee, 2017). Despite concluding that positive psychology courses have a beneficial impact on psychological wellbeing, this review also highlighted the inconsistencies and lack of methodological rigour in this literature, and a clear need for further research to clarify the impacts of positive psychology courses.

With regard to methodological limitations, the review found that 70% of studies included were at a serious risk of bias, while the remaining 30% were at moderate risk (Hobbs et al., 2022). This risk pertained primarily to studies neglecting to account for potentially confounding variables in their analyses (e.g., differences in characteristics between student groups), bias in the manner of selecting participants and reporting results, and not properly accounting for missing data. Similarly, in a recent critique of positive psychology interventions more broadly, van Zyl et al. (2023) outlined four broad categories of methodological limitations including issues with measurement and operationalisation of constructs, an overemphasis on empiricism and positivistic approaches, poor research designs, and a lack of robust research approaches. The use of poorly conceptualised and developed psychometric measures, an over-reliance on cross-sectional designs, and the lack of qualitative and mixed methods research were considered noteworthy subthemes resulting from this research, and thus, informed the current program of research.

Furthermore, the systematic review included only a handful of studies concerning the impact of positive psychology courses on students from non-Western universities (Hobbs et al., 2022). Together, these studies also indicate mixed efficacy (Arasil, 2020; Duan et al., 2014; Lambert et al., 2018; Lee, 2017; Van Zyl & Rothmann,

2012; Zhang et al., 2020). These mixed findings have been attributed to potential differences in cultural conceptualisations of wellbeing (Lambert et al., 2023; Lomas, 2015; Joshanloo, 2014). Accordingly, there is a need for more inclusive positive psychology courses, particularly with the increasing presence of international students at Western universities, and for researchers to consider culturally appropriate aspects of wellbeing in their evaluations. Furthermore, international students generally face additional challenges compared to their domestic peers, which may manifest in greater vulnerabilities toward poor mental health and wellbeing (Alharbi & Smith, 2018; Brunsting et al., 2018). Culturally sensitive positive psychology courses may buffer this risk. The development and evaluation of positive psychology courses for students from non-Western countries remains an important avenue for future research.

Finally, the aforementioned systematic review (Hobbs et al., 2022) focused on evaluating the impact of positive psychology courses on psychological wellbeing, and did not distinguish or account for differences between specific, comprehensive, or hybrid formats of these courses. In contrast, the present program of research is concerned specifically with the impact of comprehensive positive psychology courses for two interrelated reasons. Firstly, multi-component positive psychology interventions, which target various aspects of wellbeing, have demonstrated the greatest beneficial impacts on mental health outcomes (Morgan & Simmons, 2021). Specifically, meta-analytic data indicate that more comprehensive or multi-component positive psychology interventions, which typically target several aspects of wellbeing with a higher intensity and for a longer duration, result in a greater impact on mental health and wellbeing outcomes relative to interventions with a targeted or specific focus on one aspect of wellbeing or one positive psychology intervention (Carr et al., 2023).

Accordingly, it is likely that investigating the efficacy of comprehensive positive psychology courses, which include teaching on a variety of wellbeing theories, research perspectives, and interventions or practices, offers the greatest opportunity to understand their potential as a population-level intervention for promoting positive mental health and wellbeing among tertiary students.

As such, the existing literature was examined to identify empirical evaluations of comprehensive positive psychology courses specifically. Criteria for comprehensive courses were defined to include both wellbeing-enhancing activities or positive psychology interventions, *and* teaching on a broad range of wellbeing theories or aspects of wellbeing in line with wellbeing theory. Furthermore, outcomes were not limited to measures of psychological wellbeing but also included measures of subjective wellbeing and psychological distress. Of the literature examined, only 18 studies were identified that evaluated the efficacy of comprehensive positive psychology courses for supporting student mental health (see Table 4.1). From this limited number, only 12 studies included a control group. Furthermore, only eight studies had relatively large samples sizes, only five studies included a longer-term follow-up of outcomes ranging from six weeks to three or four months, and only one study explored moderators of course efficacy (Young et al., 2022). Moreover, most of the larger studies investigated the impact of positive psychology courses on wellbeing outcomes, with only two studies measuring their impact on aspects related to psychological distress or mental illness such as anxiety and loneliness (Hobbs et al., 2022; Hood et al., 2021). As a result, the impact of comprehensive positive psychology courses on psychological disorder and distress has remained largely unexplored. Relatedly, there is limited data on the impact of comprehensive positive psychology courses on the different aspects of psychological

wellbeing as the handful of larger evaluation studies have focused on general or broad measures of overall subjective, psychological, and/or social wellbeing. Finally, the results of these studies indicate inconsistencies in the impact of positive psychology courses for enhancing wellbeing and reducing psychological distress, with 11 studies reporting predominantly positive effects, three studies indicating protective effects, and four studies revealing negative effects.

This narrative review of the limited number of efficacy studies on the impact of comprehensive positive psychology courses on students' mental health reveals various gaps in the research. Specifically, it remains important for researchers to investigate the longer-term impact of positive psychology courses, their impact on psychological distress or ill-health, and on generalised and specific aspects of both wellbeing and psychological distress. Furthermore, research is needed to investigate potential moderators and mediators of the impact of positive psychology courses. In light of these gaps and aforementioned methodological limitations, it is apparent that further, high quality research is necessary to establish a stronger evidence base for the use of positive psychology courses within universities to promote student mental health and wellbeing.

Table 4.1*Key quantitative evaluations of comprehensive positive psychology courses*

Study	Measurement	Positive Psychology Course			Control Group		Outcome	Effect
		Theory	Duration	<i>n</i>	Name	<i>n</i>		
Davis 2020	Pre, post	Henriques Unified Framework	14 weeks	30	The Psychology of Culture	20	Wellbeing	Positive
Goodmon et al. 2016	Pre, post	PERMA	16 weeks	18	Social Psychology	20	Wellbeing, depression, stress	Positive
Hobbs et al. 2022	Pre, post, 6-weeks FU	Unspecified “theories of promoting mental wellbeing”	11 weeks	166	Waitlist control	198	Wellbeing, anxiety	Protective
Hood et al. 2021 (Study 1)	Pre, post, 6-weeks FU	PERMA	12 weeks	135	Waitlist control	137	Wellbeing, loneliness	Positive
(Study 2)	Pre, post	PERMA	12 weeks	119	Intervention Group from Study 1	118	Wellbeing, loneliness	Protective
Kleinman 2014	Pre, post, 4-months FU	Unspecified “psychological theories”	14 weeks	25	“Other” Psychology Electives	32	Wellbeing, coping	Negative
Lambert et al. 2018	Pre, post, 3-months FU	PERMA	14 weeks	159	Other courses	108	Wellbeing	Negative
Lambert et al. 2023	Pre, post	PERMA	14 weeks	87	None	N/a	Wellbeing, stress, somatic distress	Negative
Lee 2017	Pre, post	PERMA	12 weeks	44	Introduction to Psychology	50	Wellbeing	Positive
McDonald & Nanni 2023		PERMA	12 weeks	84	General Education Courses	105	Wellbeing	Positive

Study	Measurement	Positive Psychology Course			Control Group		Outcome	Effect
		Theory	Duration	<i>n</i>	Name	<i>n</i>		
Morgan 2015	Pre, post	Theory of Authentic Happiness	8 weeks	53	Personal Health and Safety	22	Wellbeing	Negative
Morton et al. 2020	Pre, post	Theory of Planned Behaviour and PERMA	10 weeks	82	None		Wellbeing, depression, anxiety, stress	Positive
Yaden et al. 2021	Pre, post	PERMA	10 weeks	1,228	Introduction to Psychology	1,480	Wellbeing	Positive
Young et al. 2022 (Study 1)	Pre, weekly during course, one-month FU	Diener's Subjective Wellbeing; Ryff's Psychological Wellbeing	6 weeks	67	None	N/a	Wellbeing	Positive
(Study 2)	Pre, post	Diener's Subjective Wellbeing; Ryff's Psychological Wellbeing	6 weeks	155	None	N/a	Wellbeing	Positive
(Study 3)	Pre, post	Diener's Subjective Wellbeing; Ryff's Psychological Wellbeing	6 weeks	105	The Science of Everyday Thinking	83	Wellbeing	Protective
Zhang et al. 2020 (Cohort 1)	Pre, post	PERMA	8 weeks	49	None	N/a	Wellbeing, depression, anxiety	Positive
(Cohort 2)	Pre, post	PERMA	8 weeks	46	None	N/a	Wellbeing, depression, anxiety	Positive

Note. Study effect was derived based on the impact of the positive psychology course on the majority of outcomes measured. A positive effect refers to enhanced mental health. A negative effect refers to deteriorations in mental health. A protective effect refers to no change in mental health.

4.3 Aims and Hypotheses of the Present Program of Research

Positive psychology courses that educate students about wellbeing theory, research, and practice, have been proposed as one strategy for promoting students' wellbeing. However, there are various research gaps in the existing literature concerning the efficacy of positive psychology courses. This chapter reviewed the relevant literature to draw attention to various research gaps. Broadly summarised, these gaps include a lack of research on: the impact of positive psychology courses on *both* wellbeing and psychological distress; generalised *and* specific components of wellbeing and psychological distress; the longer-term impacts of a positive psychology course; moderators of the impact of these courses; and students' perspectives on both the strengths and weaknesses of positive psychology courses. More broadly, there is limited research on the predictors of wellbeing and psychological distress among students over time, as discussed in Chapter 2. This may support the development of more targeted approaches, and the refinement of interventions, such as positive psychology courses, for supporting those most at risk during their university studies. Given these identified gaps, the overall aim of the present program of research was to identify predictors of wellbeing and psychological distress outcomes over time, and to evaluate the impact of a comprehensive positive psychology course on the mental health outcomes of undergraduate university students over time. Two studies were conducted to achieve this aim.

The first study aimed to answer three specific research questions: *Which students are most in need of wellbeing support in higher education? Is a comprehensive positive psychology course, as one approach for supporting students' wellbeing, effective both upon course completion and in the longer-term? Which students benefit the most (or least) from*

a comprehensive positive psychology course? A longitudinal research design was adopted to answer these questions, in which students completing a comprehensive positive psychology course, and students completing standard arts or science courses offered in the same semester, were asked to complete a survey at three points in time (the beginning of the semester, end of the semester, and six months later) over three consecutive years. The survey included self-report measures of wellbeing and psychological distress as outcomes of interest, and of basic demographic information and social identification with the university as predictors of these outcomes and moderators of course efficacy.

With regard to research question one, it was hypothesised that younger age, female gender, lower educational level, and lower social identification with the university would predict lower wellbeing and higher distress at the end of the semester and at follow-up relative to baseline among all students (irrespective of whether or not they were enrolled in the positive psychology course). With regard to research question two, it was hypothesised that the positive psychology course would have a more beneficial impact on the mental health outcomes of students, either in the form of: (1) increased wellbeing and decreased distress relative to students in standard courses over time; or (2) maintained wellbeing and distress relative to a reduction in wellbeing and an increase in distress among students in standard courses. Finally, research question three was exploratory, and thus, hypotheses were not developed.

The second study aimed to build upon the first by investigating students' experiences within the same comprehensive positive psychology course using a qualitative research approach. Accordingly, this study addresses the fourth and final research question: *What are students' perspectives on the strengths and weaknesses of*

using a comprehensive positive psychology course to support their wellbeing? To address this research question, students were invited to participate in focus groups to discuss various positive and negative aspects of the course, after completing the course in the first year it was offered. Focus groups were recorded, transcribed, and analysed for themes by two independent researchers using Interpretative Phenomenological Analysis. As this was exploratory research, hypotheses were not proposed.

Collectively, these studies sought to strengthen the evidence for the use of positive psychology courses as an academic approach to supporting students' mental health in higher education. The first study aimed to provide insights into: the longitudinal predictors of wellbeing and psychological distress; a more complete understanding of the short- and longer-term impacts of a comprehensive positive psychology course on generalised and specific measures of wellbeing and psychological distress; and finally, potential moderators of course efficacy. Building on these findings, the second study aimed to provide critical insights into students' perspectives, eliciting both strengths and weaknesses of this positive psychology course relative to prior qualitative investigations of students' perspectives which predominantly focused on the strengths of similar courses.

Chapter 5 Study 1: Evaluating the Impact of an Undergraduate Positive Psychology Course on Wellbeing and Psychological Distress

Aflaha Rukhsaar Khan^{a*}, Elizabeth Rieger^a, and Richard Andrew Burns^b

^aSchool of Medicine and Psychology, Australian National University, Canberra, Australia

^bNational Centre for Epidemiology and Population Health, Australian National University, Canberra, Australia

Author contributions: Aflaha Khan and Elizabeth Rieger designed the study. Aflaha Khan conducted participant recruitment, data collection, analyses and interpretation, and development of the chapter. Elizabeth Rieger and Richard Burns provided input into data analyses and interpretation. Elizabeth Rieger commented on successive drafts of the chapter. Richard Burns commented on write-up of results.

Abstract

Many universities offer positive psychology courses to support student wellbeing despite only a small number of large, methodologically rigorous studies providing evidence for their beneficial impact. The present study sought to enrich our understanding of: predictors of wellbeing and psychological distress among undergraduate students over time; the short- and longer-term impacts of a comprehensive, positive psychology course on these outcomes; and potential moderators of course efficacy. Students completing a positive psychology course or standard courses completed a survey consisting of a range of wellbeing and psychological distress measures, at the beginning and end of the semester, and six months later. Results indicated lower psychological distress and depression at the beginning and end of semester among students with higher social identification with the university, irrespective of course condition. Comparing courses indicated that the positive psychology course had a greater beneficial impact at the end of the semester on psychological wellbeing and distress, as well as on specific aspects of these constructs including autonomy, environmental mastery, and depression. Longer-term improvements were observed for overall psychological wellbeing and environmental mastery. Moreover, for mastery, greater benefits from the positive psychology course, relative to standard courses, at the end of the semester were associated with higher social identification. This study provides insights into the impact of a positive psychology course on the trajectory of students' wellbeing and psychological distress over time. While the magnitude of these positive changes were relatively small, positive psychology courses nevertheless have potential as a large-scale, low-cost, preventative intervention for supporting the mental health of students in higher education.

5.1 Introduction

It is widely accepted that the period of late adolescence and young adulthood carries an increased risk for the onset of several common mental health disorders, with data from different countries indicating that young people aged between 16 and 24 years consistently report higher rates of psychological disorder compared to older age groups (Australian Bureau of Statistics, 2022; Kessler et al., 2007; Solmi et al., 2022). As young people spend a substantial amount of time in educational institutions, such as primary and secondary schools and universities, these settings are recognised as ideal systems within which this risk may be effectively managed (Langford et al., 2015; Tsouros et al., 1998). Various interventions have been implemented within university settings with this goal in mind, including free medical and counselling services (Murray et al., 2016), and cognitive-behavioural, psychoeducation, relaxation, stress management, and mindfulness programs (Conley et al., 2013; Regehr et al., 2013; Winzer et al., 2018; Worsley et al., 2022). While efficacious, these interventions have predominantly focused on either preventing or reducing mental illness, and have neglected the equally important goal of promoting positive mental health or wellbeing within generally healthy, non-clinical student populations (Winzer et al., 2018). Despite this narrow focus on mental illness, systematic reviews highlight their beneficial impact and wide reach as population-level interventions, relative to individual-level interventions such as counselling services which are often under resourced or difficult to access (Conley et al., 2013; Raunic & Xenos, 2008; Stallman, 2012). Stemming from this recognition is a movement within universities towards implementing population-level, positive mental health interventions which may complement existing mental-illness-reducing interventions, and buffer against students' vulnerability for psychological disorder and

distress within higher education (Dooris et al., 2020; Norrish et al., 2013; Oades et al., 2011; Wyn et al., 2000).

5.1.1 Examining Predictors of Students' Mental Health

As the need for mental health support typically exceeds available resourcing, targeted population-level approaches provide a means of assisting those students who are most at risk of deteriorations in their mental health during the challenges of their university studies. Accordingly, extensive research has been dedicated to identifying the students most at risk, and thus most in need of these supports, within university settings. Reviewing this research reveals a diverse range of demographic and psychosocial variables associated with heightened psychological distress or disorder in tertiary students (Limone & Toto, 2022; Toit et al., 2022). With regard to demographic variables, although some inconsistencies exist, the most prevalent findings from this research indicate that students who are younger (Cvetkovski et al., 2012; Pereira et al., 2020), identity as female or LGBTQ (Auerbach et al., 2018; Campbell et al., 2022; Linden et al., 2021), are from racial or ethnic minority groups (Bantjes et al., 2023; Lipson et al., 2022), are from low socio-economic backgrounds or are experiencing financial hardship (Eisenberg et al., 2007; Richardson et al., 2017; Said et al., 2013), and have lower grades prior to university or lower levels of educational qualification (Baik et al., 2015; Eisenberg et al., 2009; Hjorth et al., 2016; Mahon et al., 2022; Winefield et al., 2012) tend to report poorer outcomes than their counterparts. In addition, a recent review identified academic, social, psychological, lifestyle, and physiobiological predictors of psychological distress and disorder among tertiary students, including highly demanding programs of study, bullying and discrimination, a history of childhood trauma, and increased drug and alcohol use (Limone & Toto, 2022).

Likewise, research has also identified a wide variety of variables associated with positive mental health or wellbeing outcomes among university students, which provides insights into avenues for targeted intervention. With regard to demographic variables, this research broadly indicates that gender, ethnicity, and years in university do not predict differences in wellbeing among students, whereas students who identify as LGBTQ report poorer wellbeing relative to non-LGBTQ students (Fink, 2014). A more substantial literature exists on various psychosocial predictors of wellbeing among university students, with a recent meta-analysis identifying 49 distinct factors related to the self, relationships, and the institutional context as predictors of wellbeing between two time points (Toit et al., 2022). These factors include, but are not limited to, higher extraversion, emotional regulation ability, self-efficacy, academic satisfaction, and social support and identification. Regarding the latter, researchers have established that students' social identification with their universities positively predicts their wellbeing (Hoffmann et al., 2020), and negatively their predicts psychological distress (McIntyre et al., 2018; Sani et al., 2015; Tong et al., 2019). These beneficial effects of social identification may be due to enhanced perceptions of connection and belonging to the university as a social in-group, as well as social support or access to the social resources of this group (Haslam et al., 2011; Hoffmann et al., 2020; Jetten et al., 2011).

Despite the extensive literature dedicated to identifying the students most or least at risk of poor mental health in higher education, only a small proportion of studies have used longitudinal research methods. The use of longitudinal research methods can enhance our understanding of the causal nature of the various demographic and psychosocial factors on mental health outcomes. Furthermore, longitudinal research may clarify any variation in the impact of these variables over time, and enable the

identification of the specific periods of time in which vulnerable students may be most in need of mental health support. Accordingly, further research is needed to understand how various demographic and psychosocial factors may affect the typical trajectory of wellbeing and psychological distress over the course a program of study (Barkham et al., 2019). This research would enable interventions to better target the students most at risk and to tailor interventions for the periods of time which pose the most risk to these students during their tertiary education.

5.1.2 Positive Psychology Courses: A Population-Level Intervention for Students' Mental Health

By implementing population-level interventions, universities can reach a larger proportion of students and, as a consequence, have a greater impact on the overall mental health and wellbeing of the population. In support of this, a systematic review of various population-level interventions for promoting mental health within universities has demonstrated the positive impact of using academic strategies that involve non-traditional ways of teaching and assessing students, as an alternative method for promoting the mental health of students (Fernandez et al., 2016). Within universities, one such academic strategy has been to either integrate mental health, wellbeing, and lifestyle interventions into traditional courses within the curriculum (Bughi et al., 2006; Foster et al., 2013), or to offer stand-alone, semester-long mental health or wellbeing courses typically called positive psychology courses (Lambert et al., 2018). These positive psychology courses vary in content and structure (Hobbs et al., 2022), with some courses focusing on specific aspects of wellbeing theory (Medlicott et al., 2021) and others opting to focus on more general aspects of wellbeing theory (Maybury, 2013). Similarly, some courses choose to promote the practice of one or two key wellbeing-

enhancing activities (Smith et al., 2021), generally referred to as positive psychology interventions, while others encourage a wide variety of wellbeing practices (Young et al., 2022). Meta-analytic data indicates that more comprehensive or multi-component positive psychology interventions, which typically target several aspects of wellbeing with a higher intensity and for a longer duration, result in a larger impact on mental health and wellbeing outcomes relative to interventions with a specific focus (Carr et al., 2023). Thus, investigating the efficacy of comprehensive positive psychology courses that include teaching on a variety of wellbeing theories, research perspectives, and interventions or practices, provides an opportunity to understand their potential as a leading population-level intervention for promoting positive mental health and wellbeing among tertiary students.

While embedding mental health and wellbeing literacy and practice, in the form of positive psychology courses, into the tertiary curriculum makes intuitive sense, the decision to explicitly teach students about wellbeing has not always been driven by empirical research (van Zyl et al., 2023). Rather, it has often been spurred by the observed popularity of such courses at high profile universities (Shimmer, 2018), and positive psychology more broadly has been criticised for being overly commercialised and capitalist in nature (van Zyl et al., 2023). It is only more recently that researchers have begun examining course efficacy, as evidenced by the rise of studies investigating their impact on students' mental health outcomes in the last two decades (Hobbs et al., 2022). In addition, many of the limited number of efficacy studies concerning positive psychology courses have methodological limitations, resulting from confounding variables, participant selection, reporting of results, missing data, poor measurement of constructs, over-reliance on cross-sectional designs, and the lack of qualitative and

mixed methods research (Hobbs et al., 2022; van Zyl et al., 2023). These methodological limitations substantially hinder confidence in the conclusions that can be drawn from these studies.

To date, few methodologically rigorous studies have investigated the efficacy of comprehensive positive psychology courses that focus on the key aspects of wellbeing theory and a range of research perspectives and wellbeing-enhancing activities. As a result, only one systematic review of the impact of positive psychology courses on psychological wellbeing has been conducted to date (Hobbs et al., 2022). This review of the limited number of these studies indicates generally positive but inconsistent results. On one hand, some of these studies have demonstrated that positive psychology courses *enhance* students' wellbeing relative to a comparison group of students (Lambert et al., 2018; Yaden et al., 2021). Other studies have demonstrated that positive psychology courses support students to *maintain* their level of wellbeing over a period of study relative to comparison students who experience a decline in their wellbeing outcomes (Hobbs et al., 2022; Hood et al., 2021; Young et al., 2022). These inconsistencies in the nature of the beneficial impact of more comprehensive positive psychology courses warrant further clarification.

Additionally, the conclusions that can be drawn about the efficacy of positive psychology courses for enhancing or supporting students' wellbeing are generally limited by the focus and scope of these evaluations. For example, the aforementioned studies have only investigated the impact of positive psychology courses on general measures of subjective or psychological wellbeing, leaving unanswered the impact of these courses on more specific aspects of wellbeing. A smaller study by Goodmon et al. (2016) has, however, demonstrated enhanced pleasure, engagement, and meaning

among positive psychology students relative to social psychology students. Studies evaluating less comprehensive positive psychology courses, which focus on delivering content regarding specific aspects of wellbeing or specific wellbeing-enhancing activities, also provide further evidence of positive effects on aspects of wellbeing. For example, Smith et al. (2021) have found that a character strength course enhanced all five aspects of wellbeing, as defined by the PERMA model of wellbeing (Seligman, 2011). However, it remains important to assess the impact of a comprehensive positive psychology course on specific aspects of wellbeing, as this may contribute to the literature by establishing an understanding of the specific components that might drive the more general beneficial effects observed in previous studies, and highlight aspects of wellbeing that may need to be better targeted within positive psychology courses to strengthen their overall effects.

Similarly, it is difficult to draw conclusions about the impact of positive psychology courses on psychopathology and psychological distress as the majority of studies to date have only explored the impact of courses on positive mental health or wellbeing. In accordance with the dual-continua model of wellbeing, it is important to assess both psychological distress and wellbeing to form a complete image of an individual's or population's mental health (Jahoda, 1958; Tengel, 2001; Tudor, 1996). While some studies of positive psychology courses have previously explored their impact on psychological distress, loneliness, and symptoms of depression, anxiety, and stress, and found positive effects (Goodmon et al., 2016; Lefevor et al., 2018; Smith et al., 2023), these courses were less comprehensive in nature. Thus, the impact of a comprehensive positive psychology course on mental illness is yet to be determined.

It also remains unclear whether the beneficial and protective effects of comprehensive positive psychology courses are maintained longer-term. While a small number of studies have attempted to determine this, these studies are limited by relatively small sample sizes (Kleinman, 2014; Young et al., 2022), the lack of a control group (Lambert et al., 2018; Young et al., 2022), and short follow-up periods of only four to six weeks (Hobbs et al., 2022; Hood et al., 2021; Young et al., 2022). Consequently, only limited conclusions can be drawn about the sustainability of a positive psychology course's beneficial impacts (Hobbs et al., 2022). More robust studies which have included longer follow-up periods have generally evaluated courses that are less comprehensive (Green, 2022). Thus, further investigating the longer-term efficacy of positive psychology courses may enable researchers and educators to understand the sustainability of the beneficial effects observed.

5.1.3 Moderators of Positive Psychology Courses

Finally, further research to identify potential moderators of the efficacy of comprehensive positive psychology courses is needed to identify which students may benefit the most or least from these courses (Senf & Liao, 2013). To our knowledge only one study has attempted to answer this question by exploring moderators of the impact of a comprehensive positive psychology course (Young et al., 2022). This study observed better outcomes at the end of the course for students who reported lower wellbeing and placed higher value on happiness at baseline (Young et al., 2022). The practice frequency of wellbeing activities was also explored as a moderator of course effect, but no differences were observed.

Much more research exists on moderators of the impact of specific positive psychology interventions, or specific wellbeing-enhancing activities, on various mental

health outcomes (Antoine et al., 2018; Sin & Lyubomirsky, 2009). A meta-analysis of these studies suggests that the impact of positive psychology interventions is moderated by a number of intervention (type, duration, session number), study (recruitment method, country), and demographic variables (participant age, ethnicity, clinical status) (Carr et al., 2021). With regard to demographic variables, this preliminary research has yielded some inconsistent results. For example, some meta-analyses conclude that the effectiveness of positive psychology interventions increases with age (Sin & Lyubomirsky, 2009), while others suggest that it decreases with age (Carr et al., 2021; Koydemir et al., 2020) or does not differ as a function of age (Proyer et al., 2014; Weiss et al., 2016). In contrast, no differences in outcomes have been observed between females and males as a consequence of participating in positive psychology interventions (Brunwasser et al., 2009; Carr et al., 2021; Chilver & Gatt, 2022). However, further exploration of potential gender differences in outcomes is warranted, given the overrepresentation of females in these studies, and preliminary evidence suggesting that females may be more intrinsically motivated to engage in positive psychology interventions compared to their male counterparts (Thompson et al., 2015). Finally, while the efficacy of positive psychology interventions has been demonstrated within primary, secondary, and tertiary education settings (Hobbs et al., 2022; Tejada-Gallardo et al., 2020; Waters, 2011), few studies have investigated whether differences in educational history or experience within these settings moderate the impact of positive psychology interventions (Drozd et al., 2014). In the tertiary education setting in particular, it remains to be explored whether there are differences in outcomes as a result of participating in positive psychology interventions for students who are undertaking tertiary education for the first time, and students who have previously completed some

form of tertiary education. It is possible that students re-entering university for further studies may already recognise the importance of actively investing in their wellbeing during this time, and thus, more readily adopt the principles and practices taught in the positive psychology course. It is also possible that students returning to university are more intrinsically motivated, which may result in potentially greater engagement with course materials and the university (Devlin, 1996; McKenzie & Gow, 2004).

Noteworthy in the aforementioned meta-analytic study (Carr et al., 2021) is the neglect of psychosocial constructs in investigating moderators of positive psychology course impacts. Beyond demographic variables, a wide array of psychosocial constructs could potentially moderate the impact of positive psychology courses on wellbeing and psychological distress. For example, studies have explored whether social identification moderates the impact of group-based health interventions on physical and mental health outcomes, observing better results for participants with higher levels of social identification with the group itself (Cruwys et al., 2014; Haslam et al., 2016, 2020; Steffens et al., 2021). Researchers have not, however, investigated students' social identification with the school or university as a moderator of positive psychology course outcomes. On the basis of prior social psychological research and social identity theory (Tajfel & Turner, 2001), it is possible that students who identify strongly with the university may be more receptive to the ideas and strategies suggested by the positive psychology course, and consequently, have more to gain from these courses relative to students who do not identify as strongly with the school or university. This is one manifestation of the broader research on social influence, indicating that people's attitudes and behaviours are more influenced by those perceived as in-group versus out-group members (Abrams & Hogg, 1990; Tajfel & Turner, 2001; Turner et al., 1987).

5.1.4 Aims and Hypotheses of the Current Study

The aim of the present study was to address these identified research gaps and methodological limitations. As a result, this study aimed to enhance the broader literature on the predictors of wellbeing and psychological distress among undergraduate university students, as well as the evidence base for the impact of positive psychology courses and the moderators of these impacts. The study sought to investigate predictors of both wellbeing and psychological distress among students over time; to evaluate the immediate and longer-term impact of a comprehensive positive psychology course on general and specific aspects of wellbeing and psychological distress; and to identify potential moderators of course efficacy.

Specifically, the study addressed three main research questions. Firstly, do demographic variables (gender, age, and education) and social identification with the university predict differences in wellbeing and psychological distress over time? In line with previous research, it was hypothesised that younger age, female gender, lower educational level, and lower social identification with the university would predict lower wellbeing and higher psychological distress at the end of the semester and at follow-up relative to baseline among all students (irrespective of whether or not they were enrolled in the wellbeing course).

Secondly, does a comprehensive, theory-based positive psychology course enhance students' wellbeing and reduce psychological distress, both upon course completion and in the longer-term? In line with previous research, it was hypothesised that the positive psychology course would have a beneficial impact on the mental health outcomes of students, either in the form of (1) increased wellbeing outcomes and decreased distress outcomes relative to students in standard courses over time, or (2)

maintained wellbeing and distress outcomes relative to a reduction in wellbeing and an increase in distress among students in standard courses.

Thirdly, do individual differences in gender, age, education, and social identification moderate the impact of the positive psychology course on wellbeing and psychological distress? As previous evaluations had not explored these effects, this was an exploratory research question and hypotheses were not developed.

5.2 Materials and Methods

5.2.1 *Participants*

Across three consecutive years from 2019 to 2021, students enrolled in either a positive psychology course or any other standard, undergraduate arts or science course offered in the same semester (July to November) of the teaching year at the Australian National University (ANU) were invited to participate in this research. Students enrolled in these courses were recruited for this study between the orientation week and first week of semester two using three key strategies. Firstly, the primary investigator contacted all course conveners prior to orientation week via email and asked them to advertise the research flyer for the study on their online student learning systems. In this email, the primary investigator also asked permission to speak at the first lecture of each course (either in-person or using a pre-recorded video message during COVID-19 restrictions) to deliver a brief recruitment speech for the study. This recruitment speech was delivered every year for the positive psychology course. However, there was a large number of standard courses, and thus, variation in their conveners' responsiveness and willingness to accommodate recruitment for this research each year. Lastly, the research flyer was posted on social media (Facebook and Instagram). Students willing to participate were required to be 18 years of age or older and enrolled in either of the

above-mentioned course types. Note, however, participants from standard courses in subsequent cohorts (i.e., 2020 and 2021) were excluded if they had completed the positive psychology course in a previous year of the research. All participants were also asked at the point of recruitment into the study (i.e., at the beginning of the semester) for their consent to be contacted via email by the primary researcher at the end of the semester and six months later to complete subsequent surveys.

A total of 360 students participated in this study. These participants were sampled at three points in time (beginning of semester, end of semester, and a six-month follow-up) and were part of one of three cohorts, with 107 participants sampled in 2019 (cohort one), 121 participants sampled in 2020 (cohort two), and 132 participants sampled in 2021 (cohort three). Participants who provided inconsistent responses to course membership across the three time points of measurement were removed, as their data was deemed unreliable. For example, some participants responded “yes” to completing the positive psychology course at baseline, then “no” to the same question at the end of the semester. Based on this exclusion criterion, 24 participants were removed (12 from cohort one, five from cohort two, and seven from cohort three). Additionally, the four participants who selected “other” as their gender were removed due to the small sample size of this group (only 1.1% of the total sample), as any analyses comparing them to females and males would be inappropriate. Thus, a total of 28 participants were removed from further analyses. The remaining 332 participants were included in further analyses, with 94 participants sampled in 2019 (cohort one), 113 in 2020 (cohort two), and 125 in 2021 (cohort three). From this sample, 164 were positive psychology students and 168 were students from standard courses. Table 5.1 summarises the sample characteristics. Retrospective power calculations revealed that a sample size

of 332 would detect differences between course conditions (positive psychology versus standard courses) over time (baseline, end of semester, six-month follow-up) with a high level of probability ($p = .01$) and power (80%).

Table 5.1

Demographic characteristics of the sample

Variables	Total	Positive Psychology Course	Standard Courses
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Total Sample	332 (100%)	164 (49.9%)	168 (50.6%)
Cohort			
Cohort 1	94 (28.3%)	32 (34.0%)	62 (66.0%)
Cohort 2	113 (34.0%)	53 (46.9%)	60 (53.1%)
Cohort 3	125 (37.7%)	79 (63.2%)	46 (36.8%)
Age			
18 – 24	313 (94.3%)	156 (95.1%)	157 (93.5%)
25 – 34	12 (3.6%)	5 (3.1%)	7 (4.2%)
35 – 44	5 (1.5%)	3 (1.8%)	2 (1.2%)
45 – 63	2 (.6%)	0 (0%)	2 (1.2%)
Gender			
Female	271 (81.6%)	132 (48.7%)	139 (51.3%)
Male	61 (18.4%)	32 (52.5%)	29 (47.5%)
Study Year Level			
Year 1	67 (20.2%)	23 (34.3%)	44 (65.7%)
Year 2	147 (44.3%)	100 (68.0%)	47 (32.0%)
Year 3	57 (17.7%)	20 (35.1%)	37 (64.9%)
Year 4+	61 (18.4%)	21 (34.4%)	40 (65.6%)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Education			
Secondary (Grade 12)	290 (87.3%)	142 (49.0%)	148 (51.0%)
Tertiary:	42 (12.7%)	22 (52.4%)	20 (47.6%)
Certificates/Diplomas	10 (3.0%)	5 (50.0%)	5 (50.0%)
Degrees	32 (9.6%)	17 (53.1%)	15 (46.9%)
Ethnicity			
Caucasian	200 (60.2%)	102 (51%)	98 (49%)
Other Races:	132 (39.8%)	62 (47.0%)	70 (53%)
Indigenous Australian	1 (0.3%)	0 (0.0%)	1 (0.3%)
African/Caribbean	1 (0.3%)	0 (0.0%)	1 (0.3%)
Pacific Islander	2 (0.6%)	0 (0.0%)	2 (0.6%)
East Asian	70 (21.1%)	32 (45.7%)	38 (54.3%)
South Asian	24 (7.2%)	12 (50.0%)	12 (50.0%)
Mixed Race	34 (10.2%)	18 (52.9%)	16 (47.1%)

Variables	Total	Positive Psychology Course	Standard Courses
<i>Marital Status</i>	320 (96.4%)	159 (49.7%)	161 (50.3%)
Single	12 (3.6%)	5 (41.7%)	7 (58.3%)
Married			
<i>Primary Occupation</i>			
Student	312 (94.0%)	157 (50.3%)	155 (49.7%)
Paid Employment/Carer	20 (6.0%)	7 (35%)	13 (65%)
<i>Mental Health Condition</i>			
Yes	101 (30.4%)	44 (43.6%)	57 (56.4%)
No	231 (69.6%)	120 (51.9%)	111 (48.1%)
<i>Physical Health Condition</i>			
Yes	43 (13.0%)	18 (41.9%)	25 (58.1%)
No	289 (87.0%)	146 (50.5%)	143 (49.5%)

5.2.2 Study Design

This study was designed as a longitudinal, non-randomised controlled trial in which two course conditions of students from the ANU, who were either completing a positive psychology course or completing any other arts or science course during the same semester, were asked to participate in a survey measuring their wellbeing and psychological distress at three different points in time: beginning of the semester (baseline or time 1), end of the semester (time 2), and a follow-up six months after the end of the semester (time 3). Participants could not be randomly assigned to these conditions (i.e., the positive psychology course or any of the standard courses), as university coursework selection is determined by the student.

5.2.3 Measures

Participants completed a survey hosted by Qualtrics Survey Software, which included demographic questions, along with measures of happiness (subjective wellbeing), psychological wellbeing, psychological distress, social identification,

personality, and socially desirable responding (see Appendix A for full measures). The demographic questionnaire was measured only at baseline, whereas all other measures were administered at each of the three time points. As several of the measures used were multidimensional, both Cronbach's alpha and McDonald's omega were calculated as indicators of internal consistency (Dunn et al., 2014).

5.2.3.1 Demographics

Various demographic factors were measured including age, gender, country of birth, ethnicity, religious orientation, marital status, education level, study year level, and occupation. In addition, participants were asked if they had previously received a diagnosis for a mental health or physical health condition, and whether they had previously received, or were currently receiving, treatment for these conditions. This demographic information was captured to not only characterise the sample but to ensure the two conditions were matched on basic individual difference factors at baseline, as previous studies have been criticised for selecting inappropriate control groups or have highlighted this as a challenge faced in their research (Hood et al., 2021). Furthermore, the current study intended to explore specific demographic variables as potential predictors and moderators of course impact on wellbeing and psychological distress outcomes.

5.2.3.2 Happiness (Subjective Wellbeing)

The single-item measure of overall happiness from the PERMA Profiler (Butler & Kern, 2016) was included as a measure of subjective wellbeing. The item asks, "taking all things together, how happy would you say you are?" Responses were provided on a scale ranging from 0 (*not at all*) to 10 (*completely*), with higher scores indicating greater

happiness. Though psychometric information about this single-item measure is not available, it was selected for use to maximise survey brevity. Similar single-item measures of subjective wellbeing have also been used in large population-based surveys (Bjørnskov, 2010; Hone et al., 2014), and have consistently demonstrated concurrent validity with other multi-item measures of positive affect and life satisfaction (Abdel-Khalek, 2006; Lukoševičiūtė et al., 2022), which are considered key aspects of subjective wellbeing (Diener, 1994). A similar question (“In general, how happy or unhappy do you usually feel”) is further recommended as one of four most appropriate single-item measures of wellbeing, suggested for tracking and monitoring subjective wellbeing relative to the other single-item measures that capture life satisfaction or aspects of psychological wellbeing (VanderWeele et al., 2020). The item demonstrated acceptable test–retest reliability in this study, with Pearson correlations ranging from .64 to .73 and an intra-class correlation coefficient of .67.

5.2.3.3 Psychological Wellbeing

The Psychological Wellbeing Scale (Ryff & Keyes, 1995) was included as a measure of psychological wellbeing. The shortest form was administered to maximise survey brevity, which includes a total of 18 items – three items for each of the six dimensions of wellbeing: autonomy (e.g., “I have confidence in my own opinions, even if they are different from the way most other people think”); environmental mastery (e.g., “In general, I feel I am in charge of the situation in which I live”); personal growth (e.g., “For me, life has been a continuous process of learning, changing, and growth”); positive relations with others (e.g., “I gave up trying to make big improvements or changes in my life a long time ago”); purpose in life (e.g., “Some people wander aimlessly through life, but I am not one of them”); and self-acceptance (e.g., “When I look at the story of my

life, I am pleased with how things have turned out so far"). Responses were provided on a scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*), with half the items negatively worded and higher scores reflecting greater wellbeing (Ryff & Keyes, 1995). Although Ryff and Keyes (1995) found low to moderate estimates of internal consistency (Cronbach's $\alpha = .33$ to $.56$) for these shortened subscales, they selected items for each subscale from a larger parent scale to maximise conceptual breadth, and were able to maintain moderate to strong correlations between the shortened and larger parent subscales (range = $.70$ to $.89$). Furthermore, various subscales demonstrated moderate to strong positive correlations with popular alternative measures of wellbeing, and all subscales demonstrated consistently negative correlations with depression (Ryff & Keyes, 1995). The 18-item measure has also demonstrated better factorial validity compared to other shortened versions (Clarke et al., 2001; Khanjani et al., 2014; van Dierendonck, 2004).

Similarly, the current study observed good internal consistency for the total score (Cronbach's α and McDonald's $\omega = .84$), and an acceptable estimate for the self-acceptance subscale (Cronbach's $\alpha = .76$, McDonald's $\omega = .78$). However, estimates of internal reliability for each of the remaining subscales ranged from $.61$ to $.65$ for Cronbach's α , and from $.65$ to $.69$ for McDonald's ω , except for purpose in life which yielded an α of $.35$ and an ω of $.36$. Although these estimates indicate low internal reliability, the average inter-item correlations for each of these subscales was acceptable in the present study (range = $.15$ to $.39$) (Paulsen & BrckaLorenz, 2017). Despite some psychometric limitations, we considered it appropriate for use in this study as it is a brief and theoretically derived, multifactorial

measure of psychological wellbeing, which formed the theoretical basis of the positive psychology course under evaluation.

5.2.3.4 Psychological Distress

The Kessler Psychological Distress Scale (K-10; Kessler et al., 2002) was included as a brief, 10-item measure of non-specific psychological distress from the past four weeks and included questions such as, “how often did you feel hopeless?” Responses are provided on a scale of 0 (*none of the time*) to 5 (*all of the time*), with higher scores indicating greater levels of psychological distress. The measure has demonstrated excellent internal consistency (Cronbach’s alpha of .93) and strong convergent and discriminant validity (Kessler et al., 2002). Similarly, a Cronbach’s alpha and McDonald’s omega of .90 were observed in this study.

5.2.3.5 Depression, Anxiety and Stress

The short form of the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) was included as a 21-item measure of general psychopathology over the past week, with seven items for each of the emotional states 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 difficult to relax”). Responses are provided on a scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me most of the time*), with higher scores indicating greater levels of each emotional state (Lovibond & Lovibond, 1995). The DASS-21 demonstrated good convergent validity with other diagnostic measures of depression and anxiety (Lovibond & Lovibond, 1995), as well as excellent internal consistency with a Cronbach’s alpha of .81, .89, and .78 for the subscales of depression, anxiety, and stress, respectively (Coker et al., 2018). Similarly, a Cronbach’s alpha and McDonald’s omega

of .93 were observed in this study for the total score, and .90, .84, and .83 for the depression, anxiety, and stress subscales respectively. While this measure is not a diagnostic measure, it was considered important to include in addition to the K-10 (Kessler et al., 2002), as it can differentiate between the three syndromes of depression, anxiety, and stress among healthy people, and thus would provide more specific information about the impact of the positive psychology on these aspects of mental illness (Lovibond & Lovibond, 1995).

5.2.3.6 Social Identification

The Social Identification Scale (Doosje et al., 1995) was included as a brief, four-item measure of participants' social identification with the ANU, and included questions such as "I see myself as an ANU student". Responses were provided on a scale ranging from 1 (*do not agree at all*) to 7 (*agree completely*), with higher scores indicating greater identification with the university as the social group. The measure has demonstrated good internal consistency with a Cronbach's alpha of .83 to .90 in previous studies (Doosje et al., 1995; Hoffmann et al., 2020), and a Cronbach's alpha and McDonald's omega of .85 in the current study. Social identification was measured to explore its potential to predict wellbeing and distress outcomes, and moderate the effect of the positive psychology course on these outcomes

5.2.3.7 Personality

The Mini-International Personality Item Pool (Mini-IPIP; Donnellan et al., 2006) was included as a 20-item measure of the big five personality traits: extraversion (e.g., "I am the life of the party"); neuroticism (e.g., "I have frequent mood swings"); agreeableness (e.g., "I feel others' emotions"); openness to experience (e.g., "I have a

vivid imagination”); and conscientiousness (e.g., “I get chores done right away”). Responses were provided on a scale ranging from 1 (*very inaccurate*) to 7 (*very accurate*), with higher scores indicating greater levels of the personality traits. This measure has demonstrated generally acceptable internal consistency (Cronbach’s alpha of .60 or greater), and comparable convergent and discriminant validity with other measures of the big five personality traits (Donnellan et al., 2006). Similarly, this study observed Cronbach’s alphas ranging from .66 to .81 for each subscale, and McDonald’s omegas ranging from .61 to .80. This measure was included to enable students across the two course conditions to be further matched at baseline on personality differences that may influence self-selection into the study or the positive psychology course.

5.2.3.8 Socially Desirable Responding

The 16-item Balanced Inventory of Desirable Responding scale (Hart et al., 2015) was included as a measure of socially desirable responding, with eight items each measuring self-deceptive enhancement (SDE; honest but overly positive responding) and impression management (IM; bias towards pleasing others). Questions such as “I have not always been honest with myself” were used to measure self-deceptive enhancement, and questions such as “I have said something bad about a friend behind his/her back” were used to measure impression management. Responses were provided on a scale ranging from 1 (*totally disagree*) to 8 (*totally agree*), with higher scores indicating greater levels of biased responding. The measure has demonstrated generally acceptable internal consistency (Cronbach’s alpha ranging from .63 and .74 across four studies), and good convergent and discriminant validity (Hart et al., 2015). Likewise, in this study a Cronbach’s alpha of .75 and .71, and a McDonald’s omega of .75 and .69, was

observed for SDE and IM, respectively. This measure was included to ensure equivalence in survey responses between students in both course conditions, as concerns about participants reporting beneficial effects from the positive psychology course due to the belief that this is the expected response, or positive expectations of the impact of the course, have been noted as a major limitation of previous evaluations (Hood et al., 2021).

5.2.4 *The Positive Psychology Course*

The positive psychology course was called *The Wellbeing Formula: The Science and Practice of Making a Good Life*. This introductory-level psychology course consisted of 12, two-hour lectures, with a lecture introducing key concepts and controversies in the wellbeing literature, including an overview of the PERMA+ model (Seligman, 2011) and the model of psychological wellbeing (Ryff, 1989b; Ryff & Keyes, 1995). Each lecture then focused on a specific component of these models (i.e., positive emotions, engagement, positive relationships, meaning and purpose in life, accomplishment and mastery, self-acceptance, autonomy, personal growth, and physical health and health behaviours). An additional lecture focused on societal determinants of wellbeing in recognition that factors greater than the individual have an impact on wellbeing. A final lecture provided a summary and integration of the key concepts covered. These lectures were delivered in-person in 2019 and made available for review on the online student learning platform for the course. During subsequent years (i.e., 2020 and 2021) however, lectures were delivered online due to COVID-19 restrictions. Furthermore, each lecture was delivered by different academics in the School of Medicine and Psychology with PhD-level and above research expertise relevant to the topic, and/or qualification and experience as clinical psychologists.

In each lecture students were prescribed a scientific paper, and a popular scientific paper and video, providing information of relevance to the wellbeing component of the lecture. Students were also prescribed a take-home positive psychology intervention designed to enhance the wellbeing component addressed in the lecture. These included the three good things exercise, completing a gratitude letter or visit, a savouring exercise, performing random acts of kindness, identifying character strengths, using signature strengths in new ways, goal-setting, self-compassionate letter writing, the best possible self task, and engaging in physical activity (Bolier et al., 2013; White et al., 2019). As part of their assessment tasks, students were required to complete each week's positive psychology intervention and provide a brief, guided, written reflection of their experience. They were also required to complete an essay in which they critically reviewed the literature on positive psychology interventions to develop their own individualised wellbeing plan, and to complete an end-of-semester exam. More information about the course can be found in Appendix B.

With the above structure and content in mind, this positive psychology course had several noteworthy strengths to allow a robust investigation of the impact of comprehensive positive psychology courses. Firstly, the course provided a comprehensive coverage of wellbeing theories, with the inclusion and integration of key criteria for wellbeing as outlined by both Seligman's (2011) PERMA+ model and Ryff's (1989a) psychological wellbeing model across the lectures. In the research to date, there have been so few positive psychology courses that discuss wellbeing theory, let alone integrate them into the course structure, that this was not an inclusion criteria in the only systematic review of their efficacy (Hobbs et al., 2022). Secondly, the course included instruction on wellbeing-enhancing activities, which were chosen based on

their efficacy for enhancing mental health outcomes and relatedness to the core criteria for wellbeing. Prior studies have selected wellbeing-enhancing activities without a clear rationale. Furthermore, assessment tasks were designed to encourage reflective practice and generalisation of new knowledge and wellbeing-enhancing activities into daily life, with few courses in the literature having included the use of reflective practices to enhance engagement and learning (Russo-Netzer & Ben-Shahar, 2011). Finally, the course was interdisciplinary in nature, as each of the core lectures was delivered by a different academic with varying expertise in sub-disciplines within psychology, thereby limiting the potential for bias towards pseudoscience, which positive psychology more broadly has been criticised for (van Zyl et al., 2023). As a result of these intentional design choices, this course offered an evidence-based and critical perspective on wellbeing science and practice.

5.2.5 Procedure

Students enrolled in the specified courses were invited to participate in this study during orientation week and the first week of second semester in 2019 (cohort one), 2020 (cohort two), and 2021 (cohort three). Prior to the beginning of the second semester in each of these years, a standardised email was sent to convenors of all arts and science courses on offer at the university. This email outlined the aim of the study (i.e., to investigate changes in students' wellbeing over time), and requested their support to advertise it during their first lecture and on the online teaching and learning platform for their course. The primary investigator delivered a brief recruitment speech at the first lecture of participating courses. For the third cohort specifically, this recruitment speech was pre-recorded and delivered virtually due to COVID-19

restrictions on in-person lecture attendance. In addition, the study was advertised on social media (e.g., Facebook and Instagram).

Students interested in participating were informed via the recruitment speech, research flyer, and participant information sheet that the aim of this study was to simply investigate changes in students' wellbeing over time in order to minimise demand characteristics (i.e., the tendency to respond in a manner consistent with the expectation that wellbeing should increase as a result of participating in the positive psychology course). Specifically, students were informed that their participation would involve completing a 15- to 20-minute online survey about their level of wellbeing and the factors that may influence their wellbeing at three different time points in the semester: at the beginning of the semester, at the end of the semester, and six months after the end of the semester. As remuneration for each time the survey was completed, participants were offered the opportunity to enter a prize draw for a gift card worth AUD50.00, and to receive individualised feedback on their level of wellbeing at the time of survey completion. This included a summary of their wellbeing score which was automatically generated based on their responses using Qualtrics Survey Software, and was delivered along with information about interpretation and mental health support. For participants enrolled in courses requiring research participation, one research participation credit point was also offered for completing the survey at both the beginning and end of the semester, awarded after completion of the survey at the second time point. To access the survey, students were provided with a web link and QR code, and asked to email the primary investigator with any queries or concerns. Participants provided informed consent to take part in the study. All aspects of this study received

ethical approval from the Australian National University's Human Research Ethics Committee (Protocol number: 2019/177; see Appendix C for ethics documentation).

5.2.6 Statistical Analyses

Mixed models for repeated measures (MMRM) analysis of variance (ANOVA) was used to analyse the data. This method of analysis was employed as it has several advantages for investigating longitudinal data (Tabachnick & Fidell, 2018; West, 2009). Firstly, MMRM ANOVA can account for missing data, and thus enabled retention of participants who did not respond at either the second or third time points of assessment (Bell & Rabe, 2020; West, 2009). Furthermore, this method of analysis is robust against violations of sphericity and homoscedasticity, which are likely in this data as the same individuals were tested at three different points in time and may differ systematically from one another. As such, data was converted into long-format (each row representing a unique observation) for all screening and cleaning, and the analyses. Firstly, an intercepts-only or null model, with only the random effect of subject included, was used to calculate the intraclass correlation for each dependent variable as a measure of sphericity. As expected, our results confirmed the need to use MMRM ANOVA for analyses, as 61.84% to 80.29% of the variance in dependent variables was accounted for by sampling the same individual multiple times. The remaining assumptions of linear regression apply to MMRM ANOVA (Tabachnick & Fidell, 2018) and were checked prior to analysis to ensure results would be valid. For example, predictor variables were either continuous and quantitative, or categorical with at least two levels, whereas all dependent variables were continuous and quantitative. Furthermore, a correlation matrix of predictor variables indicated no multicollinearity, while histograms indicated that all dependent variables were normally distributed. Dependent variables were also

screened for outliers using histograms but none were removed to ensure any real and meaningfully low or high outcomes were retained.

Following these assumption checks, we examined cohort and dropout effects (as data was collected from three different cohorts of students, over three different points in time) and differences between course conditions at baseline. First, to investigate potential differences between cohorts, an MMRM ANOVA was conducted with the fixed effect of cohort and the random effect of subject for each dependent variable. In primary analyses, cohort one was specified as the reference category to enable comparisons between cohorts one and two, and cohorts one and three, whereas in post-hoc analyses cohort two was specified as the reference category to enable comparison between cohorts two and three. Next, two binary logistic regression models were used to explore whether individual differences (course condition, gender, age, ethnicity, country of birth, marital status, education, study year level, occupation, and history of mental and physical health conditions) predicted a non-response to surveys administered at the end of the semester and at the six-month follow-up (dropout effects or attrition). Finally, one-way ANOVAs were used to investigate differences between the two conditions at baseline for all continuous predictor and outcome measures, and chi-square tests were used to investigate differences in all categorical predictor measures.

Following these data screening steps, various MMRM ANOVAs were conducted to answer the research questions. In all models, an identity covariance structure and restricted maximum likelihood estimation were specified. An identity covariance structure was chosen as this specifies the random effect of each subject as independent of other subjects (Detry & Ma, 2016). A restricted maximum likelihood estimation was specified as it provides more realistic and less biased estimates when the number of

subjects is relatively small, and as the aim was not to compare nested models (Tabachnick & Fidell, 2018). The random effect for subject was included in all models to control for the variance accounted for by sampling the same participant multiple times. Categorical predictors were measured at baseline, and continuous predictors were mean-centred for ease of interpretation (Tabachnick & Fidell, 2018). Dependent variables were standardised to the mean of each scale and subscale, as this enabled a measure of effect size to be derived from our analyses, with standardised regression coefficients considered equivalent to Cohen's *d*. Accordingly, .20, .50, and .80 were considered small, moderate, and large effects, respectively (Howell, 2012). Finally, exact values of significance are reported in the results, and emphasis is placed on group differences based on the magnitude of effects observed in the discussion (Wasserstein et al., 2019).

For each research question, a model build-up strategy was used in which the main effects of interest (time, course condition, and predictor variables), and interaction terms of interest (time by predictor variables, course by time, and course by time by moderator variables) were added sequentially to the intercepts-only or null model described above (Tabachnick & Fidell, 2018; see Tables 5.2 to 5.4). Additionally, in all primary analyses, baseline (compared to end of semester and follow-up, respectively) and the positive psychology course (compared to standard courses) were specified as the reference categories. All *post-hoc* analyses were conducted with the end of the semester (time two) as the reference category to investigate maintenance effects (change in dependent variables between times two and three, that is, between the end of the semester and the six-month follow-up). The same set of mixed models were conducted

to investigate the aforementioned dependent variables, thereby answering the present study's three different research questions.

5.2.6.1 Research Question One

The current study aimed to first investigate whether specific demographic factors (gender, age, and education) and social identification with the university predicted differences in wellbeing and psychological distress outcomes over time. Using the model build-up strategy (Tabachnick & Fidell, 2018), all predictor variables were included in a full model for each dependent variable (see Step 1, Table 5.2). These full models included the fixed main effects of the categorical predictors, time (baseline, end of semester, and follow-up), course (positive psychology and standard), gender (male and female), and education (secondary school and tertiary education). These full models also included the covariates of age and social identification with the university. Any significant main effects of these predictor variables would indicate that they predicted the dependent variable. As a next step, for each dependent variable, two-way interaction terms consisting of time and each predictor variable were added into the full models outlined above (see Step 2, Table 5.2). Any significant two-way interaction effects of time by predictor variables would indicate differences between conditions over time for each dependent variable.

Table 5.2

Model build-up strategy for investigating research question one (predictors of wellbeing and psychological distress outcomes over time)

	Step 1	Step 2			
	Full Model	Interaction Models			
		Gender	Age	Education	Social ID
Random Effect:					
Subject	✓	✓	✓	✓	✓
Fixed Effects:					
Time, Course, Gender, Education	✓	✓	✓	✓	✓
Covariates:					
Age, Social Identity	✓	✓	✓	✓	✓
Interaction Effects:					
Time x Gender		✓			
Time x Age			✓		
Time x Education				✓	
Time x Social Identity					✓

5.2.6.2 Research Question Two

The current study also aimed to investigate whether the positive psychology course enhanced wellbeing and reduced psychological distress, both upon course completion and in the longer-term, relative to the standard courses. Using the build-up strategy (Tabachnick & Fidell, 2018), two separate models were conducted to investigate the fixed effect of course (positive psychology and standard) and time (baseline, end of semester, and follow-up), respectively (see Step 1 and 2, Table 5.3). Next, a model including both the fixed effect of course and time was conducted (see Step 3, Table 5.3). Finally, an interaction model was conducted to examine the interaction effect for course by time (see Step 4, Table 5.3). Any significant two-way interaction effects of course by

time would indicate differences between conditions over time for each dependent variable.

Table 5.3

Model build-up strategy for investigating research question two (impact of positive psychology course over time)

	Step 1	Step 2	Step 3	Step 4
	Time Model	Course Model	Main Effects Model	Interaction Model
<i>Random Effect:</i>				
Subject	✓	✓	✓	✓
<i>Fixed Effects:</i>				
Time	✓		✓	✓
Course		✓	✓	✓
<i>Interaction Effect:</i>				
Course x Time				✓

5.2.6.3 Research Question Three

Finally, the current study aimed to investigate whether individual difference factors moderated the effect of the positive psychology course relative to the standard courses on wellbeing and distress outcomes. For each dependent variable, two-way and three-way interaction terms were added into the full models outlined above (see Step 1 and 2, Table 5.4). Specifically, two-way interaction terms comprising of course by gender, age, education, and social identification, and three-way interaction terms comprising of course by time by each of these moderator variables, were added to the models, as only these interaction terms pertained to the research questions. Any significant two-way interactions would indicate differences in the dependent variables between course conditions varied according to the moderator variables, whereas any significant three-

way interactions would indicate that differences in dependent variables between course conditions varied as a function of moderator variables over time.

Table 5.4

Model build-up strategy for investigating research question three (moderation analyses)

	Step 1	Step 2			
	Full Model	Moderation Models			
		Gender Model	Age Model	Education Model	Social ID Model
Random Effect:					
Subject	✓	✓	✓	✓	✓
Fixed Effects:					
Time, Course, Gender, Education	✓	✓	✓	✓	✓
Covariates:					
Age, Social Identity	✓	✓	✓	✓	✓
Two-way Interactions Effects:					
Course x Time		✓	✓	✓	✓
Course x Gender		✓			
Time x Gender		✓			
Course x Age			✓		
Time x Age			✓		
Course x Education				✓	
Time x Education				✓	
Course x Social Identity					✓
Time x Social Identity					✓
Three-way Interactions Effects:					
Course x Time x Gender		✓			
Course x Time x Age			✓		
Course x Time x Education				✓	
Course x Time x Social Identity					✓

5.3 Results

5.3.1 *Sample Characteristics*

Analysis of cohort effects revealed no significant differences between cohorts for any of the dependent variables (see Appendix D). As a result, data from all three cohorts were combined for further analyses. Every participant was invited to complete the survey at three different points in time which provided a total of 996 observations (492 from the positive psychology course and 504 from standard courses), with 237 (23.8%) missing overall (96 [9.64%] from the end of the semester and 141 [14.16%] from follow-up). The logistic regression model examining non-responses (i.e., attrition) at the end of the semester was not significant, $\chi^2(14) = 17.28, p = .242$ (see Appendix E). However, the logistic regression model examining non-responses at the six-month follow-up was significant, $\chi^2(14) = 28.35, p = .013$ (see Appendix E). This indicated that participants were more likely to have discontinued participation in the study prior to completing the follow-up survey if they were born in Australia, $OR = .53, 95\% CI [.28, 1.00]$, or identified as being religious, $OR = .40, 95\% CI [.22, .71]$, and less likely to discontinue participation if they had a diagnosed mental health disorder, $OR = 2.28, 95\% CI [1.33, 3.91]$. Finally, comparing the positive psychology and standard courses at baseline only indicated a significant difference in terms of students' year of study, with a greater number of second year students in the positive psychology course relative to standard courses (see Table 5.5).

Table 5.5

Baseline characteristics and differences by condition (positive psychology versus standard courses)

Characteristic/ Outcome	Positive Psych Course (<i>n</i> = 164)	Standard Courses (<i>n</i> = 168)	Comparison at Baseline
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Age	19.98 (3.27)	20.57 (4.94)	$F(1, 330) = 2.18, p = .141$
Social ID	17.50 (5.79)	17.75 (5.75)	$F(1, 330) = 0.16, p = .693$
Openness	21.60 (4.45)	21.65 (4.49)	$F(1, 330) = .01, p = .907$
Conscientiousness	18.49 (5.10)	18.47 (5.02)	$F(1, 330) = .00, p = .966$
Extraversion	14.92 (5.57)	14.24 (5.62)	$F(1, 330) = 1.23, p = .267$
Agreeableness	22.48 (4.51)	22.15 (4.66)	$F(1, 330) = .44, p = .509$
Neuroticism	17.04 (4.71)	16.78 (5.03)	$F(1, 330) = .24, p = .624$
SDE	30.42 (8.41)	30.80 (8.20)	$F(1, 330) = .18, p = .675$
IM	34.86 (7.70)	36.53 (8.00)	$F(1, 330) = 3.75, p = .054$
Overall PWS	88.71 (15.06)	89.67 (15.60)	$F(1, 330) = .33, p = .569$
Autonomy	13.73 (3.85)	14.53 (3.79)	$F(1, 330) = 3.63, p = .058$
Mastery	12.88 (3.90)	13.39 (3.89)	$F(1, 330) = 1.42, p = .235$
Personal Growth	17.82 (2.76)	17.59 (3.03)	$F(1, 330) = .51, p = .475$
Purpose in Life	15.34 (3.12)	15.52 (3.48)	$F(1, 330) = .24, p = .628$
Positive Relations	14.38 (4.21)	14.50 (4.03)	$F(1, 330) = .07, p = .787$
Self-Acceptance	14.56 (4.17)	14.14 (4.26)	$F(1, 330) = .82, p = .367$
Overall Happiness	6.16 (1.82)	6.23 (1.95)	$F(1, 330) = .13, p = .723$
Distress (K-10)	24.55 (7.93)	23.77 (7.73)	$F(1, 330) = .83, p = .364$
Depression	6.32 (4.66)	6.06 (4.64)	$F(1, 330) = .26, p = .614$
Anxiety	5.45 (3.96)	5.17 (4.33)	$F(1, 330) = .39, p = .533$
Stress	7.28 (3.96)	7.15 (4.35)	$F(1, 330) = .08, p = .783$
Gender (Female)	132 (80.49)	139 (82.74)	$\chi^2(1, n = 332) = .28, p = .597$
Education (Secondary)	142 (86.58)	148 (88.09)	$\chi^2(1, n = 332) = .17, p = .679$
Birth Country (Australia)	100 (60.98)	113 (67.26)	$\chi^2(1, n = 332) = 1.43, p = .232$
Ethnicity (Caucasian)	102 (62.20)	98 (58.33)	$\chi^2(1, n = 332) = .52, p = .472$
Religiosity (Yes)	43 (26.22)	40 (23.81)	$\chi^2(1, n = 332) = .26, p = .612$
Marital Status (Single)	159 (96.95)	161 (95.83)	$\chi^2(1, n = 332) = .30, p = .585$

Characteristic/ Outcome	Positive Psych Course (<i>n</i> = 164)	Standard Courses (<i>n</i> = 168)	Comparison at Baseline
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Study Year (1st)	23 (14.02)	44 (26.19)	χ^2 (1, <i>n</i> = 332) = 36.64, <i>p</i> < .001
2nd Year	100 (60.98)	47 (27.98)	
3rd Year	20 (12.20)	37 (22.02)	
≥ 4th Year	21 (12.80)	40 (23.81)	
Occupation (Student)	157 (95.73)	155 (92.26)	χ^2 (1, <i>n</i> = 332) = 1.77, <i>p</i> = .184
Mental Health Condition (Yes)	44 (26.83)	57 (33.93)	χ^2 (1, <i>n</i> = 332) = 1.98, <i>p</i> = .160
Physical Health Condition (Yes)	18 (10.98)	25 (14.88)	χ^2 (1, <i>n</i> = 332) = 1.12, <i>p</i> = .289

Note. Social ID = social identification with the university; SDE = self-deceptive enhancement; IM = impression management; Overall PWS = psychological wellbeing total score.

5.3.2 Predictors of Wellbeing and Psychological Distress over Time

The following section summarises the results of the MMRM ANOVAs for research question one, that is, whether demographic factors (gender, age, and education) and social identification with the university predicted levels of wellbeing and psychological distress among students over time.

Full models from Step 1 of these analyses (see Table 5.2 in Materials and Methods) revealed several significant main effects of time, social identification, age, and gender for various dependent variables. Broadly summarised, these main effects indicated lower wellbeing and higher psychological distress at follow-up (time 3) relative to baseline (time 1) and the end of the semester (time 2), for females relative to males, older students relative to younger students, and with decreasing social identification with the

university. Tables 5.6 and 5.7 provide the estimates of these fixed main effects for wellbeing and psychological distress outcomes, respectively.

As Step 2 of these analyses (see Table 5.2 in Materials and Methods), interaction models for gender, age, education, and social identification only revealed significant interaction effects for two outcomes (see Appendix F for all tests of fixed effects). Specifically, tests of fixed effects revealed a significant interaction of time by social identification for psychological distress, $F(2, 474.61) = 3.57, p = .029$, and depression, $F(2, 477.02) = 3.58, p = .029$. Estimates of fixed effects from post-hoc analyses indicated that higher level of social identification with the university among students predicted lower levels of both psychological distress, $B(SE) = .03 (.01), p = .008, 95\% CI [.01, .05]$, and depression, $B(SE) = .03 (.01), p = .010, 95\% CI [.01, .05]$, at the end of the semester (time 2) relative to follow-up (time 3). However, primary analyses revealed no differences in these outcomes between baseline (time 1) and the end of the semester (time 2) or follow-up (time 3) as a function of social identification.

As can be seen in Figure 5.1, higher social identification predicted lower psychological distress and depression but only during the semester, as there was no difference in the influence of social identification on psychological distress and depression between baseline (time 1) and the end of the semester (time 2). However, this protective effect of social identification diminished after the end of the semester (time 2), with students' level of distress and depression decreasing to similar levels at follow-up (time 3), regardless of their level of social identification with the university.

Figure 5.1

The Interaction Effect of Time by Social Identification for Psychological Distress and Depression

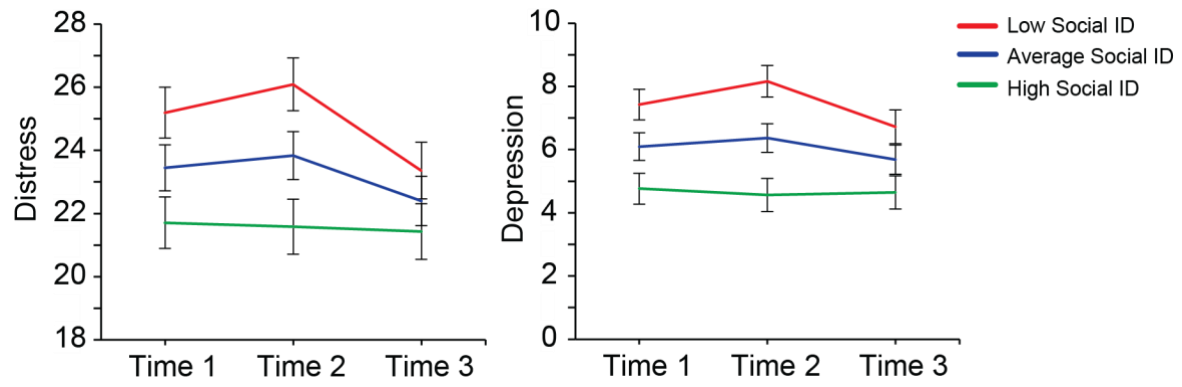


Table 5.6*Estimates of effects from full and interaction models for wellbeing outcomes*

		Happiness	PWS	Autonomy	Mastery	Growth	Purpose	Relations	Self-Accept
Primary Analyses									
Full Model (Step 1)									
Standard vs. PP	<i>B(SE)</i>	-.06 (.09)	-.06 (.10)	.10 (.10)	-.04 (.10)	-.09 (.10)	-.04 (.10)	.00(.10)	-.19(.10)
	<i>Sig</i>	.556	.553	.322	.703	.373	.694	.998	.055
T2 vs. T1	<i>B(SE)</i>	-.01 (.05)	-.02 (.04)	.12 (.05)	-.06 (.05)	-.04 (.05)	-.13 (.05)	-.01 (.05)	.05 (.05)
	<i>Sig</i>	.851	.688	.014	.233	.402	.015	.878	.305
T3 vs. T1	<i>B(SE)</i>	.20 (.05)	.12 (.04)	.15 (.05)	.09 (.05)	.09 (.05)	-.04 (.06)	.11 (.05)	.11 (.05)
	<i>Sig</i>	<.001	.006	.004	.106	.119	.470	.024	.031
M vs. F	<i>B(SE)</i>	.02 (.12)	.06 (.13)	.30 (.13)	.14 (.13)	.05 (.13)	.08 (.13)	-.21 (.12)	-.00 (.13)
	<i>Sig</i>	.865	.624	.021	.273	.678	.557	.093	.982
Tertiary x Secondary	<i>B(SE)</i>	-.18 (.16)	.07 (.17)	.13 (.17)	.12 (.17)	-.10 (.17)	.09 (.17)	.01 (.17)	.04 (.17)
	<i>Sig</i>	.284	.675	.451	.493	.538	.594	.937	.835
Age	<i>B(SE)</i>	.02 (.01)	.02 (.01)	.02 (.01)	.01 (.01)	.04 (.01)	.03 (.01)	.00 (.01)	.00 (.01)
	<i>Sig</i>	.174	.103	.089	.687	.007	.020	.716	.870
Social ID	<i>B(SE)</i>	.06 (.01)	.04 (.01)	.01 (.01)	.04 (.01)	.02 (.01)	.03 (.01)	.04 (.01)	.04 (.01)
	<i>Sig</i>	<.001	<.001	.265	<.001	<.001	<.001	<.001	<.001
Interaction Models (Step 2)									
T2 vs. T1 x M vs. F	<i>B(SE)</i>	.15(.13)	-.03(.10)	-.19(.12)	.09(.12)	.05(.13)	-.07(.14)	-.03(.12)	.10(.12)
	<i>Sig</i>	.244	.765	.117	.471	.688	.628	.812	.382
T3 vs. T1 x M vs. F	<i>B(SE)</i>	-.08(.14)	-.09(.11)	-.09(.14)	-.06(.14)	.03(.14)	-.07(.15)	-.02(.13)	-.07(.13)
	<i>Sig</i>	.565	.420	.501	.660	.861	.669	.899	.617
T2 vs. T1 x Tertiary vs. Secondary	<i>B(SE)</i>	.11(.16)	.09(.13)	.10(.15)	.01(.16)	.20(.16)	.18(.17)	-.08(.15)	.04(.15)
	<i>Sig</i>	.478	.457	.510	.926	.207	.294	.608	.799
T3 vs. T1 x Tertiary vs. Secondary	<i>B(SE)</i>	.14(.17)	.01(.13)	.06(.16)	.07(.16)	.02(.17)	-.09(.18)	.08(.16)	-.06(.16)
	<i>Sig</i>	.408	.916	.701	.652	.890	.616	.603	.717
T2 vs. T1 x Age	<i>B(SE)</i>	-.01(.01)	.00(.01)	-.00(.01)	.01(.01)	.00(.01)	.01(.01)	-.00(.01)	-.01(.01)
	<i>Sig</i>	.536	.938	.880	.604	.901	.444	.797	.644
T3 vs. T1 x Age	<i>B(SE)</i>	-.01(.01)	-.00(.01)	-.00(.01)	-.00(.01)	-.00(.01)	.00(.01)	.00(.01)	-.00(.01)
	<i>Sig</i>	.449	.870	.728	.866	.771	.735	.975	.943

		Happiness	PWS	Autonomy	Mastery	Growth	Purpose	Relations	Self-Accept
T2 vs. T1 x Social ID	<i>B(SE)</i>	-.00(.01)	.00(.01)	.00(.01)	.00(.01)	.01(.01)	-.01(.01)	.00(.01)	.01(.01)
	<i>Sig</i>	.917	.722	.966	.876	.517	.139	.585	.150
T3 vs. T1 x Social ID	<i>B(SE)</i>	-.00(.01)	-.01(.01)	.00(.01)	-.01(.01)	-.01(.01)	-.02(.01)	-.00(.01)	-.00(.01)
	<i>Sig</i>	.744	.259	.961	.518	.547	.034	.957	.723
Post-hoc Analyses									
Full Model (Step 1)									
T3 vs. T2	<i>B(SE)</i>	.21(.06)	.13(.04)	.03(.05)	.14(.05)	.13(.06)	.10(.06)	.12(.05)	.06(.05)
	<i>Sig</i>	<.001	.003	.542	.009	.026	.142	.022	.247
Interaction Models (Step 2)									
T3 vs. T2 vs. M vs. F	<i>B(SE)</i>	-.23(.14)	-.06(.11)	.10(.14)	-.15(.14)	-.03(.15)	.00(.16)	.01(.13)	-.17(.14)
	<i>Sig</i>	.116	.597	.476	.291	.858	.995	.933	.211
T3 vs. T2 x Tertiary vs. Secondary	<i>B(SE)</i>	.03(.18)	-.08(.14)	-.04(.17)	.06(.18)	-.18(.18)	-.27(.20)	.16(.17)	-.09(.17)
	<i>Sig</i>	.885	.575	.823	.736	.325	.165	.349	.574
T3 vs. T2 x Age	<i>B(SE)</i>	-.00(.01)	-.00(.01)	-.00(.01)	-.01(.01)	-.01(.01)	-.01(.01)	.00(.12)	.00(.01)
	<i>Sig</i>	.919	.824	.864	.522	.704	.679	.831	.712
T3 vs. T2 x Social ID	<i>B(SE)</i>	-.00(.01)	-.01(.01)	.00(.01)	-.01(.01)	-.01(.01)	-.01(.01)	-.00(.01)	-.02(.01)
	<i>Sig</i>	.825	.159	.994	.447	.249	.472	.591	.105

Note. All primary analyses specified baseline (time 1) and all post-hoc analyses specified end of the semester (time 2) as the reference category. PP = positive psychology course condition; Standard = standard course condition; T1 = time 1; T2 = time 2; T3 = time 3; M = male; F = female; Education completed after grade 12 = tertiary; Grade 12 Education = secondary; Social ID = social identification with the university.

Table 5.7*Estimates of effects from full and interaction models for psychological distress outcomes*

		<i>Distress</i>	<i>Depression</i>	<i>Anxiety</i>	<i>Stress</i>
Primary Analyses					
Full Model (Step 1)					
Standard vs. Positive Psych Course	<i>B (SE)</i>	.04 (.10)	.10 (.10)	.03 (.10)	.05 (.10)
	<i>Sig</i>	.696	.290	.784	.587
Time 2 vs. Time 1	<i>B (SE)</i>	.05 (.05)	.06 (.05)	-.06 (.05)	.03 (.06)
	<i>Sig</i>	.297	.231	.240	.580
Time 3 vs. Time 1	<i>B (SE)</i>	-.13 (.06)	-.08 (.06)	-.21 (.06)	-.11 (.06)
	<i>Sig</i>	.025	.151	<.001	.081
Male vs. Female	<i>B (SE)</i>	-.33 (.12)	-.12 (.12)	-.21 (.13)	-.26 (.13)
	<i>Sig</i>	.008	.341	.100	.038
Tertiary vs. Secondary Education	<i>B (SE)</i>	.03 (.17)	.04 (.17)	.10 (.17)	.13 (.17)
	<i>Sig</i>	.836	.801	.566	.461
Age	<i>B (SE)</i>	-.01 (.01)	-.02 (.01)	-.03 (.01)	.00 (.01)
	<i>Sig</i>	.584	.244	.051	.920
Social Identification	<i>B (SE)</i>	-.04 (.01)	-.05 (.01)	-.02 (.01)	-.03 (.01)
	<i>Sig</i>	<.001	<.001	<.001	<.001
Interaction Model (Step 2)					
Time 2 vs. Time 1 x Male vs. Female	<i>B (SE)</i>	-.24 (.13)	-.24 (.14)	-.11 (.14)	-.26 (.14)
	<i>Sig</i>	.078	.078	.425	.073
Time 3 vs. Time 1 x Male vs. Female	<i>B (SE)</i>	-.09 (.15)	-.11 (.15)	-.01 (.15)	-.05 (.16)
	<i>Sig</i>	.537	.472	.974	.758
Time 2 vs. Time 1 x Tertiary vs. Secondary	<i>B (SE)</i>	.04 (.17)	-.15 (.17)	.12 (.17)	-.12 (.18)
	<i>Sig</i>	.830	.391	.491	.501
Time 3 vs. Time 1 x Tertiary vs. Secondary	<i>B (SE)</i>	-.07 (.18)	-.27 (.18)	-.15 (.18)	-.30 (.19)
	<i>Sig</i>	.696	.136	.391	.108
Time 2 vs. Time 1 x Age	<i>B (SE)</i>	-.00 (.01)	-.00 (.01)	.00 (.01)	-.01 (.01)
	<i>Sig</i>	.808	.958	.839	.462
Time 3 vs. Time 1 x Age	<i>B (SE)</i>	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
	<i>Sig</i>	.697	.392	.483	.326
Time 2 vs. Time 1 x Social Identification	<i>B (SE)</i>	-.01 (.01)	-.02 (.01)	-.00 (.01)	-.00 (.01)
	<i>Sig</i>	.232	.070	.679	.989
Time 3 vs. Time 1 x Social Identification	<i>B (SE)</i>	.02 (.01)	.01 (.01)	.02 (.01)	.01 (.01)
	<i>Sig</i>	.094	.299	.049	.454
Post-hoc Analyses					
Full Model (Step 1)					
Time 3 x Time 2	<i>B (SE)</i>	-.18 (.06)	-.15 (.06)	-.15 (.06)	-.14 (.06)
	<i>Sig</i>	.002	.015	.011	.031
Interaction Model (Step 2)					
Time 3 vs. Time 2 x Male vs. Female	<i>B (SE)</i>	.15 (.15)	.13 (.16)	.10 (.15)	.21 (.16)
	<i>Sig</i>	.348	.402	.507	.206
Time 3 vs. Time 2 x Tertiary vs. Secondary	<i>B (SE)</i>	-.11 (.19)	-.12 (.19)	-.27 (.19)	-.18 (.20)
	<i>Sig</i>	.581	.528	.161	.368
T3 vs. T2 x Age	<i>B (SE)</i>	-.00 (.01)	-.01 (.01)	-.01 (.01)	-.00 (.02)
	<i>Sig</i>	.903	.470	.411	.846
T3 vs. T2 x Social Identification	<i>B (SE)</i>	.03 (.01)	.03 (.01)	.02 (.01)	.01 (.01)
	<i>Sig</i>	.008	.010	.024	.466

Note. All primary analyses specified baseline (time 1) and all post-hoc analyses specified end of the semester (time 2) as the reference category.

5.3.3 Impact of the Positive Psychology Course and Moderators of Course Impact Over Time

The following section summarises the results of the MMRM ANOVAs for research questions two and three. Research question two examined the short- and longer-term impacts of the positive psychology course on wellbeing and psychological distress outcomes relative to the standard courses. Research question three investigated whether demographic factors (gender, age, education) and social identification with the university moderated the effect of the positive psychology course over time relative to the standard courses on wellbeing and distress outcomes.

5.3.3.1 Wellbeing Outcomes

Table 5.8 provides the mean scores on the wellbeing outcomes for each course condition across each of the three time points, while Table 5.9 reports the estimates of fixed effects for the wellbeing outcomes for research questions two. Finally, Table 5.10 outlines the estimates of fixed effects for the wellbeing outcomes for the moderation analyses. All significant tests of fixed effects are reported in text for outcomes (see Appendix G for a summary table).

Table 5.8

Descriptive statistics for wellbeing outcomes by course condition and time

Measure	Course Condition	Time 1	Time 2	Time 3
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Happiness	Positive Psychology	6.16 (1.82)	6.34 (1.92)	6.69 (1.80)
	Standard	6.23 (1.95)	5.93 (2.10)	6.66 (1.87)
Psychological Wellbeing	Positive Psychology	88.71 (15.06)	90.32 (14.96)	93.44 (13.77)
	Standard	89.67(15.60)	87.40 (16.06)	91.42 (14.63)
Autonomy	Positive Psychology	13.73(3.85)	14.65 (3.42)	14.46 (3.73)
	Standard	14.53 (3.79)	14.16 (3.89)	15.16 (3.64)
Mastery	Positive Psychology	12.88 (3.90)	13.23 (4.08)	14.12 (3.57)
	Standard	13.39 (3.89)	12.65 (3.69)	13.14 (4.00)
Personal Growth	Positive Psychology	17.82 (2.76)	17.59 (3.03)	18.12 (2.40)
	Standard	17.59 (3.03)	17.44 (3.00)	18.15 (2.62)
Purpose	Positive Psychology	15.43 (3.12)	15.34 (3.48)	15.57 (3.08)
	Standard	15.52 (3.48)	14.69 (3.55)	15.60 (3.28)
Positive Relations	Positive Psychology	14.38 (4.21)	13.72 (3.92)	15.40 (3.76)
	Standard	14.50 (4.03)	14.56(4.02)	14.80 (3.80)
Self-Acceptance	Positive Psychology	14.56 (4.17)	15.10 (4.12)	15.77 (3.81)
	Standard	14.14 (4.26)	13.90 (4.36)	14.57 (3.93)

Note. Time 1 = baseline; time 2 = end of the semester (3 months); time 3 = follow-up (6 months); *M* = mean, *SD* = standard deviation. Sample size for each measure: positive psychology course (time 1 = 164, time 2 = 123, time 3 = 98); standard (time 1 = 168, time 2 = 113, time 3 = 93).

Table 5.9*Estimates of effects from various MMRM investigating the impact of course over time on wellbeing outcomes*

		Overall Happiness	Overall PWS	Autonomy	Mastery	Personal Growth	Purpose	Positive Relations	Self- Acceptance
Primary Analyses									
Time Model (Step 1)									
T2 vs. T1	<i>B (SE)</i>	-.04 (.05)	-.03 (.04)	.11 (.05)	-.08 (.05)	-.05 (.05)	-.15 (.05)	-.02 (.05)	.03 (.05)
	<i>Sig</i>	.486	.390	.019	.118	.286	.007	.600	.517
T3 vs. T1	<i>B (SE)</i>	.19 (.05)	.11 (.04)	.15 (.05)	.08 (.05)	.08 (.05)	-.05 (.06)	.11 (.05)	.10 (.05)
	<i>Sig</i>	.001	.012	.005	.136	.137	.422	.033	.045
Course Model (Step 2)									
Standard vs. PP	<i>B (SE)</i>	-.03 (.10)	-.04 (.10)	.10 (.10)	-.03 (.10)	-.06 (.10)	-.01 (.10)	.02 (.10)	-.18 (.10)
	<i>Sig</i>	.771	.712	.309	.772	.559	.896	.881	.079
Interaction Model (Step 4)									
T2 vs. T1 x Standard vs. PP	<i>B (SE)</i>	-.22 (.10)	-.23 (.08)	-.30 (.09)	-.30 (.10)	.05 (.10)	-.24 (.11)	.02 (.09)	-.15 (.09)
	<i>Sig</i>	.027	.005	.002	.002	.593	.028	.829	.100
T3 vs. T1 x Standard vs. PP	<i>B (SE)</i>	-.03 (.11)	-.19 (.09)	-.09 (.10)	-.38 (.10)	.02 (.11)	-.02 (.12)	-.09 (.10)	-.16 (.10)
	<i>Sig</i>	.764	.028	.365	<.001	.867	.889	.347	.115
Post-hoc Analyses									
Full Model (Step 1)									
T3 vs. T2	<i>B (SE)</i>	.22 (.06)	.14 (.04)	.03 (.05)	.16 (.06)	.14 (.06)	.10 (.06)	.13 (.05)	.07 (.05)
	<i>Sig</i>	<.001	.002	.520	.005	.018	.108	.012	.175
Interaction Model (Step 4)									
T3 vs. T2 x Standard vs. PP	<i>B (SE)</i>	.19 (.11)	.04 (.09)	.20 (.11)	-.08 (.11)	-.04 (.11)	.22 (.12)	-.11 (.10)	-.01 (.11)
	<i>Sig</i>	.095	.681	.055	.440	.755	.071	.274	.956

Note. All primary analyses specified baseline (time 1) and all post-hoc analyses specified end of the semester (time 2) as the reference category. PP = positive psychology course condition; Standard = standard courses; T1 = time 1; T2 = time 2; T3 = time 3; M = male; F = female.

Table 5.10*Estimates of effects from moderation models (Step 2) wellbeing outcomes*

		<i>Overall Happiness</i>	<i>Overall PWS</i>	<i>Autonomy</i>	<i>Mastery</i>	<i>Personal Growth</i>	<i>Purpose</i>	<i>Relations Positive</i>	<i>Self- Acceptance</i>
Primary Analyses									
Standard vs. PP x M vs. F	<i>B(SE)</i>	.27(.24)	.24(.26)	.28(.25)	.04(.25)	.17(.25)	.33(.26)	.10(.25)	.06(.25)
	<i>Sig</i>	.264	.356	.268	.876	.488	.209	.691	.798
Standard vs. PP x Tertiary vs. Secondary	<i>B(SE)</i>	.16(.28)	-.01(.30)	.04(.30)	-.10(.30)	-.17(.30)	-.04(.30)	.17(.29)	-.02(.29)
	<i>Sig</i>	.576	.969	.905	.742	.557	.887	.554	.943
Standard vs. PP x Age	<i>B(SE)</i>	-.00(.03)	-.05(.03)	-.08(.03)	-.03(.03)	-.05(.03)	-.04(.03)	.00(.03)	-.01(.03)
	<i>Sig</i>	.991	.073	.002	.241	.070	.115	.918	.587
Standard vs. PP x Social ID	<i>B(SE)</i>	.01(.01)	.00(.01)	-.00(.01)	.00(.01)	.01(.01)	.00(.01)	.02(.01)	-.00(.01)
	<i>Sig</i>	.300	.961	.851	.867	.686	.995	.070	.934
Standard vs. PP x T2 vs. T1 x M vs. F	<i>B(SE)</i>	.23(.25)	.09(.20)	.03(.24)	-.05(.25)	-.28(.26)	.05(.28)	.13(.24)	.39(.24)
	<i>Sig</i>	.360	.644	.895	.848	.288	.856	.583	.103
Standard vs. PP x T3 vs. T1 x M vs. F	<i>B(SE)</i>	-.20(.28)	.07(.22)	.07(.27)	.15(.27)	-.09(.29)	-.16(.31)	.05(.26)	.21(.26)
	<i>Sig</i>	.481	.751	.799	.584	.762	.605	.836	.436
Standard vs. PP x T2 vs. T1 x Tertiary vs. Secondary	<i>B(SE)</i>	.35(.32)	-.01(.25)	-.38(.30)	.26(.31)	.16(.33)	-.50(.35)	-.32(.30)	.32(.30)
	<i>Sig</i>	.276	.680	.213	.408	.623	.154	.286	.285
Standard vs. PP x T3 vs. T1 x Tertiary vs. Secondary	<i>B(SE)</i>	.37(.33)	.09(.27)	.09(.32)	-.19(.33)	-.20(.34)	.17(.37)	-.28(.31)	.66(.31)
	<i>Sig</i>	.269	.734	.776	.559	.563	.639	.365	.037
Standard vs. PP x T2 vs. T1 x Age	<i>B(SE)</i>	.00(.03)	-.02(.02)	-.01(.03)	-.01(.03)	-.04(.03)	-.03(.03)	-.02(.03)	.00(.03)
	<i>Sig</i>	.920	.353	.711	.803	.129	.329	.475	.979
Standard vs. PP x T3 vs. T1 x Age	<i>B(SE)</i>	-.02(.03)	.02(.02)	.03(.03)	-.01(.03)	.00(.03)	.04(.03)	-.01(.03)	.02(.03)
	<i>Sig</i>	.442	.393	.233	.687	.934	.244	.823	.533
Standard vs. PP x T2 vs. T1 x Social ID	<i>B(SE)</i>	-.01(.02)	-.02(.02)	-.02(.02)	-.04(.02)	.00(.02)	.02(.02)	.04(.02)	-.03(.02)
	<i>Sig</i>	.691	.558	.316	.014	.945	.261	.026	.095
Standard vs. PP x T3 vs. T1 x Social ID	<i>B(SE)</i>	-.02(.02)	-.01(.01)	-.03(.02)	.02(.02)	-.02(.02)	-.02(.02)	-.01(.02)	.00(.02)
	<i>Sig</i>	.410	.342	.069	.371	.353	.276	.761	.957

		<i>Overall Happiness</i>	<i>Overall PWS</i>	<i>Autonomy</i>	<i>Mastery</i>	<i>Personal Growth</i>	<i>Purpose</i>	<i>Relations Positive</i>	<i>Self- Acceptance</i>
Post-hoc Analyses									
Standard vs. PP x T3 vs. T2 x M vs. F	<i>B(SE)</i>	-.43(.29)	-.02(.23)	.04(.28)	.20(.28)	.19(.30)	-.21(.32)	-.08(.27)	-.18(.27)
	<i>Sig</i>	.139	.924	.895	.484	.525	.511	.780	.503
Standard vs. PP x T3 vs. T2 x Tertiary vs. Secondary	<i>B(SE)</i>	.02(.36)	.20(.29)	.47(.34)	-.45(.35)	-.36(.37)	.67(.39)	.03(.34)	.34(.34)
	<i>Sig</i>	.948	.494	.172	.203	.332	.091	.919	.317
Standard vs. PP x T3 vs. T2 x Age	<i>B(SE)</i>	-.02(.03)	.04(.02)	.04(.03)	-.01(.03)	.04(.03)	.06(.03)	.01(.03)	.02(.03)
	<i>Sig</i>	.413	.100	.143	.872	.153	.049	.671	.569
Standard vs. PP x T3 vs. T2 x Social ID	<i>B(SE)</i>	-.01(.02)	-.01(.02)	-.02(.02)	.06(.02)	-.02(.02)	-.05(.02)	-.04(.02)	.03(.02)
	<i>Sig</i>	.662	.693	.389	.002	.341	.042	.023	.124

Note. All primary analyses specified baseline (time 1) and all post-hoc analyses specified end of the semester (time 2) as the reference category. PP = positive psychology course condition; Standard = standard courses; T1 = time 1; T2 = time 2; T3 = time 3; M = male; F = female; Education completed after grade 12 = tertiary; Grade 12 education = secondary; Social ID = social identification with the university; Self-accept = self-acceptance.

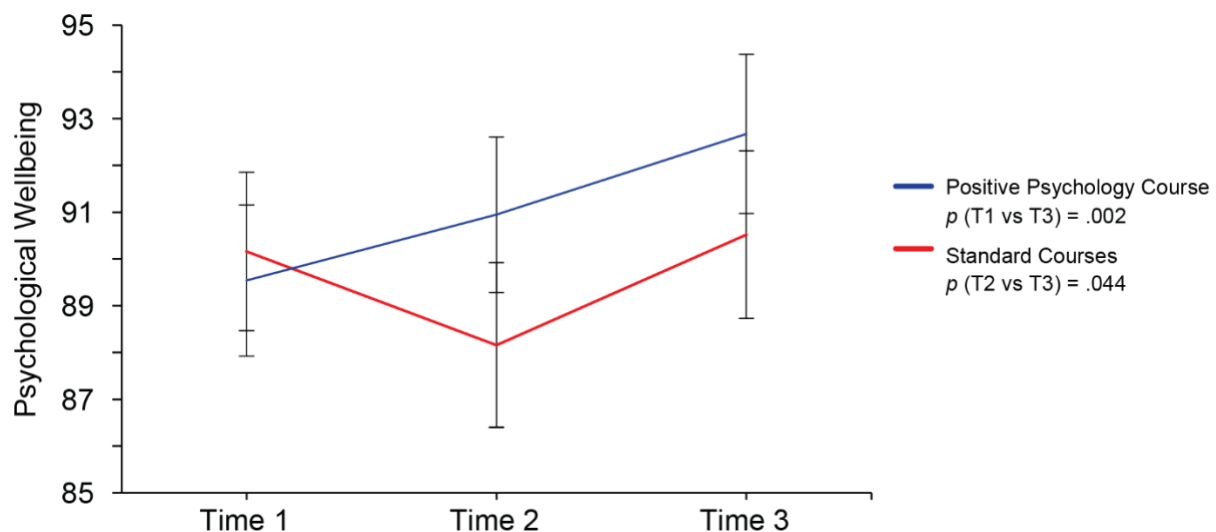
Happiness (Subjective Wellbeing). Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction of course by time, $F(2, 448.42) = 2.69, p = .069$, indicating no differences in happiness between courses over time. Similarly, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) revealed no significant three-way interaction effects (all $p > .324$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

Psychological Wellbeing Scale (PWS) Total Score. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed a significant interaction of course by time, $F(2, 440.27) = 4.68, p = .010$, with estimates of fixed effects indicating the difference in psychological wellbeing between courses was significantly larger at both the end of the semester (time 2), $B(SE) = -.23(.08), p = .005, 95\% CI [-.38, -.07]$, and at follow-up (time 3), $B(SE) = -.19(.09), p = .028, 95\% CI [-.14, .21]$, compared to the difference between courses at baseline (time 1), with higher scores at both time points among positive psychology students (see Table 5.9 and Figure 5.2). Furthermore, the difference between the end-of-semester (time 2) and follow-up (time 3) was not significantly different between the two courses, indicating a maintenance effect. To understand the significant two-way interaction between course and time, simple effects between courses, as well as within courses over time, were examined. Pairwise comparisons between courses revealed no significant difference in psychological wellbeing at any time point (all $p > .103$, see Appendix H). However, pairwise comparisons over time within the positive psychology course revealed significantly higher psychological wellbeing at follow-up (time 3) compared to baseline (time 1), SMD

$= -.21$, $SE = .06$, $p = .002$, 95% $CI [-.35, -.06]$, whereas standard courses reported higher scores at follow-up (time 3) compared to the end of the semester (time 2), $SMD = -.16$, $SE = .06$, $p = .044$, 95% $CI [-.31, .00]$ (see Appendix I). Finally, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) found no significant three-way interaction effects (all $p > .255$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

Figure 5.2

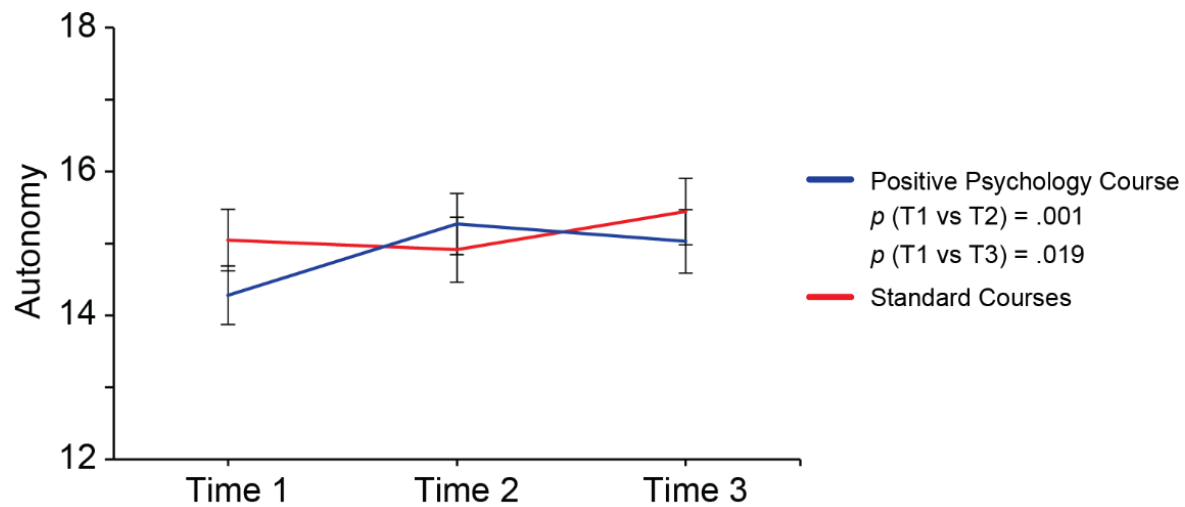
The Interaction of Course by Time for Psychological Wellbeing



Note. Estimated marginal means of the course by time interaction effect demonstrates a significantly larger difference between courses at the end of the semester (time 2) and follow-up (time 3) relative to baseline (time 1). However, pairwise comparisons revealed no significant difference between courses at any time point (see Appendix H).

PWS-Autonomy. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed a significant interaction of course by time, $F(2, 450.49) = 5.09$, $p = .007$, with estimates of fixed effects indicating that the difference in autonomy between courses was significantly smaller at the end of the semester (time 2)

compared to the difference between courses at baseline (time 1), $B(SE) = -.30(.09)$, $p = .002$, 95% $CI [-.48, -.11]$, with higher scores among positive psychology students (see Table 5.9 and Figure 5.3). However, the difference between baseline (time 1) and follow-up (time 3), and the end-of-semester (time 2) and follow-up (time 3), was not significantly different between the two courses. To understand the significant two-way interaction between course and time, simple effects between courses, as well as within courses over time, were examined. Pairwise comparisons between courses revealed no significant difference in autonomy at any time point (all $p > .062$, see Appendix H). However, pairwise comparisons over time within the positive psychology course revealed significantly higher autonomy at both the end of the semester (time 2) and at follow-up (time 3) compared to baseline (time 1), $SMD = -.26$, $SE = .07$, $p = .001$, 95% $CI [-.42, -.10]$, and $SMD = -.20$, $SE = .07$, $p = .019$, 95% $CI [-.37, -.02]$, respectively, whereas standard courses reported no significant differences in autonomy over time (all $p > .215$; see Appendix I). Finally, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) found no significant three-way interaction effects (all $p < .184$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

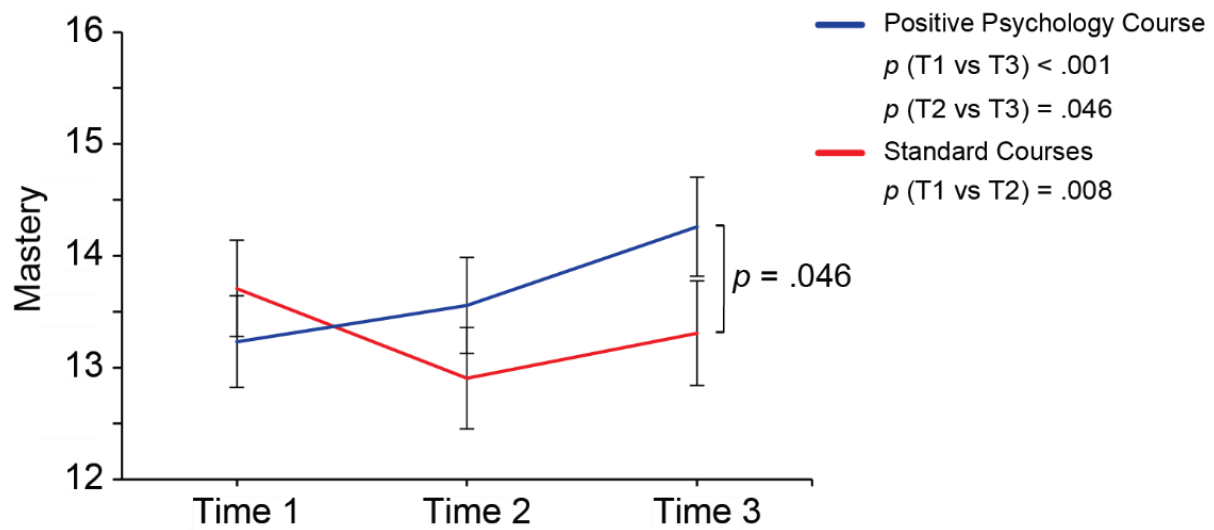
Figure 5.3*The Interaction Effect of Course by Time for Autonomy*

Note. Estimated marginal means of the course by time interaction effect demonstrates a significantly smaller difference between courses at the end of the semester (time 2) relative to baseline (time 1). However, pairwise comparisons revealed no significant difference between courses at any time point (see Appendix H).

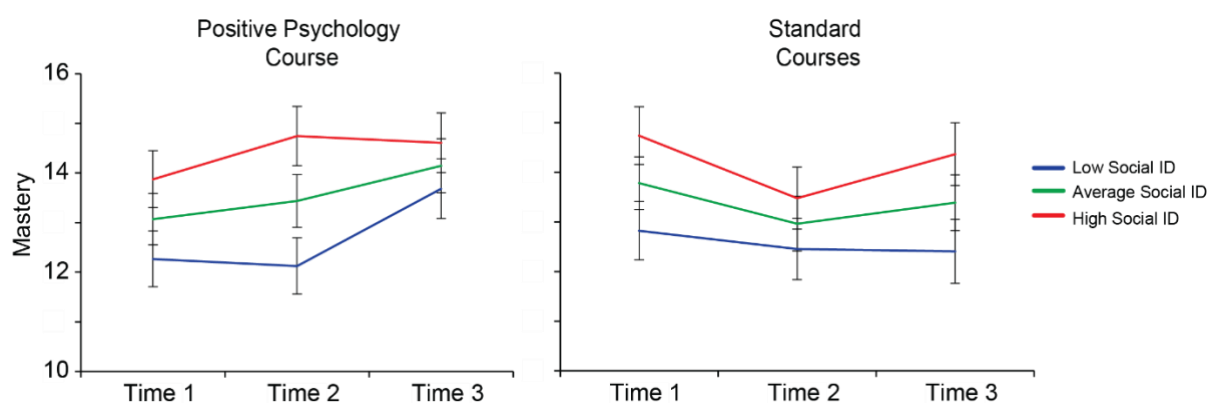
PWS-Environmental Mastery. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed a significant interaction of course by time, $F(2, 446.53) = 8.11, p < .001$, with estimates of fixed effects indicating that the difference in environmental mastery between courses was significantly larger at both the end of the semester (time 2), $B(SE) = -.30(.10), p = .002, 95\% CI [-.48, -.11]$, and follow-up (time 3), $B(SE) = -.38(.10), p < .001, 95\% CI [-.58, -.17]$, compared to the difference between courses at baseline (time 1), with higher scores among positive psychology students at both time points (see Table 5.9 and Figure 5.4). However, the difference between the end of semester (time 2) versus follow-up (time 3) was not significantly different between the two courses indicating a maintenance effect. To understand the significant two-way interaction between course and time, simple effects

between courses, as well as within courses over time, were examined. Pairwise comparisons between courses revealed significantly higher mastery among positive psychology students relative to students from the standard courses at follow-up (time 3), $SMD = .25$, $SE = .12$, $p = .046$, 95% $CI [.00, .49]$, (see Appendix H). Pairwise comparisons over time within the positive psychology course also revealed significantly higher mastery at follow-up (time 3) compared to both baseline (time 1) and the end of the semester (time 2), $SMD = -.27$, $SE = .07$, $p = <.001$, 95% $CI [-.44, -.09]$, and $SMD = -.18$, $SE = .07$, $p = .046$, 95% $CI [-.36, -.00]$, respectively, whereas standard courses reported significantly lower mastery at the end of the semester (time 2) compared to baseline (time 1), $SMD = .21$, $SE = .07$, $p = .008$, 95% $CI [.04, .37]$, (see Appendix I).

Finally, tests of fixed effects from the moderation models (Step 2, Table 5.4 in Materials and Methods) also revealed a significant three-way interaction of course, time, and social identification, $F(2, 458.02) = 5.29$, $p = .005$. Inspecting estimates of fixed effects indicated that mastery differed between courses as a function of social identification from baseline (time 1) to the end of the semester (time 2), $B(SE) = -.04(.02)$, $p = .014$, 95% $CI [-.08, -.01]$, and from the end of the semester (time 2) to follow-up (time 3), $B(SE) = .06(.02)$, $p = .002$, 95% $CI [.02, .10]$, but did not differ from baseline (time 1) to follow-up (time 3; see Table 5.10). As can be seen in Figure 5.5, positive psychology students reporting higher social identification with the university achieved greater levels of mastery at the end of the semester (time 2), relative to students from standard courses who experienced no difference in mastery as a function of social identification. All other three-way interactions from moderation models were not significant (all $p > .436$; see Appendix G).

Figure 5.4*The Interaction Effect of Course by Time for Mastery*

Note. Estimated marginal means of the course by time interaction effect for environmental mastery demonstrates a significantly larger difference between courses at the end of the semester (time 2) and follow-up (time 3) relative to baseline (time 1). Pairwise comparisons also indicated significantly higher mastery among positive psychology students relative to students from the standard courses at follow-up (time 3; see Appendix H).

Figure 5.5*The Interaction Effect of Course by Time by Social Identification for Mastery*

Note. Estimated marginal means of the course, time, and social identification interaction effect for environmental mastery indicate greater mastery at the end of the semester (time 2) among positive psychology students with higher social identification with the university, relative to other time points and students from standard courses.

PWS-Purpose in Life. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction of course by time, $F(2, 457.56) = 2.78, p = .063$, indicating no differences in purpose in life between courses over time (see Table 5.9). Similarly, tests of fixed effects from the moderation models (Step 2, Table 5.3 in Materials and Methods) also revealed no significant three-way interaction effects (all $p > .124$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

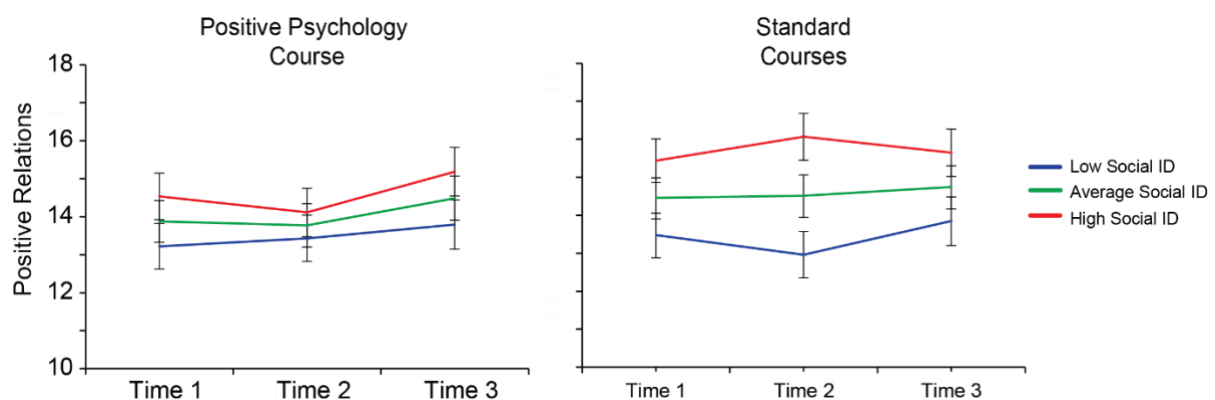
PWS-Personal Growth. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction of course by time, $F(2, 447.36) = .14, p = .866$, indicating no differences in personal growth between courses over time (see Table 5.9). Similarly, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) also found no significant three-way interaction effects (all $p > .234$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic or social identification with the university over time (see Appendix G).

PWS-Positive Relations with Others. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction of course by time, $F(2, 443.70) = .67, p = .514$, indicating no differences in positive relations with others between courses over time (see Table 5.9). However, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) revealed a significant three-way interaction of course, time, and social identification, $F(2, 454.18) = 3.41, p = .034$, with estimates of fixed effects indicating that positive relations differed between courses as a function of social identification from baseline (time 1) to the end

of the semester (time 2), $B(SE) = .04(.02)$, $p = .026$, 95% CI [.00, .07], and from the end of the semester (time 2) to follow-up (time 3), $B(SE) = -.04(.02)$, $p = .023$, 95% CI [-.08, -.01], but did not differ from baseline (time 1) to follow-up (time 3; see Table 5.10 and Appendix G). As can be seen in Figure 5.6, students from standard courses, reporting higher social identification with the university experienced more positive relations with others at the end of the semester (time 2), relative to positive psychology students who experienced no difference in the quality of these relationships as a function of social identification over time.

Figure 5.6

The Interaction Effect of Course by Time by Social Identification for Positive Relations with Others



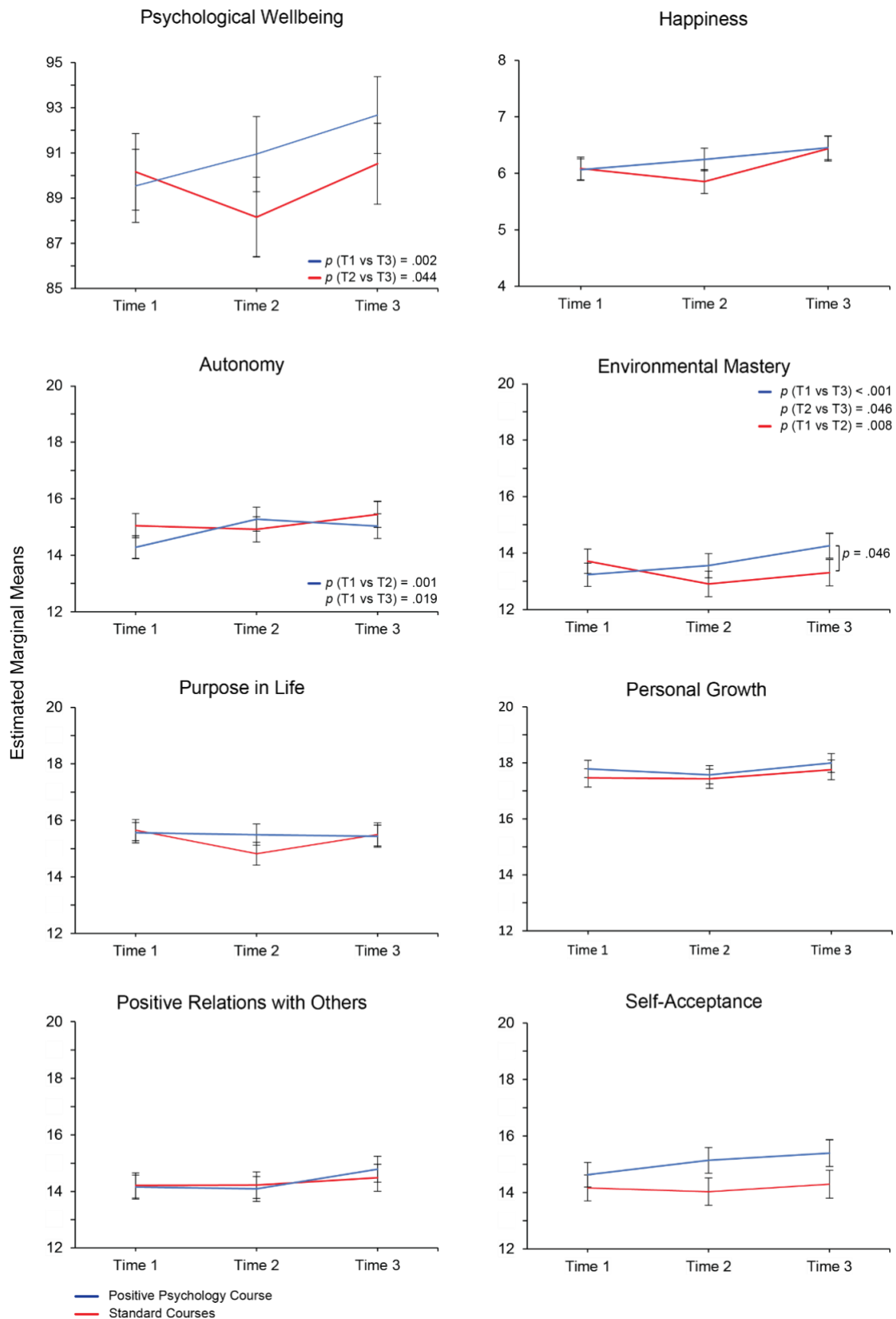
Note. Estimated marginal means of the course, time, and social identification interaction effect for positive relations with others demonstrates more positive relationships at the end of the semester (time 2) among students from standard courses with higher social identification with the university relative to positive psychology students.

PWS-Self-Acceptance. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction effect of course by time, $F(2, 448.72) = 1.84$, $p = .159$, indicating no differences in self-acceptance between courses over time (see Table 5.9). Similarly, tests of fixed effects from the

moderation models (Step 2, Table 5.4 in Materials and Methods) also revealed no significant three-way interaction effects, indicating that the effect of the positive psychology course, relative to standard courses (all $p > .109$), was not moderated by demographic factors or social identification with the university over time (see Appendix G).

5.3.3.2 Summary of Wellbeing Outcomes

The positive psychology course had a beneficial impact on wellbeing, particularly overall psychological wellbeing, autonomy, and mastery. With regard to psychological wellbeing, the positive psychology course enhanced levels at the end of the semester and in the longer-term, relative to students from standard courses who experienced no longer-term change over time. With regard to autonomy, the positive psychology course enhanced levels at the end of the semester, whereas standard courses experienced no change during this period. However, no longer-term difference between courses was observed. With regard to mastery, the positive psychology course supported students to maintain levels at the end of the semester while enhancing levels in the longer-term, relative to standard course students who experienced a decrease at the end of the semester and no long-term increase. Relative to standard courses, the positive psychology course also benefited some students more than others, with greater mastery among students who identified more strongly with the university at the end of the semester. In contrast, students from standard courses with higher social identification experienced greater positive relations relative to positive psychology students at the end of the semester. Note, the magnitude of these beneficial effects were small (range = .19 to .38), as indicated by the standardised regression coefficients provided in tables 5.9 and 5.10. Figure 5.7 provides a summary of these results.

Figure 5.7*Summary of the Interaction Effect of Course by Time for Wellbeing Outcomes*

5.3.3.3 Psychological Distress Outcomes

The following section summarises the results of the MMRM for research question two and three. Table 5.11 provides the mean scores on the distress outcomes for each course condition across each of the three time points, while Table 5.12 reports the estimates of fixed effects for the psychological distress outcomes for research question two. Finally, Table 5.13 outlines the estimates of fixed effects for the psychological distress outcomes from moderation analyses. All significant tests of fixed effects are reported in text for outcomes (see Appendix G for a summary table).

Table 5.11

Descriptive statistics for psychological distress outcomes by course condition and time

Measure	Course Condition	Time 1	Time 2	Time 3
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Distress	Positive Psychology	24.55 (7.93)	23.65 (7.75)	22.02 (7.34)
	Standard	23.77 (7.73)	25.50(8.09)	23.19 (7.47)
Depression	Positive Psychology	6.32 (4.66)	5.90 (4.89)	4.97 (4.19)
	Standard	6.06 (4.64)	7.19 (5.38)	6.08 (4.69)
Anxiety	Positive Psychology	5.45 (3.96)	4.73 (4.08)	3.95 (3.49)
	Standard	5.17 (4.33)	5.29 (4.48)	4.47 (4.31)
Stress	Positive Psychology	7.28 (3.96)	7.30 (4.09)	6.19 (3.84)
	Standard	7.15 (4.35)	7.52 (4.33)	7.19 (4.48)

Note. *M* = mean, *SD* = standard deviation. Sample size for each measure: positive psychology course (time 1 = 164, time 2 = 123, time 3 = 98); Standard (time 1 = 168, time 2 = 113, time 3 = 93).

Table 5.12

Estimates of effects from various MMRM investigating the impact of course over time on psychological distress outcomes

		Distress	Depression	Anxiety	Stress
Primary Analyses					
Time Model (Step 1)					
T2 vs. T1	B (SE)	.07 (.05)	.09 (.05)	-.05 (.05)	.04 (.06)
	Sig	.177	.111	.340	.476
T3 vs. T1	B (SE)	-.12 (.06)	-.08 (.06)	-.21 (.06)	-.10 (.06)
	Sig	.034	.194	<.001	.086
Course Model (Step 2)					
Standard vs. PP	B (SE)	.03 (.10)	.08 (.10)	.01 (.10)	.05 (.10)
	Sig	.749	.418	.906	.592
Interaction Model (Step 4)					
T2 vs. T1 x Standard vs. PP	B (SE)	.34 (.10)	.33 (.11)	.20 (.11)	.13 (.11)
	Sig	.001	.003	.061	.252
T3 vs. T1 x Standard vs. PP	B (SE)	.18 (.11)	.22 (.12)	.11 (.11)	.22 (.12)
	Sig	.118	.055	.350	.064
Post-hoc Analyses					
Time Model (Step 1)					
T3 vs. T2	B (SE)	-.19 (.06)	-.16 (.06)	-.16 (.06)	-.14 (.06)
	Sig	.001	.008	.008	.024
Interaction Model (Step 4)					
T3 vs. T2 x Standard vs. PP	B (SE)	-.16 (.12)	-.10 (.12)	-.09 (.12)	.10 (.13)
	Sig	.182	.407	.445	.447

Note. All primary analysis specified baseline (time 1) and all post-hoc analyses specified end of the semester (time 2) as the reference category. PP = positive psychology course condition; Standard = standard courses; T1 = time 1; T2 = time 2; T3 = time 3; M = male; F = female.

Table 5.13*Estimates of effects from moderation models (Step 2) psychological distress outcomes*

	<i>Distress</i>		<i>Depression</i>		<i>Anxiety</i>		<i>Stress</i>	
	<i>B(SE)</i>	<i>Sig</i>	<i>B(SE)</i>	<i>Sig</i>	<i>B(SE)</i>	<i>Sig</i>	<i>B(SE)</i>	<i>Sig</i>
Primary Analyses								
Standard vs. PP x M vs. F	-.24(.25)	.339	-.03(.25)	.917	-.05(.26)	.848	-.14(.25)	.586
Standard vs. PP x Tertiary vs. Secondary	-.12(.29)	.686	-.27(.29)	.365	-.04(.30)	.897	-.49(.30)	.102
Standard vs. PP x Age	.02(.03)	.490	-.01(.03)	.723	.03(.03)	.224	.00(.03)	.871
Standard vs. PP x Social ID	-.02(.01)	.166	-.03(.01)	.010	-.02(.01)	.088	-.01(.01)	.486
Standard vs. PP x T2 vs. T1 x M vs. F	-.07(.27)	.798	-.12(.27)	.673	-.32(.27)	.236	.03(.29)	.906
Standard vs. PP x T3 vs. T1 x M vs. F	-.12(.30)	.678	.03(.30)	.909	.21(.30)	.490	-.12(.32)	.700
Standard vs. PP x T2 vs. T1 x Tertiary vs. Secondary	.26(.34)	.435	.11(.34)	.746	-.36(.34)	.285	.09(.36)	.798
Standard vs. PP x T3 vs. T1 x Tertiary vs. Secondary	.04(.35)	.917	-.53(.36)	.139	-.10(.36)	.777	.01(.38)	.985
Standard vs. PP x T2 vs. T1 x Age	.03(.03)	.357	.02(.03)	.403	-.01(.03)	.647	.03(.03)	.259
Standard vs. PP x T3 vs. T1 x Age	.03(.03)	.345	-.01(.03)	.879	.02(.03)	.424	.05(.03)	.163
Standard vs. PP x T2 vs. T1 x Social ID	.03(.02)	.104	.02(.02)	.400	.02(.02)	.384	.03(.02)	.172
Standard vs. PP x T3 vs. T1 x Social ID	-.01(.02)	.605	-.01(.02)	.772	.00(.02)	.967	.02(.02)	.492
Post-hoc Analyses								
Standard vs. PP x T3 vs. T2 x M vs. F	-.06(.31)	.858	.15(.31)	.632	.53(.31)	.089	-.09(.33)	.788
Standard vs. PP x T3 vs. T2 x Tertiary vs. Secondary	-.23(.38)	.554	-.64(.38)	.098	.26(.39)	.496	-.08(.41)	.836
Standard vs. PP x T3 vs. T2 x Age	.00(.03)	.939	-.03(.03)	.375	.04(.03)	.244	.01(.03)	.750
Standard vs. PP x T3 vs. T2 x Social ID	-.04(.02)	.053	-.02(.02)	.306	-.02(.02)	.464	-.01(.02)	.582

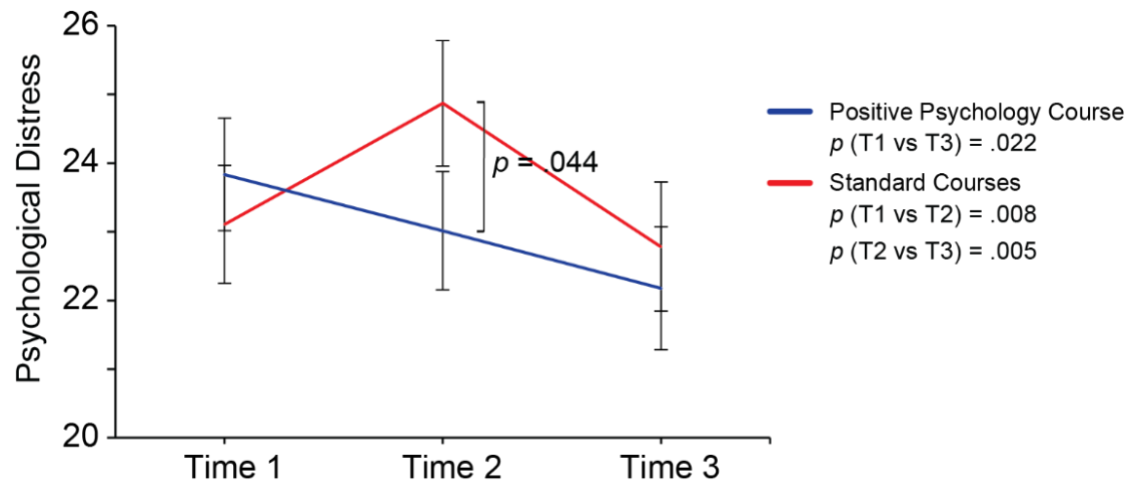
Note. All primary analysis specified baseline (time 1) and all post-hoc analyses specified end of the semester (time 2) as the reference category. PP = Positive psychology course condition; Standard = standard courses; T1 = time 1; T2 = time 2; T3 = time 3; M = male; F = female; Education completed after grade 12 = tertiary; Grade 12 education = secondary; Social ID = social identification with the university.

Psychological Distress. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed a significant interaction of course by time, $F(2, 452.74) = 5.19, p = .006$, with estimates of fixed effects indicating that the difference in psychological distress between courses was significantly larger at the end of the semester (time 2) compared to the difference between courses at baseline (time 1), $B(SE) = .34(.10), p = .001, 95\% CI [.13, .54]$, with lower scores among positive psychology students (see Table 5.12 and Figure 5.8). However, the difference between follow-up (time 3) and both baseline (time 1) and the end of the semester (time 2) was not significantly different between the two courses. To understand the significant two-way interaction between course and time, simple effects between courses, as well as within courses over time, were examined. Pairwise comparisons between courses revealed significantly lower psychological distress among positive psychology students relative to students from the standard courses at the end of the semester (time 2), $SMD = -.24, SE = .12, p = .044, 95\% CI [-.47, -.01]$ (see Appendix H). Pairwise comparisons over time within the positive psychology course also revealed significantly lower psychological distress at follow-up (time 3) compared to baseline (time 1), $SMD = .21, SE = .08, p = .022, 95\% CI [.02, .40]$, whereas standard courses reported significantly higher distress at the end of the semester (time 2) compared to baseline (time 1), $SMD = -.23, SE = .08, p = .008, 95\% CI [-.41, -.05]$, and significantly lower distress at follow-up (time 3) compared to the end of the semester (time 2), $SMD = .27, SE = .09, p = .005, 95\% CI [-.47, -.06]$ (see Appendix I). Finally, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) found no significant three-way interaction effects (all $p > .114$), indicating that the effect of the positive psychology course relative to

standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

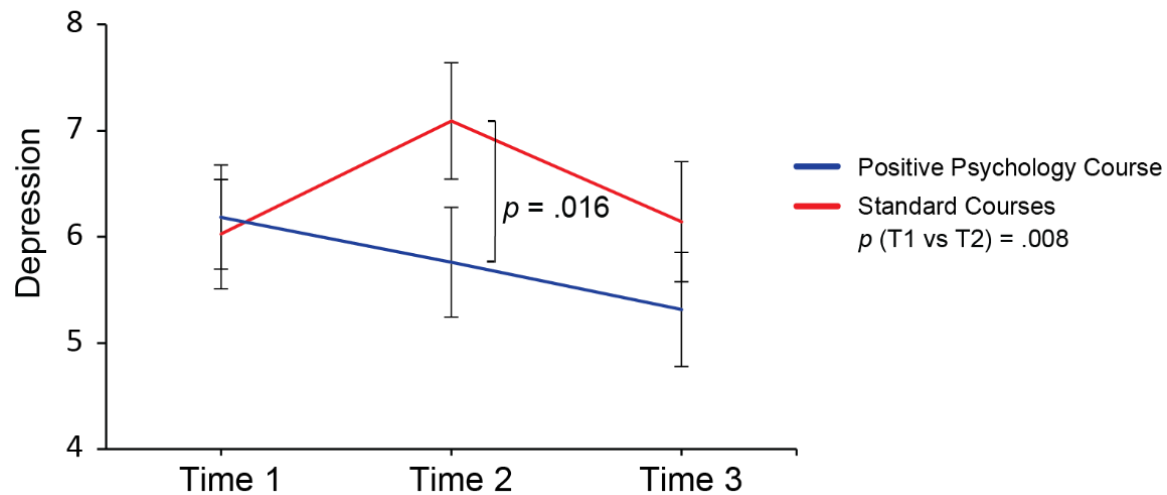
Figure 5.8

The Interaction of Course by Time for Psychological Distress



Note. Estimated marginal means of the course by time interaction effect for psychological distress demonstrates a significantly larger difference between courses at the end of the semester (time 2) relative to baseline (time 1). Pairwise comparisons also indicated significantly higher psychological distress among students from the standard courses relative to positive psychology students at the end of the semester (time 2).

Depression. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed a significant course by time interaction, $F(2, 455.28) = 4.86$, $p = .008$, with estimates of fixed effects indicating that the difference in depression between courses was larger at the end of the semester (time 2) compared to the difference between courses at baseline (time 1), $B(SE) = .33(.11)$, $p = .003$, 95% CI [.11, .54], with lower scores among positive psychology students (see Table 5.11 and Figure 5.9). However, the difference between follow-up (time 3) and both baseline (time 1) and the end of the semester (time 2) was not significantly different between the two courses.

Figure 5.9*The Interaction of Course by Time for Depression*

Note. Estimated marginal means of the course by time interaction effect for depression demonstrates a significantly larger difference between courses at the end of the semester (time 2) relative to baseline (time 1). Pairwise comparisons also indicated significantly higher depression among students from the standard courses relative to positive psychology students at the end of the semester (time 2).

To understand the significant two-way interaction between course and time, simple effects between courses, as well as within courses over time, were examined. Pairwise comparisons between courses revealed significantly lower depression among positive psychology students relative to students from the standard courses at the end of the semester (time 2), $SMD = -.29$, $SE = .12$, $p = .016$, 95% $CI [-.52, -.05]$ (see Appendix H). Pairwise comparisons over time within the positive psychology course revealed no significant differences (all $p > .059$), whereas standard courses reported significantly higher depression at the end of the semester (time 2) compared to baseline (time 1), $SMD = -.23$, $SE = .08$, $p = .008$, 95% $CI [-.41, -.05]$ (see Appendix I). Finally, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods)

found no significant three-way interaction effects (all $p > .207$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

Anxiety. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction of course by time, $F(2, 450.18) = 1.78$, $p = .169$, indicating no differences in anxiety between courses over time (see Table 5.11). Similarly, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) found no significant three-way interaction effects (all $p > .213$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

Stress. Tests of fixed effects from the interaction model (Step 4, Table 5.3 in Materials and Methods) revealed no significant interaction of course by time, $F(2, 461.35) = 1.81$, $p = .165$, indicating no differences in stress between courses over time (see Table 5.11). Similarly, tests of fixed effects from moderation models (Step 2, Table 5.4 in Materials and Methods) found no significant three-way interaction effects (all $p > .313$), indicating that the effect of the positive psychology course, relative to standard courses, was not moderated by demographic factors or social identification with the university over time (see Appendix G).

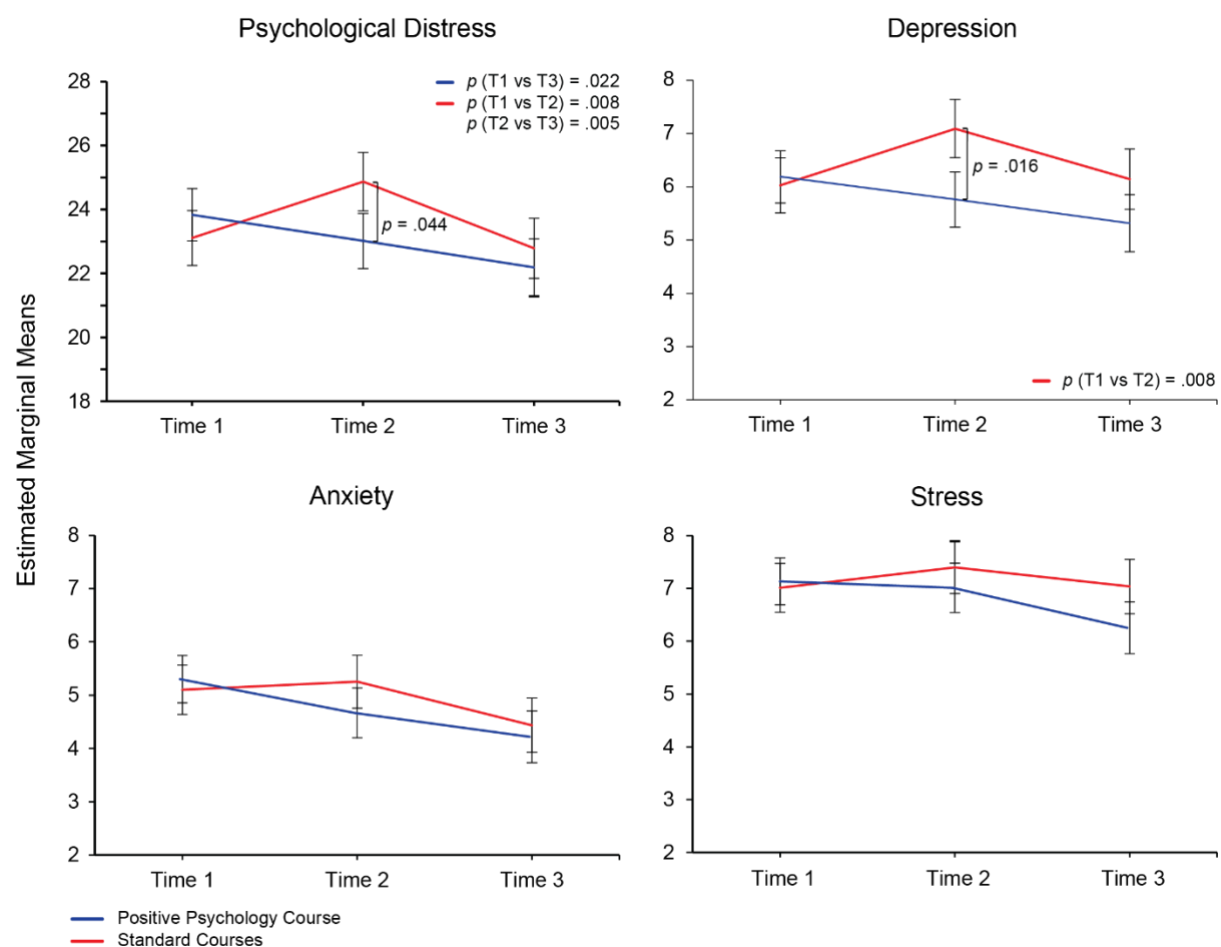
5.3.3.4 Summary of Psychological Distress Outcomes

Together, the results of MMRM analyses suggests that the positive psychology course had a beneficial impact on psychological distress. Specifically, the positive

psychology course supported students to maintain their levels of psychological distress and depression at the end of the semester, relative to students from standard courses who experienced an increase in both outcomes during this period. Note however, the magnitude of these beneficial effects were small (range = .33 to .34), as indicated by the standardised regression coefficients provided in tables 5.12 and 5.13. Furthermore, no differences between courses were observed in anxiety and stress over time, and finally, demographic factors and social identification with the university did not moderate the impact of the courses differently on any of the psychological distress outcomes over time. Figure 5.10 provides a summary of these results.

Figure 5.10

Summary of the Interaction Effect of Course by Time for Psychological Distress Outcomes



5.4 Discussion

Positive psychology courses offer a potentially cost-effective and large-scale option for promoting the mental health and wellbeing of university students. However, there are some inconsistent observations and noteworthy limitations in the research examining their efficacy for enhancing students' wellbeing and reducing their psychological distress (Hobbs et al., 2022). The current study aimed to strengthen our understanding of the impact of positive psychology courses on these outcomes by implementing a range of methodological and statistical improvements to address three key research questions. Methodological strengths of this study included the use of a control group of students, matching groups at baseline, using comprehensive and theoretically derived measures of both wellbeing and psychological distress, and a longitudinal design. Statistical strengths consisted of using multilevel modelling to account for individual variation between students, missing data, and unequal groups, as well as investigating predictors and moderators of outcomes over time. By implementing these methodological and statistical improvements, the study sought to identify (1) predictors of wellbeing and distress over time; (2) the impact of a comprehensive positive psychology course, relative to standard courses, on wellbeing and psychological distress, both upon course completion and in the longer-term; and (3) various demographic factors and social identification with the university as potential moderators of the positive psychology course's impact on these outcomes over time.

5.4.1 *Summary of the Study Findings*

In terms of research question one, our findings suggest students with lower levels of social identification with the university reported higher levels of psychological

distress and depression between during the academic semester. In terms of research question two, the positive psychology course, relative to standard courses, had a beneficial impact at the end of the academic semester on general measures of psychological wellbeing and psychological distress, as well as specific aspects of these constructs including autonomy, environmental mastery, and depression. Longer-term improvements were observed among positive psychology students relative to standard courses specifically for overall psychological wellbeing and mastery. However, the most notable observations, based on the magnitude of effects, indicated that positive psychology courses may protect students from a decrease in psychological distress and depression while enhancing autonomy and mastery at the end of the semester, and result in a longer-term increase in mastery. In addressing research question three, it was found that the higher mastery among positive psychology students, relative to students from standard courses, at the end of the semester was particularly strong for students with higher social identification with the university. In the following discussion these findings are positioned within the existing literature, implications are drawn for practice, research, and theory, and recommendations are provided for future research based on effects observed with the largest magnitudes and the highest level of probability (Wasserstein et al., 2019).

5.4.2 Predictors of Wellbeing and Psychological Distress in University Students

Higher social identification with the university was found to predict lower levels of psychological distress and depression at the beginning and end of semester, with an increase of one point in social identification reflecting a very small (.03 standard deviation) but statistically likely decrease in both outcomes. The same protective effect

of social identification on these outcomes was not sustained after the end of the semester at the six-month follow-up. In contrast, the beneficial impact of social identification with the university was consistent over time for anxiety and stress.

In line with these results, the beneficial impact of social identification on depression has been extensively documented among various populations of interest (e.g., stigmatised, social, interactive, and student groups), with these findings summarised in a large meta-analysis (Postmes et al., 2019). In one noteworthy study, higher levels of social identification with community recreation groups and clinical psychotherapy groups were both associated with lower levels of depression up to three months after the end of these groups, regardless of initial levels of depression, regularity of attendance, and type of therapeutic group (Cruwys et al., 2014). It was argued that higher social identification may specifically predict lower depression over time, as it likely relieves common symptoms of this disorder such as social withdrawal, feelings of loneliness, and a lack of purpose or meaning (Cruwys et al., 2014), and fosters a more positive cognitive attribution style (Cruwys et al., 2015).

Turning to studies concerning university students specifically, the beneficial impact of social identification has been observed for a range of mental health outcomes (e.g., depression, anxiety, stress, life satisfaction, social connectedness, loneliness, self-esteem, psychological wellbeing and distress) (Haslam et al., 2016; Hoffmann et al., 2020; Iyer et al., 2008; Jackman et al., 2022; Junker et al., 2019; McIntyre et al., 2018). On the basis of these findings, researchers have begun promoting the use of positive group-based interventions as a social cure for the high levels of psychological distress and mental health problems observed among student populations (Haslam et al., 2016; Haslam et al., 2022; Jetten et al., 2011). However, to our knowledge, the longitudinal

impact of social identification with the university on mental health outcomes has not been explored. The current study therefore extends on this research by examining the influence of students' social identification with the university on various aspects of both psychological distress and wellbeing over a period of nine months. In support of the current results, which indicate that social identification may be protective during the stressors of the academic semester, a longitudinal study of a theatre company similarly observed lower levels of burnout during the most demanding periods of production among individuals with higher identification with the group (Haslam et al., 2009).

Examining the impact of social identification irrespective of time, the results from the present study indicated that social identification with the university positively predicted nearly all wellbeing outcomes, and negatively predicted all psychological distress outcomes measured. Thus, the lack of significant difference over time in the influence of social identification on wellbeing outcomes, and anxiety or stress, suggests that it was equally protective at each of the three time points, consistent with previous research (Postmes et al., 2019). Again, a one-point increase in social identification predicted very small (range = .01 to .06 standard deviation) but statistically likely increases in wellbeing outcomes and decreases in anxiety and stress. Existing research supports these findings, with higher levels of various indicators of social identification associated with lower psychological distress (Cruwys et al., 2013; Gleibs et al., 2011; Iyer et al., 2008, 2009; Sani et al., 2015; Tong et al., 2019). However, fewer studies have examined the potential impact of social identification on psychological wellbeing, with measures of depression or distress often used as proxy measures. In recognition of this gap in research, a recent study has examined the relationship between social identification and psychological wellbeing among postgraduate students (Jackman et

al., 2022). Results indicated that higher social identification with peers and the academic community predicted both higher psychological wellbeing and lower psychological distress. The present study extended this research by exploring the longitudinal predictive power of social identification on these outcomes, and demonstrating the potentially beneficial impact of social identification on specific aspects of psychological wellbeing and distress within undergraduate students.

Interestingly, social identification with the university did not predict students' sense of autonomy, as one of six aspects of psychological wellbeing (Ryff, 1989b). According to the social identity approach, individuals may be more likely to adopt the norms of a group when they identify strongly with that group (Tajfel & Turner, 2001; Turner et al., 1987). However, doing so may be incongruent with enhancing one's sense of autonomy, as this aspect of psychological wellbeing reflects the ability for independent thought and behaviour, and to resist social pressure (Ryff, 1989b). In support of this, Chatzisarantis et al. (2009) have demonstrated positive but independent impacts of social identification with a meaningful group, and perceived autonomy support from significant others, on students' health behaviours.

Finally, demographic factors did not predict differences in overall psychological distress or wellbeing over time. However, gender and age did predict specific aspects of these constructs, irrespective of time, indicating their relevance at each time point. Firstly, females reported lower autonomy, and higher psychological distress and stress, compared to males, although these effects were small in magnitude and only the regression coefficients for psychological distress demonstrated a high level of statistical probability. Despite this, several studies have similarly observed poorer scores among females relative to males across a range of mental health outcomes (Cvetkovski et al.,

2012; Said et al., 2013; Stallman, 2010). The research regarding gender differences in autonomy is more limited, but available studies also suggest lower autonomy among females relative to males in a range of workplaces, and in the science, technology, engineering, and mathematics disciplines in educational institutions (Patall & Zambrano, 2019; Stojmenovska, 2023). Secondly, older students reported higher levels of personal growth and purpose in life, which could reflect the fact that the definition of these constructs depends on an accumulation of experiences over time or a sense of directedness which may be more pronounced with age (Ryff, 1989b). In contrast, no differences were observed in any measure of psychological wellbeing and distress as a function of students' highest level of education (i.e., secondary versus tertiary). As each of these observations may be limited by the over-representation of female, younger (18 to 25 years), secondary-educated students in our sample, they should be interpreted with caution, and future research is recommended into the longitudinal impacts of these demographic factors on students' level of wellbeing and psychological distress.

5.4.3 The Impact of the Positive Psychology Course versus Standard Courses on Wellbeing and Psychological Distress Outcomes

The results revealed small but positive and highly probable differences in the trajectory of several general and specific measures of both wellbeing and psychological distress outcomes over time as a result of completing the positive psychology course. In sum, there was a short-term beneficial impact of the positive psychology course, relative to standard courses, on psychological wellbeing, autonomy, environmental mastery, psychological distress, and depression. However, beneficial longer-term effects resulting from the course were only observed for psychological wellbeing and environmental mastery.

Interestingly, short-term gains among positive psychology students appeared to be mostly driven by a relative decrease in psychological functioning among students from standard courses, while longer-term differences were driven by an increase in positive outcomes among positive psychology students. In the context of existing evidence, which indicates that positive psychology courses either enhance wellbeing (Lambert et al., 2018; Yaden et al., 2021) or help students to maintain their level of wellbeing upon course completion (Hood et al., 2021; Young et al., 2022), the current results provide support for both trajectories of changes in students' wellbeing and distress over time depending on the timepoint investigated.

Despite these positive changes in the trajectory of these outcomes among positive psychology students, it should be emphasised that the magnitude of these effects was only small. With this in mind, the most notable observations arising from the strongest effects indicate that positive psychology courses may protect students from a decrease in psychological distress and depression at the end of the academic semester, and result in a longer-term increase in environmental mastery. In the following discussion the nuances in knowledge offered by the study's findings are considered in terms of (1) examining both wellbeing and psychological distress; (2) assessing specific components of wellbeing; and (3) evaluating the longer-term impacts of a positive psychology course.

5.4.3.1 Examining Wellbeing and Psychological Distress

The present study contributes to our understanding of the short-term impact of positive psychology courses on general measures of both wellbeing and psychological distress. With regard to general measures of psychological wellbeing and psychological distress, the difference that emerged between the positive psychology course and the standard courses was significantly larger at the end of the semester compared to the

difference at the beginning of the semester, with higher psychological wellbeing and lower psychological distress at the end of the semester among positive psychology students relative to students from standard courses. Both observations appeared to be driven by a relative decrease in wellbeing and an increase in distress at the end of the semester among standard course students. In support of these observations, a recent evaluation of a similar positive psychology course concluded that these courses safeguard students from a decline in wellbeing rather than enhancing their wellbeing (Young et al., 2022). Specifically, Young et al. (2022) found that positive psychology students were able to maintain their wellbeing across the semester, while students from an introductory psychology course experienced a significant decline in wellbeing in this time. In contrast, one of the few randomised control trials investigating positive psychology courses found evidence for both a protective and an enhancement effect in a three-part study (Hood et al., 2021). As the protective effect resulting from the positive psychology courses occurred during the COVID-19 pandemic, while the enhancement effect was observed in the period before the pandemic, the authors concluded that similar courses may protect students from a decline in their wellbeing during stressful periods of time, and enhance wellbeing in the absence of a stressor.

Similar to prior studies, the present study also investigated the impact of a positive psychology course on overall happiness or subjective wellbeing, and observed no difference between positive psychology students and students from standard courses. The lack of improvement in happiness may be due to the course's predominant focus on psychological wellbeing (with only one lecture on positive emotions) or the lack of range in the measures for subjective wellbeing used in this current research. Furthermore, subjective wellbeing generally reflects transient, state-based feelings of happiness,

positive and negative affect or life satisfaction (Diener, 1994; Dodge et al., 2012). Thus it may be more susceptible to change with contextual factors and less likely to demonstrate long-lasting gains in the absence of the positive experiences facilitated by a positive psychology course, due to hedonic adaptation (Sheldon & Lyubomirsky, 2019). In addition, at baseline, students from both courses reported scores within the normal range of happiness compared to normative data (Butler & Kern, 2016). Consequently, they may have been less prone to experience further gains as a result of participating in the positive psychology course. Nonetheless, it remains important for positive psychology courses to better target and measure all aspects of subjective wellbeing (i.e., positive and negative affect and life satisfaction), particularly relative to standard courses, as positive psychology interventions which target both subjective and psychological wellbeing have been found to demonstrate a greater beneficial effect on mental health outcomes (Koydemir et al., 2020).

Despite recognition among researchers that both wellbeing and distress are important components of a complete state of mental health (Keyes, 2005), few studies have previously investigated the impact of positive psychology courses on psychological distress. Among these few studies, Lefevor et al. (2018) observed lower psychological distress among students following the completion of a positive psychology course, while Goodman et al. (2016) observed lower symptoms of depression and stress. Only the latter study was grounded in wellbeing theory and compared outcomes to a control group of students, though it was limited by a small sample. Building on these studies, the present study investigated the impact of a positive psychology course on generalised psychological distress, and found that levels for positive psychology students remained the same, while students from the standard courses experienced a significant increase,

resulting in a significant difference between courses at the end of the semester. Together, the findings of the current study suggest that positive psychology courses may protect students from experiencing the common increase in psychological distress which comes with the end-of-semester examination period (Lyndon et al., 2014), while helping them to retain their overall psychological wellbeing in the short term.

5.4.3.2 Assessing Specific Components of Psychological Wellbeing and Distress

The present study also provides insights into the short-term impact of a comprehensive positive psychology course on specific components of psychological wellbeing and distress. Prior research that has measured the components of wellbeing has entailed studies focused on specific positive psychology interventions (Green, 2022; Smith et al., 2021, 2023), preventative evidence-based wellbeing programs offered outside of the tertiary curriculum (Seppälä et al., 2020), and studies limited by sample size (Goodmon et al., 2016) or lacking a control group (Young et al., 2022). Extending on this research, the current study found that the difference between the positive psychology and standard courses was significantly larger at the end of the semester compared to the beginning of the semester for environmental mastery and depression. These differences between courses were driven by a decrease in environmental mastery and an increase in depression during the semester among students from standard courses, while these outcomes remained stable among positive psychology students. In contrast, the difference in autonomy between courses was significantly smaller at the end of the semester compared to the beginning, indicative of beneficial gains resulting from the positive psychology course, as positive psychology students experienced a significant increase in autonomy during this period of time, while students from

standard courses remained stable. Together, these findings suggest that positive psychology courses may support students to maintain their levels of environmental mastery and depression at the end of the semester (in contrast to the deterioration seen in students from standard courses), while enhancing their autonomy (in contrast to no change in students from standard courses).

It is possible that inconsistencies in the nature of course impact in the literature may reflect differences in course characteristics, study design, and the measures used to capture the constructs of wellbeing and psychological distress across different studies. For example, one commonality among courses resulting in a maintenance effect appears to be the measurement of post-intervention outcomes either during the academic semester, an examination period at the end of the semester, or in a period of global uncertainty and stress (Hood et al., 2021; Young et al., 2022). In contrast, courses resulting in an enhancement effect appear not to have been delivered under similar course-related or environmental stressors as they were either offered as a stand-alone massive online open course (Yaden et al., 2021), or within a different undergraduate course and degree structure with smaller class sizes (Lambert et al., 2018). It could be argued that outcomes measured during or at the end of the semester, such as in the current study, may be more ecologically valid as they simulate more typical student experiences. As noted by Goodman et al. (2016), and comparable to the present study's findings, "these results are particularly compelling, given the fact that the post-course assessments were completed during one of the most stressful times of the semester (i.e., before final exams in each course)" (p. 235). It remains difficult to compare studies and draw general conclusions about the efficacy of positive psychology courses more

broadly, however, as these courses vary greatly in theory, structure, content, and activities included (Hobbs et al., 2022).

5.4.3.3 Evaluating the Longer-term Impacts of a Positive Psychology Course

Finally, the present study strengthens our understanding of positive psychology courses by investigating their longer-term impact on general and specific measures of wellbeing and psychological distress. We did this by comparing outcomes at baseline with outcomes at both the end of the semester and at a six-month follow-up, as well as comparing end-of-semester outcomes to outcomes at follow-up.

With regard to wellbeing outcomes, the results demonstrated that the aforementioned positive short-term gains resulting from the positive psychology course were maintained by students for overall psychological wellbeing and environmental mastery. In a similar evaluation, sustained improvements in psychological wellbeing among positive psychology students were observed six weeks after course completion (Hood et al., 2021). This evidence of sustained improvement in wellbeing following the positive psychology course stands in contrast to another study which documented a lack of sustained improvement in psychological wellbeing three months after course completion (Lambert et al., 2018).

Several noteworthy differences between these positive psychology courses may have contributed to these divergent results. Specifically, Lambert et al. (2018) structured their 13-week positive psychology course on the PERMA+ model (Seligman, 2011), with one week focused on positive emotions, engagement, meaning, and accomplishment, and four weeks on relationships (individual and community). In contrast, the positive psychology course in the current study provided a more comprehensive coverage of

wellbeing topics as it was founded on both the PERMA model (Seligman, 2011) and the model of psychological wellbeing (Ryff, 1989b). Furthermore, Lambert et al. (2018) examined the impact of a positive psychology course on a more ethnically diverse sample of students and, as such, the lack of longer-term gains observed in their study suggests potential cultural differences in the beneficial impact of positive psychology courses. Finally, sustained improvements in wellbeing have also been observed from nine weeks to six months after course completion, although these observations come from more specific or focused positive psychology courses (Duan et al., 2014; Green, 2022). The current results provide preliminary evidence for the beneficial longer-term impact of a comprehensive positive psychology course on various aspects of psychological wellbeing.

The present findings further contribute to existing research by examining the impact of a positive psychology course on general and specific measures of psychological distress over the longer-term. In doing so, no differences were found in these outcomes between courses at the six-month follow-up, although this was not driven by an increase in distress between the end of the semester and follow-up among positive psychology students but by a decrease in these outcomes among students from standard courses so that they came to match the positive psychology students. Accordingly, it can be concluded that the beneficial impact of the positive psychology course on generalised psychological distress and depression was specific to periods, such as the end-of-semester assessments and examinations, in spite of similar levels of anxiety and stress over the nine-month period of measurement.

Taken together, the positive psychology course supported students to maintain their level of psychological wellbeing, psychological distress, environmental mastery,

and depression in the short term. Furthermore, the positive psychology course resulted in a short-term increase in autonomy. Moreover, longer-term increases were found for overall psychological wellbeing and environmental mastery. More specifically, the positive short- and longer-term differences observed in the trajectory of these outcomes more broadly indicates that positive psychology courses may protect undergraduate students against the detrimental impact of the academic semester on psychological wellbeing and distress (Young et al., 2022), and only produce meaningful gains in wellbeing after the end of this stressor. In support of this, studies have demonstrated that various course-related factors such as workload, assessment stress, sense of belonging, autonomy support, peer engagement, and autonomous motivation in combination predict wellbeing among undergraduate students more than demographics, situational, and course progress and participation factors (Larcombe et al., 2021). Accordingly, students may have more time and greater capacity to consolidate and integrate their new-found knowledge and skills from positive psychology courses into their daily life during their end-of-semester holidays (Green, 2022).

These results additionally provide insights into the aspects of psychological wellbeing that a positive psychology course may be most effective in targeting. The most pronounced and notable impact observed, as indicated by effect size, in the present study was for autonomy and environmental mastery. For autonomy, positive psychology students improved in the short term, while students from standard courses remained stable, though no longer-term difference between the courses was found. In contrast, for mastery, positive psychology students improved in the longer-term, despite remaining stable in the short term, relative to students from standard courses, who declined in the short term and did not return back to baseline in the longer-term. As

greater autonomy and mastery broadly reflect greater independence and competence (Ryff, 1989b), these notable findings demonstrate the potential for positive psychology courses to support students to feel more confident and capable of managing their lives from the beginning of their tertiary education, despite the potential exposure to university and course-related stressors, and levels of anxiety and stress similar to students from standard courses. More specifically, it could be proposed that positive psychology courses enhance students' self-efficacy pertaining to a greater belief in their ability to cope with stressors (Bandura, 1977). In line with this, research suggests that psychological wellbeing and self-efficacy are correlated, with some studies indicating that self-efficacy predicts psychological wellbeing (Siddiqui, 2015), and others suggesting psychological wellbeing predicts self-efficacy (Freire et al., 2019). Moreover, greater self-efficacy has been shown to positively mediate the relationship between psychological wellbeing, and effective coping and higher resilience among university students (Freire et al., 2019; Sabouripour et al., 2021). However, research has not yet examined the impact of positive psychology courses on self-efficacy, or whether self-efficacy may mediate or moderate any beneficial effects resulting from positive psychology courses relative to standard courses. This would therefore be a novel direction for future research.

The present study also provides insight into the aspects of psychological wellbeing that a positive psychology course may be least effective in targeting. Surprisingly, personal growth and positive relations with others were unaffected by the positive psychology course. One explanation for this may be that these aspects of psychological wellbeing may not be easily enhanced over a short period of time. In support of this, the present study found that age positively predicted both personal

growth and positive relations with others. Additionally, items measuring personal growth in particular appear to relate to an accumulation of life experiences (Ryff, 1989b), although research on people aged between 32 and 75 years suggests it declines with age (Springer et al., 2011). Conceptually however, it is likely that personal growth increases into early adulthood and then begins to decline with age. Alternatively, the lack of an impact on positive relations with others may have been due to the limited opportunity for engagement with others in the positive psychology course, as there were no tutorials. Given the comprehensive nature of the course in question, the lack of positive change in these aspects of psychological wellbeing suggests positive psychology courses more broadly should better incorporate theory, research, and practice tailored towards enhancing personal growth and positive relations. It is recommended that courses include research underpinning what is known about the process of personal growth, combined with additional personal growth enhancing initiatives that focus on preparing, planning, and enacting self-change (Thoen & Robitschek, 2013), as well as activities such as autobiographical expressive-writing tasks (Ruini & Mortara, 2022). Furthermore, courses should target all five aspects of social wellbeing (i.e., social contribution, integration, actualisation, acceptance, and coherence) to better promote positive relations at the individual and system levels (Keyes, 1998). Moreover, positive differences were not observed between the courses for anxiety and stress over time, indicating the need for these outcomes to be better addressed in positive psychology courses. It is recommended that educators consider incorporating mindfulness, meditation, and relaxation strategies, which have proven to be effective for managing symptoms of anxiety and stress, into these courses in future (Bughi et al., 2006; Dawson et al., 2020; Medlicott et al., 2021).

5.4.4 *Moderators of Course Impact*

Demographic variables and social identification with the university were explored as moderators of a positive psychology course's impact on general and specific aspects of wellbeing and psychological distress. Consequently, it was found that positive psychology courses may benefit some students more than others at particular points in time. Specifically, relative to students from standard courses, positive psychology students with higher social identification with the university experienced greater mastery at the end of the semester. In support of this, studies have demonstrated better physical and mental health outcomes resulting from group-based health interventions among participants with higher social identification with these groups (Cruwys et al., 2014; Haslam et al., 2016, 2020; Steffens et al., 2021). On the basis of this social psychological research and social identity theory (Tajfel & Turner, 2001), it could be speculated that students who identify strongly with the university may be more receptive to the ideas and strategies suggested by the positive psychology course, and consequently, have experienced greater gains from these courses relative to students who do not identify as strongly with the school or university.

In contrast, students from standard courses with higher social identification with the university experienced greater positive relations with others relative to positive psychology students at the end of the semester. This protective effect of social identification for positive relations with others was not observed for positive psychology students. The lack of a positive impact of the positive psychology course on relationship quality, even for students with higher social identification, may be due to the lack of opportunities for peer interaction relative to standard courses, which likely included accompanying laboratory or tutorial classes in addition to lectures.

The magnitude of these differences was only small, with a one-point increase in social identification reflecting less than one standard deviation change in the mastery and positive relations with others. Nonetheless, these findings contribute to our currently limited understanding of the moderators of the impact of positive psychology courses given that researchers have not previously examined demographic variables and social identification with the university as moderators of a positive psychology course's efficacy. Indeed, only one study to our knowledge has explored moderators of the impact of a comprehensive positive psychology course (Young et al., 2022). As such, future research is recommended to continue to explore moderators of course efficacy. This will enable educators to develop these courses with specific student sub-populations in mind, or to optimise course efficacy and enhance outcomes in a more individualised manner (Senf & Liao, 2013).

5.4.5 *Practical Implications*

This research has several meaningful implications for the practice of mental health support in university settings. Firstly, the findings suggest that comprehensive positive psychology courses can enhance students' psychological wellbeing and sense of mastery in particular, and reduce their psychological distress and depression, albeit in a small but meaningful way, while they struggle with similar levels of anxiety and stress as other students. Given this, positive psychology courses may be useful for universities to implement as a preventative intervention to buffer against the detrimental stressors that may be encountered within the university system, and to support all students rather than just those that are vulnerable to mental illness. This may reduce the burden carried by more traditional mental health services available within universities.

Although the magnitude of beneficial effects observed in the present study was only small, it is possible that positive psychology courses may result in greater positive change in the broader student population. This notion arises from the literature concerning preventative interventions for mental health disorders, which similarly only produce small effects on individuals, given that they target healthy, non-clinical samples (Mendelson & Eaton, 2018). However, these researchers propose that the cumulative impact on each healthy individual within their sample may nonetheless produce a meaningful change in the average level of health and wellbeing in the general population or a sub-population at risk. Furthermore, as argued by renowned epidemiologist and founder of preventative medicine Geoffrey Rose, there may be relatively greater value in supporting a large number of people with a moderate risk of illness than a small number of people at high risk (Rose et al., 2008). In support of this, the efficacy of large-scale preventative interventions for medical and physical health conditions have been well documented (Ahern et al., 2008). However, there is less evidence for their efficacy within the mental health and wellbeing literature (Hotopf et al., 2015), indicating the need for more research in this area in the context of universities and the education sector more broadly (Bantjes et al., 2022; Greenberg & Abenavoli, 2017).

Given the potential population-level impact of positive psychology courses, they offer a cost-effective and advantageous intervention for supporting students' mental health in tertiary educational settings. Relative to under-resourced university counselling centres, which generally provide one-on-one support (Stallman, 2012), positive psychology courses can target a larger proportion of the student body using fewer resources (Hobbs et al., 2022; Young et al., 2022). Furthermore, aspects of positive psychology courses may be embedded within more traditional undergraduate courses

(Magyar-Moe, 2011; Young et al., 2022) to make them even more cost-effective. Indeed, the beneficial impact of such courses might go beyond the individuals completing the course, as the new-found knowledge and skills may be shared with, and used to support, friends and family (Maybury, 2013). Additionally, the observed popularity of positive psychology courses more broadly (Shimmer, 2018) indicates that they may be a more accessible and acceptable intervention compared to individual counselling, which generally has low rates of utilisation and higher rates of attrition (Cooke et al., 2006; Raunic & Xenos, 2008).

Positive psychology courses may also be more accessible and acceptable as they offer a course-based approach to enhancing wellbeing that has several advantages for student engagement and retention within these interventions. Specifically, these courses are typically credit-bearing units that contribute to the completion of a program of undergraduate study (Hobbs et al., 2022). As a result, they may enable students to focus on enhancing their wellbeing in a manner that does not impede upon the time they have allocated to study, work, and recreation. In contrast, voluntary programs offered outside of the curriculum may be an additional burden on their often limited time and heavy workloads. Positive psychology courses may also normalise conversation about mental health, and reduce the stigma associated with seeking mental health support as all students are required to participate, relative to interventions designed specifically for vulnerable individuals (Greenberg & Abenavoli, 2017).

In addition to these practical implications, the findings of the present study have implications for future research. Firstly, the findings highlight the importance of investigating the impact of positive psychology courses on both mental wellbeing and ill-being. Although research into these two broad categories of mental health outcomes

has traditionally occurred in isolation, it is now recognised that they are complementary goals (Iasiello & van Agteren, 2020; Keyes, 2005). Accordingly, collaboration between researchers and an interdisciplinary focus would enable a more holistic assessment of, and intervention into, the mental health of an individual or population. Wellbeing therapy (Fava, 1999) provides an excellent example as it combines cognitive behaviour therapy with Ryff's (1989a) model of psychological wellbeing. Applications of wellbeing therapy in school settings (Ruini & Fava, 2012), and combining strategies from positive psychology and lifestyle medicine (Przybylko et al., 2022) further demonstrate promising results for its use as a preventative intervention for student populations.

5.4.6 *Limitations and Future Directions*

Despite these important implications, the present study is not without limitations. Firstly, the participants of the study were not randomised into their course conditions, as course preferences were determined by students. As a result, it is difficult to rule out the possibility that students who enrolled in the positive psychology course were more interested in learning about and engaging in wellbeing-enhancing activities, and thus, more likely to experience benefits from the course. To mitigate this problem, positive psychology students were compared to their counterparts at baseline to ensure that both course conditions were matched on a number of demographic variables and personality traits. The only significant difference between the positive psychology and standard courses was in terms of year of study, with a greater number of second year students in the positive psychology course condition. This may be indicative of the higher workload in second year and related recognition among students of the need to actively focus on managing their wellbeing. Some discrepancy across study year levels

was also expected, as the positive psychology course was a first-year elective course with no prerequisites, whereas the standard courses were not limited to first year courses but instead sampled from the complete list of undergraduate arts and science courses on offer that semester. In addition, the courses were compared at baseline on all wellbeing and psychological distress outcomes, with no significant differences between them.

This was also the first evaluation of a positive psychology course to compare the degree to which students were responding in a socially desirable manner at baseline, in terms of both honest but overly positive responding (self-deceptive enhancement), and a bias towards pleasing others (impression management) (Hart et al., 2015). No significant difference between courses in either manner of responding was observed. As such, these findings together suggest that the self-selection of students into the positive psychology course did not have a significant influence on our results.

A second limitation of the present study is that the sample was limited in its diversity on several dimensions, which may limit the generalisability of the results. For example, participants were mostly young females in their second year of study. Additionally, despite comprising a mixture of ethnicities, the sample size was not large enough to make meaningful comparisons between them. Furthermore, information was not obtained to identify potential differences in course efficacy between domestic and international students, full-time and part-time students, or vulnerable student groups, including financially disadvantaged (Wilks & Wilson, 2012), Indigenous (Toombs & Gorman, 2011), LGBTQ (Connolly et al., 2016; Fink, 2014; Liu et al., 2018), and medical and law students (Leahy et al., 2010; Storrie et al., 2010). By collecting a more diverse sample, future research could investigate the impact of positive psychology courses on different vulnerable subgroups within the university, and establish evidence for their

use in supporting a broader range of students. Relatedly, it was also difficult to ascertain data regarding the demographic composition of the population of students sampled in this research. As a result, statements about the samples' representativeness were not made.

The conclusions that can be drawn about the impact of the positive psychology course are also limited by the measures of wellbeing and distress used in the present study. Specifically, the utilised measures of psychological distress provided a general measure of psychopathology, and did not capture severe mental illness (Kessler et al., 2002; Lovibond & Lovibond, 1995). Similarly, the utilised measures of wellbeing captured personal information about a person, and did not provide an understanding of the social structures or systems within which the person exists (Keyes, 1998). As a result, inferences about the impact of the positive psychology course on severe mental health and social wellbeing cannot be made in the present study. Future research should use measures of mental illness that are more distinct from measures of mental health (Feldman Barrett & Russell, 1998; Iasiello & van Agteren, 2020) in order to capture the full spectrum of symptom severity. This would enable researchers to draw conclusions about the impact of a positive psychology course on various levels of mental illness, and better understand their potential reach or limits.

Similarly, future research should investigate the impact of these courses on social wellbeing specifically. To date, only one study has evaluated this and beneficial effects were observed (Young et al., 2022). Although positive effects were observed, this study did not evaluate course impacts on the five key aspects of social wellbeing (Keyes, 1998) and did not include a control condition. A more in-depth evaluation of social wellbeing would consider an individual's perception of their relationship with society (social

integration), their evaluation of their social value (social contribution), their beliefs about the organisation of society (social coherence), their opinions on the condition and future trajectory of society (social actualisation), and their view of others from society (social acceptance).

It is also worth noting that purpose in life did not demonstrate good internal consistency, as a subscale of Ryff's (1989b) shortened psychological wellbeing scale, and thus may not be capturing this construct appropriately. However, this is a consistent observation in the literature for the shortened version of the psychological wellbeing scale (Clarke et al., 2001; Li, 2014; Ryff et al., 1994), and has been justified by Ryff and Keyes (1995) in its development as necessary to maximise the conceptual breadth of the subscale. Future research may use the longer versions of the measure, which demonstrate better psychometric properties, though this may impact survey duration, and thus, survey completion and participant retention over time.

Also consistent with prior research, the present study was limited in its reliance on self-report measures, thus warranting further research exploring the impact of positive psychology courses on objective outcomes of wellbeing specific to university life. These could include measures such as academic achievement, and degree participation, progress, and completion.

Given the small number of experimentally rigorous evaluations of positive psychology courses (Hobbs et al., 2022), a number of additional directions are recommended for future research. Firstly, it is recommended that research compare the efficacy of positive psychology courses for enhancing wellbeing and reducing distress to more traditional and potentially scalable therapies. For example, Seppälä et al. (2020) conducted a randomised controlled trial which compared a semester-long wellbeing

program to a mindfulness-based stress-reduction program, an emotional intelligence program, and a non-intervention control group. Although this wellbeing program was not based on wellbeing theory and was not embedded within the curriculum as a course, it included several positive psychology interventions. As the wellbeing program demonstrated the largest positive effects, the study provides strong evidence for the use of positive psychology interventions as a cost-effective, preventative approach to support students' mental health. There are also several mental health literacy, general health, lifestyle, and healthy coping courses (Becker et al., 2008; King et al., 2022; Myers et al., 2017; Przybylko et al., 2022) which have demonstrated promising efficacy. Future research may compare the impact of positive psychology course with these similar yet distinct courses.

Secondly, there is a large amount of variability in the structure and content of positive psychology courses. Therefore, future dismantling research is needed to identify the essential or effective components of positive psychology courses as this would enable educators to synthesise them into their most efficient forms. Although research remains sparse on the critical components of these courses, our study suggests that including wellbeing theory, evidence-based wellbeing-enhancing activities, and reflective assignments may be important. Similarly, it is necessary for research to continue investigating psychosocial variables that moderate the impact of these courses in order to enhance their efficacy in targeting specific groups of students. While the present study only explored demographic variables and social identification with the university as moderators, there remain a multitude of potential variables that may influence student mental health (Limone & Toto, 2022; Toit et al., 2022). Accordingly, it is recommended that future research on positive psychology courses investigate other

mechanisms related to mental health such as self-efficacy, and incorporate additional covariates to provide a more comprehensive analysis. In addition, future research could also evaluate the impact of positive psychology courses on course satisfaction and student engagement to quantify the observed popularity and acceptability of these interventions. Finally, research is needed on the economic viability of these courses and their impact on academic outcomes, as this would strengthen the business case for implementing them as part of standard practice in universities globally (Mendelson & Eaton, 2018).

5.4.7 Conclusion

To our knowledge, the present study is the first to evaluate the immediate and longer-term impacts of a comprehensive positive psychology course on a range of wellbeing and psychological distress outcomes among undergraduate students, and one of a limited number to explore whether they may benefit some students more than others. In summary, findings indicate that positive psychology courses may protect students from a decrease in psychological wellbeing, psychological distress, environmental mastery, and depression, while also enhancing autonomy, at the end of the academic semester, and result in a longer-term increase in overall psychological wellbeing and environmental mastery. Furthermore, students with higher levels of social identification with the university reported a higher sense of mastery at the end of the semester, relative to students from standard courses. Finally, the study also investigated predictors of wellbeing and psychological distress among students over time, irrespective of course membership, and observed that the protective effect of social identification emerged once more, with lower psychological distress and depression during the academic semester for those with higher social identification. Compared to

prior evaluations of comprehensive positive psychology courses, however, the beneficial impacts of the positive psychology course evaluated in the present study were relatively small in magnitude. Nonetheless, the results of this study strengthen our understanding of the beneficial impact of positive psychology courses on students' mental health through implementing a range of methodological and statistical improvements. On the basis of the main findings, positive psychology courses may be a relatively cost-effective, preventative approach for addressing the mental health and wellbeing of students in higher education, in addition to complementary social-identity-enhancing interventions. The findings support the incorporation of these courses as one strategy in a whole-of-university approach to promoting wellbeing in institutions of higher education.

Chapter 6 Study 2: Eliciting Student Perspectives to Inform the Design of Positive Psychology Courses: A Qualitative Study

Aflaha Rukhsaar Khan^{a*} and Elizabeth Rieger^a

^a*School of Medicine and Psychology, Australian National University, Canberra, Australia*

Publication Status: This is an Accepted Manuscript of an article published by Taylor & Francis in *Pastoral Care in Education* on 6 September 2023, available online:
<https://doi.org/10.1080/02643944.2023.2247396>.

Reference:

Khan, A. R., & Rieger, E. (2023). Eliciting student perspectives to inform the design of positive psychology courses: a qualitative study. *Pastoral Care in Education*, 1-21.
[10.1080/02643944.2023.2247396](https://doi.org/10.1080/02643944.2023.2247396)

Author contributions: Aflaha Khan and Elizabeth Rieger designed the study. Aflaha Khan conducted recruitment, focus groups, preliminary analysis of themes, and development of the manuscript. Elizabeth Rieger conducted analyses of themes and commented on successive drafts of the paper. Both authors had final approval of the submitted and published versions.

Abstract

Undergraduate positive psychology courses are typically semester-long educational courses or units of study dedicated to providing students with an understanding of the science of wellbeing and the factors contributing to optimal human functioning. A number of universities around the world offer positive psychology courses, yet little is known about students' perspectives of these courses. Evaluating students' perspectives may enable educators to modify courses to better address students' needs, which in turn, may increase engagement with, and learning in these courses. This study provides an in-depth account of students' perspectives on a positive psychology course offered at an Australian university. After completing the course, nine students participated in focus groups to discuss their experiences. Using Interpretative Phenomenological Analysis, three superordinate categories (and 14 subcategories) were identified, namely, interest in wellbeing, beneficial to wellbeing, and balancing competing needs. Participants expressed interest in learning about wellbeing, experienced the course as beneficial for wellbeing, and recognised several challenges in delivering course content. The richness of these results supports the utility of assessing and evaluating students' perspectives using a qualitative approach, and the emerging themes provide insights into the aspects of positive psychology courses more broadly that may enhance students' learning and wellbeing.

6.1 Introduction

Over the past three decades, the mental health and wellbeing of undergraduate university students has deservedly received international research attention. A review of this literature suggests that the psychological functioning of many students from diverse academic backgrounds is impaired from the beginning of tertiary education, irrespective of prior functioning, and progressively deteriorates over the duration of their degrees (Sharp & Theiler, 2018). This is a global phenomenon, as data from large surveys of students from a number of Western (Auerbach et al., 2018) and South East Asian countries (Dessauvagie et al., 2022) indicate concerning levels of psychological distress, with approximately one in three or four students experiencing a mental health disorder during their tertiary education. Similarly, data from Australian studies suggests 4.4 times more psychological distress among students compared to age-matched peers (Leahy et al., 2010), with approximately 84% of students reporting meaningful levels of psychological distress compared to only 29% of age-matched peers (Stallman, 2010). These findings indicate that undergraduate university students are a vulnerable population (Evans et al., 2018). Among the experiences within the university environment that might contribute to this vulnerability, and impair students' mental health and wellbeing, are higher workloads, assessment-related stress, and feelings of not belonging, and lower teacher autonomy support, motivation for study, and peer relationships (Larcombe et al., 2021). This vulnerability was further heightened by the COVID-19 pandemic due to increased uncertainty and independent learning, combined with disruptions to routines and social resources (Grubic et al., 2020), which underscores the need for universities to provide augmented support for students' wellbeing.

The negative impact of psychological distress on university students further highlights the need for solutions. Specifically, higher levels of psychological distress in university student populations have been linked to poorer academic performance (Sharp & Theiler, 2018; Stallman, 2010). Furthermore, mental health difficulties have been associated with a higher frequency of problematic health behaviours, including smoking cigarettes, drinking alcohol, and self-harm or suicide (Sharp & Theiler, 2018). These negative outcomes have the potential to not only impact students' physical and mental health, productivity, and future careers, but also the public image and profile of universities.

To mitigate these negative outcomes, universities have introduced free medical and counselling services. However, counsellor-to-student ratios and the average number of sessions attended per student are consistently low, suggesting that these services are inadequately equipped to respond effectively to students' needs (Stallman, 2012). Counselling services are also not readily accessed by students, with utilisation rates ranging from two to four percent across different studies (Raunic & Xenos, 2008). This data suggests that there may be barriers to accessing counselling services or that they may not align with students' needs. Furthermore, counselling services are designed to treat mental health symptoms and enhance students' ability to cope with stress, as opposed to improving the aforementioned university experiences that might impair their mental health and wellbeing.

To address these university experiences, and thus enhance students' learning and wellbeing, there has been a call for universities to make changes to the curriculum to include formal teaching on wellbeing. Various setting-based interventions have been introduced to achieve this goal, and although these appear promising, there are

currently very few high quality efficacy studies (Fernandez et al., 2016). Theoretical models of wellbeing have also been developed in coinciding fields of research, including positive psychology which is the scientific study of wellbeing and the conditions under which humans function optimally (Seligman & Csikszentmihalyi, 2000). In these fields of research, wellbeing is considered to be more than the absence of psychopathology, and two key types have been identified: (1) the experience of positive subjective states, which is referred to as hedonic or subjective wellbeing, and (2) functioning effectively, which is referred to as eudemonic or psychological wellbeing (Ryan & Deci, 2001). On the basis of these definitions, the PERMA+ model (Seligman, 2011) outlines five key aspects of wellbeing, including positive emotions, engagement, relationships, meaning, and accomplishment, with physical health, sleep, nutrition, and optimism added more recently. Including constructs that are both shared and distinct from the PERMA+ model, the Model of Psychological Wellbeing (Ryff, 1989b) outlines six key aspects of eudemonic wellbeing, including self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. By defining the key aspects of wellbeing, these theoretical models enable it to be measured, targeted, and enhanced.

Accordingly, a branch of research within positive psychology called positive education has begun applying these theoretical models of wellbeing to educational settings, including universities, to enhance students' wellbeing and learning by teaching skills for both wellbeing and academic outcomes (Seligman et al., 2009). Specifically, several universities have integrated wellbeing theory or activities into existing courses of study (Magyar-Moe, 2011), while others offer semester-long positive psychology courses as optional units of study in their curriculum, dedicated to teaching the science

of wellbeing and providing opportunities for experiential learning (Young et al., 2022). The majority of these positive psychology courses include teaching on wellbeing theory, and the practice of positive psychology interventions, that is, empirically-validated activities that cultivate positive emotions, thoughts, and actions (Seligman et al., 2005). However, there is considerable variation in the structure, theoretical content, and the positive psychology interventions included in these courses.

This variation is perhaps not surprising as there are few quantitative or qualitative evaluations of these courses, leaving educators with an inadequate research base upon which to design them. Most investigations simply provide narrative descriptions of these courses from the educators' perspectives (Russo-Netzer & Ben-Shahar, 2011), neglecting the students' perspectives. As students are privy to otherwise inaccessible insights about courses (Busher, 2012), understanding their perspectives aids in designing courses tailored to their needs, which in turn, may increase their engagement with, and learning, in these courses. Consistent with this, engaging students in participatory action research to implement positive education into the secondary school curriculum was found to facilitate a better understanding of their wellbeing needs, and promoted their engagement and self-efficacy (Halliday et al., 2019). Surveying students on how universities can enhance their wellbeing has also previously yielded rich information about a diverse range of factors (Baik et al., 2019), and may foster a sense of empowerment and partnership (Busher, 2012). These are arguably important goals for positive psychology courses to pursue given autonomy and positive relationships are key aspects of wellbeing (Halliday et al., 2019). In spite of this, only one study has gone further than reporting the results of standard, university administered, course evaluations when reviewing positive psychology courses

(Shrivastava et al., 2022). Whilst insightful, this study largely focused on beliefs about positive psychology and the perceived impact of positive psychology interventions among final year psychology students. As such, there remains a need to conduct more comprehensive evaluations of students' perspectives on various aspects of these courses.

The current study aims to address this gap in the positive education literature. To our knowledge, this is the first Australian study to use a qualitative approach to provide an in-depth assessment of undergraduate students' experiences within a comprehensive positive psychology course designed to enhance student learning and wellbeing. This course offered broad coverage of wellbeing theories, research evidence, and practices. As such, its evaluation from a student perspective enables insights into many of the aspects featuring in positive psychology courses that can, in turn, be used to assist academics and educators to better understand and address students' wellbeing needs when designing positive psychology courses within university settings. It also provides an example of a simple method for exploring students' perspectives of such courses and involving them in their design and evaluation.

6.2 Materials and Methods

6.2.1 Participants

Nine undergraduate students (eight female) who completed a positive psychology course at an Australian university were recruited for this study in 2019. Participants were aged between 19 and 37 years ($M = 22.33$, $SD = 6.06$). All but two participants were born in Australia, with five identifying as Caucasian, two identifying as East Asian, and one each identifying as South Asian and Middle Eastern. One participant was married, while the remaining were single and never married. Secondary schooling was the highest level of education completed by seven participants, with the

remaining two participants having completed an undergraduate degree and a doctoral degree respectively. Seven participants were full-time, domestic students, with the remaining two participants enrolled as a part-time domestic student, and a full-time, international student, respectively. Six of these participants were in the first year of their undergraduate degrees, and the remaining three were in their third and fourth years. Finally, four participants were completing degrees related to health and medicine, three were completing degrees related to science, and two were completing degrees in the arts and social sciences.

6.2.2 *The Positive Psychology Course*

This introductory-level positive psychology course was offered at an Australian university for the first time in 2019, and has been available to students every year following as an optional unit of study with no prerequisite knowledge required. Accordingly, students undertaking any undergraduate degree at the university were eligible to enrol and complete the course, with between 200 to 300 participants choosing to do so every year between 2019 and 2023.

The course consisted of 12, two-hour lectures, delivered in-person by various lecturers. Specifically, the course convenor delivered the first and last lectures for the course, while 10 different lecturers, selected on the basis of their research expertise, delivered each of the core lectures. Since lecture attendance was not mandatory, every lecture was recorded using audio-visual technology and available online for students to review in their own time. Additionally, there were no mandatory tutorials.

The first lecture introduced key concepts and controversies in the wellbeing literature, and an overview of the PERMA+ Model (Seligman, 2011) and the Model of Psychological Wellbeing (Ryff, 1989b) as the theoretical underpinnings of the course.

Each lecture following this focused on a specific component of these models (i.e., positive emotions, engagement, positive relationships, meaning and purpose in life, accomplishment and mastery, self-acceptance, autonomy, personal growth, and physical health and health behaviours). An additional lecture focused on societal determinants of wellbeing, with a final lecture providing an integration of key concepts. In each lecture, students were also prescribed a scientific paper and a popular scientific paper to read or video to view, and were given a take-home positive psychology intervention designed to enhance the aspect of wellbeing addressed in the lecture. These included the three good things exercise, completing a gratitude letter or visit, a savouring exercise, performing random acts of kindness, identifying character strengths, using signature strengths in new ways, goal-setting, self-compassionate letter-writing, the best possible self-task, and engaging in physical activity (Bolier et al., 2013; White et al., 2019). As part of their assessments, students were required to complete each week's positive psychology intervention and provide a brief, guided written reflection of their experience. They were also required to complete an essay, in which they critically reviewed the literature on positive psychology interventions to develop their own individualised wellbeing plan, and pass an end-of-semester exam.

The study was advertised to students enrolled in this course at the end of the teaching period via an email which instructed interested students to contact the primary investigator directly, who was not involved in the delivery or assessment of the course. Interested students were also selected on the basis of their openness to experience given its correlation with the ability to reflect critically (Clifford et al., 2004), which was considered essential for achieving a comprehensive understanding of students' perspectives on the course. This was measured using the 12-item openness to experience

subscale of the NEO Five Factor Inventory (Costa & McCrae, 1992), and those who scored above 30 (55th percentile) on this measure were included as participants of the study, as this score represents the upper limit of the average range in normed data. No participants were omitted on this basis. The study received ethical approval from the Australian National University's human research ethics committee (Protocol number: 2019/177; see Appendix J for ethics documentation).

6.2.3 Procedure

Students interested in participating were asked to complete a survey hosted by Qualtrics Survey Software, which was used to assess the inclusion criteria. Eligible participants were invited to one of two focus groups with five and four participants respectively. Both focus groups were conducted after the end of the examination period for the semester, at separate times in a small teaching room. Participants were provided with information about the study and their written consent to participate was obtained. Participants then took part in a 90-minute focus group discussion about their experiences in the course, which was guided by various open-ended questions, including reasons for enrolling in the course, strengths and weaknesses of the course, impact on personal growth and development, understanding of the science and practice of wellbeing, and course satisfaction (see Appendix K for full list of questions). The questions used to guide them were not prescriptive or limiting to enable the discussions to be participant led. This discussion was audio-recorded for transcription and analysis, and participants received AUD15.00 for their participation.

6.2.4 Analysis

Interpretative Phenomenological Analysis (IPA) was used to analyse the data gathered from focus groups (Biggerstaff & Thompson, 2008; Smith, 1996). IPA was selected for use as it is epistemologically grounded in phenomenological, interpretivist, and hermeneutic philosophies (Cuthbertson et al., 2020). Similarly, the ontology of IPA closely reflects these philosophical underpinnings. As a result, it seeks to understand the subjective experiences of individuals and uses an inductive approach to do so. Broadly, analysis using IPA enabled the identification of emerging themes, as focus group transcripts were independently reviewed by the researchers to generate an initial list of themes and sub-themes, with any discrepancies between the generated themes and sub-themes resolved via discussion. Specifically, IPA analysis involved four iterative stages (Biggerstaff & Thompson, 2008). In the first stage, researchers closely read and re-read the transcripts to get to know the data, taking note of emerging thoughts, observations, and reflections without critical or theoretical judgement. Next, the transcripts were re-read with the intention of identifying themes which capture the general qualities of the data, as well as any connections or dissonance between themes. In this stage, psychological concepts and terms known to the researchers were considered. In the next stage, the identified themes were clustered into categories to specify the hierarchical relationships between them and to structure to the data. Lastly, evidence in the form of quotes which best capture the phenomena were identified for each theme. To maintain reflexivity while implementing IPA, the researchers engaged in regular supervision together to reflect on the potential influence of their own experiences as students and psychologists.

6.3 Results

Participants described both positive and negative aspects of the course, with three superordinate categories identified: interest in wellbeing, beneficial to wellbeing, and balancing competing needs. Within each, a number of subcategories were detected (i.e., four subcategories of interest in wellbeing, six subcategories of beneficial to wellbeing, and four subcategories of balancing competing needs).

6.3.1 *Interest in Wellbeing*

Participants described four relatively independent subcategories related to interest in wellbeing.

6.3.1.1 Reasons for an Interest in Wellbeing

Sixty-seven percent ($n = 6$) of participants perceived learning about the topic of wellbeing and the factors that contribute to improving wellbeing as enjoyable and interesting: “I really enjoyed the idea of studying psychology that focused on just happiness and flourishing, rather than all the other darker sides of psychology”. The topic of wellbeing was also perceived to be interesting due to its practical relevance compared to other courses: “It was very different from my biology or chemistry courses and it had a lot more real application for me, something that I could start using straight away” and “I was more engaged and less likely to zone out in the lectures... it was just a time to process and reflect, and that was important... because they’re not just throwing content at you. It’s relevant”.

6.3.1.2 Reason for Enrolment, Ongoing Attendance, and Course Satisfaction

An interest in wellbeing also contributed to enrolment and ongoing attendance for 67% ($n = 6$) of participants, and course satisfaction in all participants. For instance, this interest reportedly resulted in them being more engaged in the course compared to their other courses and helped them to remember content beyond the course: “I was enjoying [the lectures] so I came to them longer than I came to my other classes” and “the knowledge is still lingering and is still there compared to other courses”. The course also offered an appropriate and convenient opportunity for participants to satisfy their interest in wellbeing: “It was something... that I knew I needed to work on... so I thought this would be a good way” and “It’s something I wanted to do outside of university, so I found this course... a first-year psych course that I can pick up and it aligns with my other interests”.

6.3.1.3 Course Dissatisfaction

However, an interest in wellbeing also contributed to course dissatisfaction for 22% ($n = 2$) of participants. In one case the participant’s high level of interest in wellbeing exceeded the range of concepts and activities covered in the course: “It was so interesting, I wanted to know more”. That is, the participant was unsatisfied with the scope of the content, with greater depth or breadth sought. For another participant, course dissatisfaction stemmed from unrealistic expectations of the impact of the course: “I had a bit of a romanticised view of what would happen... how I would be after the course”. However, this participant also recognised the personal effort and intentional action required to experience benefits from the course: “I guess knowing all

this is different from applying it, so it's definitely something that I need to keep working on".

6.3.1.4 Disinterest in Wellbeing

Conversely, a disinterest in wellbeing amongst one's peers was reported by one participant (11%), who noted that the topic of wellbeing could be perceived as non-academic, and thus, result in disengagement from the subject matter: "When I told people I was doing a positive psychology course... they would say 'that's stupid'". The course did not completely assuage this concern for the participant, who stated that: "I'm still a little bit sceptical".

6.3.2 *Beneficial to Wellbeing*

Participants described six relatively independent subcategories within the theme of the course being beneficial for wellbeing.

6.3.2.1 Types of Benefits

All participants ($n = 9$) noted various benefits for wellbeing resulting from the course. These included gaining greater self-awareness (e.g., identifying their areas of strength and weakness) and using this knowledge to manage their wellbeing: "I learnt a lot about myself... where I struggle and where I could improve" and "The entire time I was learning not just for the [exam] but for myself as well". Participants also viewed this knowledge as useful for the future, and found themselves spontaneously remembering and applying it outside of the course: "The course...has given me really good little pushes in the right direction, and in the future, I'm sure that I will kind of go 'ping', that's something I learnt about" and "The things that I learnt I can apply... compared to other courses... after weeks or exams... I can't remember any content". This learning also

enabled participants to help others around them who may be struggling: “There were like little helpful takeaways... things I can help my friends with”.

6.3.2.2 Theory and Practice

The benefits for wellbeing appeared to stem from both the theoretical and applied components of the course. Regarding the theoretical components, participants found the course to be helpful due to the knowledge they gained about positive psychology and the different components of wellbeing: “Something that clarified in the course itself, that a good life doesn’t necessarily mean being happy. It’s about being able to learn from negative experiences and things like that” and “In my mind positive psychology was like relationships and self-compassion, and those were definitely really important ... but there were a lot of things that I didn’t realise were part of it as well” such as physical health and autonomy.

Regarding the course’s practical components, participants reported learning various helpful techniques for improving their wellbeing, and highlighted the importance of not only engaging in the weekly wellbeing activities but also completing the required self-reflection exercise accompanying each activity: “I found I was using them in my other courses to manage stress, and applying them, like just in my own daily life as well” and “Doing the activities was all obviously good... but I found that reflecting on them was one of the most helpful bits... I actually really thought about it... It was really important”.

6.3.2.3 Critical and Evidence-based Approach

Fifty-six percent ($n = 5$) of participants also perceived the course to be beneficial for wellbeing due to its critical and evidence-based approach to teaching: “I want to

make science-based or empirically-based changes in my life relating to wellbeing... and I think I got what I was hoping to learn from it". Though participants had access to information about wellbeing, they felt that its credibility was often unclear: "We've all been told these wellbeing things you can do to feel better... I really wanted to know what's legitimate". Accordingly, participants considered receiving information about the limitations of wellbeing research to be beneficial, as it cultivated trust, and thus increased the likelihood of their engagement: "Knowing about the limitations actually makes me trust somebody more... it made me more curious". Participants also noted that a critical approach assists them to manage their expectations of the course ("I feel like that makes it a little bit more realistic") and develop a comprehensive understanding of both what is known and, importantly, what remains unknown regarding the science of wellbeing ("The thing is... in some areas there isn't that much science... there isn't that much research, I think it would be nice if they said that").

6.3.2.4 Flexibility

Additionally, the flexibility offered by the course was noted by 22% ($n = 2$) of participants as beneficial for wellbeing. Specifically, the variety of different concepts and techniques included enabled them to tailor their learning to their specific interests and needs: "Getting such a good overview meant that you could go 'this works for me, I can kind of implement that' or 'this is such an interesting field, let me read into it more'".

6.3.2.5 Peer Support

The peer support offered by the course was also identified as beneficial for wellbeing by 22% ($n = 2$) of participants. The main form of peer support identified by these participants was the interactive discussion of the previous week's wellbeing

activity that took place at the beginning of each lecture: “It was really valuable to listen and hear what everybody else said”. However, 78% ($n = 7$) of participants were disinterested in augmenting the course with small class sessions, even if this provided an avenue for obtaining further peer support, most often due to concerns regarding the additional workload.

6.3.2.6 Supportive Tone

Similarly, the supportive tone of the course was reported as beneficial for wellbeing by 67% ($n = 6$) of participants. This tone was characterised by passionate and approachable lecturers who reportedly conveyed a genuine care for the learning and wellbeing of their students: “I appreciated that all of the lecturers had different fields that they were coming in and talking about, and that all of them seemed like they genuinely wanted to be there” and “I liked the environment... the lecturers were really engaging, very passionate... it definitely made it more interesting”.

6.3.3 *Balancing Competing Needs*

Participants described four relatively independent subcategories that highlight the need to be aware of balancing competing needs.

6.3.3.1 Accessible versus Complex Content

Mixed views were reported regarding the complexity of course content. The accessible nature of content was identified as a reason for enrolment in the course by 22% ($n = 2$) of participants: “I had not done any psychology ever, and it looked like something you could jump straight into it and that was the case”. Moreover, 33% ($n = 3$) of participants experienced the accessible content as helpful for their wellbeing. Specifically, the comprehensible content and non-demanding wellbeing activities were

easy to apply: “I can remember and apply it, and I hope I will continue to do it”. The accessibility of content also reduced the stress that can be triggered by highly demanding courses: “You could be fairly confident that if you just did [the weekly wellbeing activities], you were going to do quite well and that made me reflect more and stress less about it” and “It wasn’t like my other courses where it’s more technical and harder... it was kind of my course to unwind because I could just sit back and watch it”.

However, while most participants noted the positive impact of the accessible content, another 33% ($n = 3$) noted the potential negative impact on engagement of lectures that were not challenging and suggested that course content lacked depth: “I ended up watching [the lectures] at 1.5 or 2 times the speed, and found them actually more interesting that way because I felt it was a bit too slow otherwise”.

6.3.3.2 Depth versus Breadth

The balance between the depth and breadth of information covered by the course was another competing need identified by 44% ($n = 4$) of participants. Some participants wanted a greater depth of information, as this would have provided a more critical evaluation of the content delivered. While others recognised the benefits of having a broad overview of a range of different concepts and activities, as this enabled them to tailor the course to their own interests and needs: “I often left a lecture going this is awesome but I want to know what the limitations are and what they considered and what they didn’t consider in the studies”, while somewhat qualifying this by commenting, “If you wanted to know more you could do the reading, but if [the course] went too much more in depth, then we really wouldn’t have gotten to know as much as we did”.

6.3.3.3 Academic Learning versus Wellbeing

Balancing a focus on academic versus wellbeing goals was identified by 78% ($n = 7$) of participants as another competing need. Participants perceived there to be a tension between components of the course that were focused on academic objectives (e.g., assessing understanding of theories and research studies), and components that were practically focused on improving wellbeing (e.g., engaging in wellbeing enhancing activities and designing an individualised wellbeing plan). Some participants appreciated a wellbeing over an academic focus: “I was like loving the course and then it got to the exam... you can get tested on anything which was a lot of different stuff”. As previously mentioned, it was noted that making the course more academic or technical may contribute to a rise in students’ stress levels, and thus, be detrimental to their wellbeing. In contrast, others sought a more academic focus: “There’s just not enough time to kind of talk about the science behind [wellbeing]”.

6.3.3.4 Specialist Input versus Course Coherence

The final competing need identified by 44% ($n = 4$) of participants was the balance between providing students with specialist input while maintaining a sense of course coherence. The diversity of lecturers was noted as a positive for maintaining interest (e.g., it was “really nice that it changes up every week”) and for ensuring expertise in the topic (e.g., “having different lecturers, like guest lecturers relevant to the field that they’re talking about... that’s really good”). Despite the high level of specialisation afforded by this diversity, a sense of coherence across the course as a whole was attributed to the course convener being present at each lecture, and providing integration across the different lectures by delivering an introductory and concluding lecture.

6.4 Discussion

This study was the first to explore students' perspectives on a positive psychology course designed to enhance student learning and wellbeing by offering a comprehensive coverage of wellbeing theories, research, and practices. As such, it provides an example of a simple method for exploring students' perspectives of such courses and involving them in their design and evaluation. By exploring students' perspectives, the study also provides academics and educators with an insight into students' perceptions of this course, with the emerging themes of relevance for designing wellbeing courses more broadly.

The first superordinate category identified was an interest in wellbeing. Participants reported an interest in the topic of wellbeing, which was attributed to the concept itself and its relevance to their daily lives. Given that positive psychology courses have been developed in part to address the high levels of psychological distress among university student populations, it is important that participants endorsed the course as a convenient and appropriate opportunity to focus on their wellbeing. Similarly, a qualitative investigation of medical students' experiences within a wellness course found that wellbeing issues were important to them and participating in the course enabled them to engage in wellbeing activities without feeling guilty (Lee & Graham, 2001). Research conducted with primary and high school students also suggests that they are interested in learning about wellbeing, particularly when this is integrated into the curriculum following student input (Halliday et al., 2019). Together, such data suggest that there is interest in learning about wellbeing among student populations, and that a positive psychology course may be an especially acceptable vehicle for delivering this information to university students, given that it is not an

additional undertaking but integrated within existing course requirements. As the real-world relevance and convenience of the course made it a particularly appealing choice for the participants of this study, this is an important consideration for the design and delivery of such courses and university wellbeing initiatives more broadly.

The fact that not all participants reported an interest in wellbeing courses highlights the need to address potential barriers in students accessing this avenue of support for their wellbeing. Specifically, one participant reported a disinterest in positive psychology amongst their peers, stemming primarily from the perception that it is non-academic. In response, other participants attributed this disinterest to a perceived lack of critical discussion of wellbeing research within positive psychology research. As with the current research, initial feelings of apprehension and scepticism towards a 20 hour positive psychology workshop have been observed amongst students undertaking postgraduate training in clinical psychology (Guse, 2010). Despite these initial reactions from some students, others reflected that this workshop validated their world-view and interest in supporting humans to thrive. Furthermore, all students subsequently reported that the workshop was impactful personally and professionally, underscoring the need to address negative perceptions of positive psychology courses so that students are able to reap these benefits. According to the participants of the present study, ensuring the content included in courses is critical and grounded in evidence may address at least one factor contributing to disinterest in wellbeing courses among students.

Interestingly, the current study found that participants' generally high levels of interest in wellbeing generated both course satisfaction *and* dissatisfaction. The course satisfaction observed may be at least partially explained by Self-Determination Theory

(SDT; Ryan & Deci, 2000), as it suggests that students may be more engaged, and thus, more satisfied with their learning when feelings of competence, autonomy, and relatedness are enhanced. Accordingly, Filak and Sheldon (2003) found that undergraduate psychology students' self-rated feelings of competence, autonomy, and relatedness predicted their teacher and course satisfaction scores. In the present study, it is proposed that by targeting the constructs of mastery/accomplishment, autonomy, and positive relationships, the course was able to at least partly address these psychological needs. Conversely, the small number of participants that expressed course dissatisfaction attributed this to limitations in the depth of course content and its impact on their personal development relative to their highly positive expectations of what the course would deliver. Hence, messaging regarding positive psychology courses would benefit from communicating not only their benefits but also the limits of what they can provide. Specifically, educators should communicate that a semester-long positive psychology course cannot be all-inclusive, and position the content covered in their specific course as a small part of an extensive literature. It should also be made explicit that while positive psychology courses provide psychoeducation and practical strategies for enhancing wellbeing, it is ultimately the individual's continued participation and engagement with this content which contributes to longer-term gains.

The second superordinate category that emerged from the data pertained to the benefits of the positive psychology course for students' wellbeing. The course was perceived to be beneficial for the wellbeing of both self and others, and these benefits were experienced immediately and expected to continue into the future. Previous evaluations of positive psychology courses support these findings, as students experienced a significant increase in their wellbeing between the start and end of a

positive psychology course in the United Arab Emirates (Lambert et al., 2018). Similarly, students who completed an Australian positive psychology course maintained their level of wellbeing across the semester, compared to students in a control course who experienced a significant decrease in their wellbeing (Young et al., 2022). Student evaluations of courses that have integrated positive psychology into their syllabus also appear overwhelmingly positive, with students commonly noting the helpfulness and relevance of course content to their daily lives (Kurtz, 2011).

The findings of the current study add to this preliminary evidence, while also providing insight into the factors contributing to enhanced wellbeing. First, participants indicated that it is important for positive psychology courses to include both theoretical and applied components, as both the knowledge and skills gained were perceived to contribute positively to students' wellbeing and their ability to support others.

Second, participants noted that the course's critical and evidence-based approach to teaching was beneficial to their wellbeing, as this reportedly addressed common criticisms and limitations of the field, and thus enhanced participants' understanding of the state of the science, and engagement in and satisfaction with the course. These student comments are consistent with the principles of positive education, which state that the research evidence must be a central feature of wellbeing courses (Seligman et al., 2009), as well as conceptualisations of effective teaching, which recommend stimulating students' ability to think critically for engagement and learning (Devlin & Samarawickrema, 2010).

Third, participants identified the course's flexibility as beneficial for their wellbeing, as the variety of topics and techniques covered enabled them to tailor their learning to meet their individual needs. This is supported by the findings of a qualitative

exploration of students' experiences in higher education, which found that students considered flexibility in their learning environment important for their wellbeing, as it minimised stress, and thus enabled them to focus on learning in meaningful ways (Stanton et al., 2016).

The fourth aspect of the course identified as beneficial for wellbeing pertained to the relational aspects of the course, including opportunities for peer support and the generally supportive, invested tone set by the course's educators. Other qualitative studies have similarly indicated that social connection and a sense of belonging to the student community are important for students' wellbeing (Laidlaw et al., 2016; Stanton et al., 2016), which supports the aforementioned emphasis on relatedness as an essential psychological condition for wellbeing in SDT (Ryan & Deci, 2000). Student wellbeing has also been linked to their perceptions of teachers' interpersonal behaviours, as students with higher wellbeing scores perceived their teachers to be leading, helpful, and friendly, compared to those with lower wellbeing scores, who perceived their teachers to be strict or admonishing (Van Petegem et al., 2007). Together, these findings highlight the importance of cultivating supportive peer and teacher relationships. According to the participants of the current study, this was achieved in their positive psychology course via the use of class discussions which encouraged peer interaction, and lecturers who conveyed genuine enthusiasm for teaching and student learning.

The final contributor to the benefits of the course for wellbeing was the perceived accessibility of its content, which helped to allay students' level of study stress. This sub-theme of accessibility emerged in the third and final superordinate category, namely, the importance of balancing competing needs when designing positive psychology courses. These competing needs pertained to the accessible versus complex nature of

course content, depth versus breadth of this content, academic versus wellbeing focus of the course, and the specialist input within versus coherence across the different lectures. This is the first study to document students' perspectives on potentially competing needs within a positive psychology course, and to indicate that they may impact student engagement and satisfaction within these courses.

Mixed views regarding the complexity of the course's content were observed. As noted, some participants reported that the accessibility of the course content was helpful for their wellbeing as it reduced the stress associated with workload. A recent study suggests that the association between course demands and both stress and wellbeing may, however, be slightly more nuanced, finding that both work overload and assessment-related stress contributed significantly to students' level of stress, but only assessment-related stress contributed to students' level of wellbeing (Larcombe et al., 2021). Conversely, other participants in the present study reported that the accessibility of the content reduced their engagement in the course, which is supported by qualitative data indicating students prefer courses that are challenging due to their desire to learn and dislike of feeling bored (Martin et al., 2008). Not meeting a student's need for accessible yet stimulating content is likely to not only impact course engagement but also their wellbeing. As proposed by Dodge et al. (2012) wellbeing is the:

Balance point between an individual's resource pool and the challenges faced...
When individuals have more challenges than resources, the see-saw dips, along
with their wellbeing... [Conversely] a lack of challenge will lead to stagnation,
which will also affect the balance of the see-saw (p. 230).

Another tension that participants noted in the current study was the importance of balancing a focus on achieving academic objectives with wellbeing objectives. The

popularity of positive psychology courses has been attributed to their dual focus on the science and practice of wellbeing (Russo-Netzer & Ben-Shahar, 2011), although the present data highlights that these two objectives can operate either synergistically (e.g., when an evidence-based approach enhances engagement in the wellbeing strategies), or in a manner in which they compromise one another (e.g., greater intellectual demands resulting in increased stress).

The final two potentially conflicting needs pertained to balancing the depth and breadth of content, and maintaining course coherence in the context of specialist lecturers. Supporting the importance of attending to these themes, educational experiences characterised by depth or breadth have been correlated with common yet also distinct student learning outcomes (Coker et al., 2017), and the negative impact of structurally and conceptually disjointed courses on students' learning has been observed within specific areas of education (Hammerness, 2006). Research is needed to build on the limited studies that have investigated the efficacy of methods for balancing these competing needs to enhance students' engagement and learning.

6.4.1 Limitations and Future Directions

While in accordance with IPA guidelines, the sample size of this study was small and drawn from only one Australian positive psychology course, which may limit the generalisability of the results. Hence, research exploring students' perspectives of other positive psychology courses is warranted. In particular, students' perspectives on positive psychology courses offered at non-Western universities may provide insight into their generalisability. One such study from the United Arab Emirates found the beneficial impact of a positive psychology course on relationships and interpersonal effectiveness emerged as an important theme (Shrivastava et al., 2022). This highlights

an important point of divergence from the themes observed in the current study, which predominantly relate to the scientific study of positive psychology and wellbeing, and the benefits of the course on the individual. Understanding differences in emerging themes between Western and non-Western universities may provide ideas for designing more inclusive and culturally sensitive positive psychology courses.

Relatedly, participants were also predominantly enrolled in arts, science, and health degrees. As such, future research would benefit from exploring perceptions of positive psychology courses among students from broader and more diverse academic disciplines for replicability. The results of the current study may also be biased by the over-representation of female participants, as being female has been identified as a predictor of psychological distress in university student populations (Stallman, 2010), and there may be gender differences in the factors that both enhance and impair students' wellbeing (Løhre et al., 2014).

Furthermore, this qualitative study was exploratory in nature, and thus, its preliminary findings require further empirical validation. For instance, very few studies have investigated positive psychology courses to determine their efficacy for enhancing students' wellbeing and course satisfaction. It also remains unknown whether the aspects of the course identified as beneficial for wellbeing in this study (i.e., integration of wellbeing theories and practices, critical and evidence-based approach, flexibility in learning, opportunities for peer support, supportive environment, and accessible and non-demanding workload) demonstrate empirical efficacy. Future research is needed to identify the critical components of positive psychology courses.

Relatedly, future research is needed to establish a best practice guide to support educators to design and deliver these courses. As this study evaluated a comprehensive

positive psychology course, our results offer insights into the aspects of course content and delivery that may be important from the students' perspective. Furthermore, in developing this comprehensive positive psychology course, we considered it important to introduce wellbeing theory at the outset of the course and use this theory to structure course content. In line with this recommendation, a case study of the popular positive psychology course offered at Harvard identified the integration of theory and practice as a key objective (Russo-Netzer & Ben-Shahar, 2011). Additionally, we ensured lecture content was well aligned with the wellbeing enhancing activities prescribed, and we included reflective writing activities, along with setting applied assessment tasks, to encourage students to use these activities. Similarly, the importance of including opportunities for experiential learning has also been highlighted by leading researchers in the field (Biswas-Diener & Patterson, 2011). Finally, we offered flexibility around course participation with online access to lectures and course materials, as well as opportunities for social connection and support with peers and educators. However, it is unlikely that a uniform approach is best (Oades et al., 2011), reinforcing the need for qualitative evaluation to inform adaptation of course design and delivery to specific student populations or the context of each individual university.

6.4.2 Conclusion

There remains a general lack of information about how to design, conduct, and evaluate undergraduate positive psychology courses which aim to enhance students' wellbeing. The current study is one of the first to address this gap in the literature by providing a detailed account of students' perspectives on one of the increasing number of positive psychology courses offered at different universities around the world. It also provides an example of a simple method for exploring students' perspectives of such

courses and involving them in their design and evaluation. It is clear, from students' perspectives, that there is an appetite for learning about wellbeing, particularly when this is integrated within the university curriculum in the form of a positive psychology course that is both accessible and balanced in its approach. Moreover, the course was perceived to be beneficial to students' wellbeing, with its inclusion of theory and practical skills for enhancing wellbeing, critical and evidence-based approach to teaching the subject matter, flexible, accessible and non-demanding workload, and provision of peer and academic support identified as contributing factors. Tailoring positive psychology courses according to these student-centred recommendations may enhance their wellbeing and course satisfaction, and thus, should be considered by academics and educators when designing and delivering courses in the future.

Chapter 7 General Discussion

The current program of research sought to answer four broad research questions:

1. Which students are most in need of wellbeing support in higher education?
2. Is a comprehensive positive psychology course, as one approach for supporting students' wellbeing, effective both upon course completion and in the longer-term?
3. Which students benefit the most (or least) from a comprehensive positive psychology course?
4. What are students' perspectives on the strengths and weaknesses of using a comprehensive positive psychology course to support their wellbeing?

In this final chapter, the main findings of the current program of research will be discussed in the context of these research questions, highlighting the small yet beneficial impact of a comprehensive positive psychology course on students' mental health and wellbeing. In light of these findings, practical implications for the use of such courses in higher education and implications for future research will be considered. Finally, these implications will be positioned within the context of the research program's limitations, and future directions will be proposed for establishing a stronger evidence base for the efficacy of positive psychology courses as an approach for supporting students' mental health and wellbeing in higher education.

7.1 Overview of the Main Findings

7.1.1 Study 1: Evaluating the Impact of an Undergraduate Positive Psychology Course on Student's Wellbeing and Psychological Distress

The first study of this program of research aimed to contribute to the limited empirical literature concerning predictors of students' mental health and wellbeing over time, and the impact of positive psychology courses on the mental health and wellbeing

of students in higher education. Accordingly, this study provides an answer to the first three research questions stated above. Specifically, this study sought to provide insight into (1) the students who may be most in need of wellbeing support; (2) the impact of a comprehensive positive psychology course for supporting students' wellbeing; and (3) the students that may benefit the most (or least) from the course.

The first research question, *who may be most in need of wellbeing support*, was assessed in terms of demographic factors and social identification with the university as predictors of wellbeing and psychological distress over time. Using a longitudinal research design, it was found that students who expressed lower levels of social identification with the university were more vulnerable to experiencing higher psychological distress and depression between the beginning and end of the semester, relative to those reporting higher social identification. Furthermore, the current research found that higher social identification predicted higher scores across all aspects of wellbeing (except autonomy) and lower anxiety and stress, irrespective of time. These novel findings extend existing cross-sectional research that reported an association between lower levels of social identification and lower levels of depression (Postmes et al., 2019). The present study's longitudinal design also demonstrated the protective effect of social identification on both depression and generalised psychological distress between the start and end of an academic semester. Together, these findings suggest that another potentially effective and complementary approach to supporting students' mental health may be via social-identity-enhancing interventions, such as university recreational groups (Cruwys et al., 2013; Steffens et al., 2021) and the manualised Groups 4 Health (G4H) program (Haslam et al., 2016), which broadly aim to develop a shared sense of commonality between students and to enhance their social networks. In

addition, students who were younger in age or identified as female also appeared to experience less desirable outcomes consistently over time (i.e., at the beginning and end of the semester, and at the six-month follow-up). Specifically, younger students experienced lower autonomy, and higher psychological distress and stress, relative to older students, while female students experienced lower personal growth and purpose in life, and higher anxiety, relative to male students. Overall, these findings provide insight into the specific aspects of wellbeing and psychological distress for which the previously identified vulnerable groups of students may require focused intervention and support (Auerbach et al., 2018; Eisenberg et al., 2007; Said et al., 2013).

In addressing research question two, *the impact of a comprehensive positive psychology course on students' mental health*, it was found that the positive psychology course had a beneficial impact on a number of measured outcomes relative to standard courses. The course protected students from an increase in psychological distress and depression, and a decrease in psychological wellbeing and environmental mastery, while enhancing autonomy, at the end of the academic semester. The course also contributed to a longer-term increase in environmental mastery and overall psychological wellbeing in the six months following course completion. These findings provide a novel contribution to the research concerning the efficacy of positive psychology courses. They demonstrate that such courses may protect students during periods of heightened vulnerability related to the challenging academic context, *and* importantly, lead to short-term gains in autonomy and more lasting change in the trajectory of students' competence and confidence in their ability to manage their lives, and thus, their overall psychological wellbeing. Accordingly, in the context of existing research (Hobbs et al., 2022; Hood et al., 2021; Lambert et al., 2018; Yaden et al., 2021; Young et al., 2022), the

findings from this study provide a relatively more nuanced understanding of the short- and longer-term impact of comprehensive positive psychology courses on aspects of both wellbeing and psychological distress.

In terms of research question three, *who may benefit the most from the positive psychology course*, only one notable moderator variable was identified, namely, social identification with the university. Relative to standard courses, the beneficial impact of the positive psychology course on environmental mastery was greater for students who expressed higher social identification, specifically at the end of the semester relative to other periods of measurement. In contrast, students from standard courses with higher social identification experienced greater positive relations with others relative to positive psychology students at the end of the semester compared to other periods. This finding revealed a potential area for improvement in the positive psychology courses in terms of creating greater opportunity for positive peer-to-peer and student-teacher interactions. As only one study to date has explored potential moderators of the impact of positive psychology courses (Young et al., 2022), these findings contribute to this limited literature, and highlight this as an important ongoing direction for researchers in the field. These novel findings, more specifically, provide further support for the use of social-identity-enhancing interventions, either independent to or in combination with positive psychology approaches to supporting students' mental health. However, these implications may be specific to this course, university setting, and student sample.

7.1.2 Study 2: Eliciting Students' Perspectives of a Positive Psychology Course to Inform its Design: A Qualitative Study

The second study of this program of research aimed to build upon the first study by investigating students' experiences within the same comprehensive positive

psychology course using a qualitative research approach. Accordingly, this study addressed the fourth and final research question, that is, *what are students' perspectives on the strengths and weaknesses of using a comprehensive positive psychology course to support their wellbeing?* Qualitative analysis revealed three superordinate themes: an interest in wellbeing, beneficial to wellbeing, and balancing competing needs. Within each of these broad themes, a number of subcategories were identified.

The first superordinate theme indicated an array of reasons as to why students were interested in learning about wellbeing. The findings suggested that students were generally satisfied with the course, although disinterest in the course and associated dissatisfaction was also expressed by a small minority of students. Accordingly, this theme indicated that there is student appetite for learning about wellbeing as part of the tertiary curriculum, and that a positive psychology course may be an especially acceptable approach to supporting students' mental health during university. It further highlighted the need to address potential barriers to undertaking or engaging in a positive psychology course, such as negative perceptions of these courses, and providing more accurate messaging about their potential benefits *and* limitations.

The second superordinate theme indicated that students perceived six beneficial aspects of the positive psychology course including: its benefits to self and others, inclusion of theory and practice, critical and evidence-based approach, flexibility with regard to application to self, peer support, and supportive tone. Findings within this theme thus provided subjective evidence which may enhance our understanding of the small but beneficial impact quantified in Study 1, as well as insights into the most important aspects of the course.

The third superordinate theme demonstrated students' awareness of competing needs within the course, including the tension between course accessibility versus complexity, the depth versus breadth of content, and the amount of specialist input provided versus the course's cohesiveness. Together, the emerging themes from this novel study provide a critical insight into students' perspectives on both the negative and positive aspects of a comprehensive positive psychology course, which may be of relevance for designing and evaluating similar courses more broadly. The combined findings from the first and second studies demonstrate the utility of using mixed research methods to evaluate the impact of mental health interventions in higher education.

7.2 Implications of Current Findings for Practice in Higher Education

Several implications for practice in higher education result from the main findings of the current research program. In this chapter, three broad implications drawn from the quantitative and qualitative evaluations of the comprehensive positive psychology course will be discussed. Firstly, the potential utility of comprehensive positive psychology courses as a population-based approach to supporting students' mental health within universities will be considered. Secondly, the essential aspects of these courses will be proposed. Lastly, the importance of collaboration will be discussed both in terms of the use of positive psychology courses as a complementary intervention to established approaches to reducing pathology, as well as the need for greater interdisciplinary approaches in wellbeing research.

7.2.1 Positive Psychology Courses: An Academic Strategy to Support Student Mental Health

This program of research yielded both quantitative and qualitative evidence for the efficacy of comprehensive positive psychology courses as an academic or curriculum-based approach for supporting students' mental health and wellbeing in higher education. The quantitative evidence indicated that such courses may shield students from detrimental changes in mental health outcomes such as, an increase in psychological distress and depression or a decrease in psychological wellbeing and environmental mastery, over time. These findings gain importance in the context of existing research indicating distinct periods of heightened vulnerability throughout an undergraduate degree, along with sustained reductions in mental health observed at the end of studies (Andrews & Wilding, 2004; Bewick et al., 2010; Cooke et al., 2006; Sharp & Theiler, 2018). In light of this research, completing a comprehensive positive psychology course at the beginning of higher education may not only help students maintain mental health and wellbeing levels comparable to those before university but also provide additional protection during specific periods of heightened vulnerability.

In further support of this claim, quantitative evidence indicated enhanced autonomy in the short term, and enhanced environmental mastery and overall psychological wellbeing in the longer-term. This observation has notable implications for the use of comprehensive positive psychology courses in higher education. It demonstrates that a comprehensive positive psychology course may have the potential to enhance students' self-determination and efficacy regarding the task of managing their wellbeing during their academic education, despite exposure to potential university and course-related stressors and the experience of anxiety and stress. Thus, a

comprehensive positive psychology course may be a powerful mental health strategy or tool for educators and policymakers to use within universities as it not only buffers against an increase in mental ill-health overtime, but enhances autonomy in the short term, and mastery and psychological wellbeing in the longer-term. This has potential broader implications for students' academic performance at university, and productivity in their future careers, as well as the lifelong trajectory of their mental health and wellbeing. These positive outcomes may also reflect well on the university's public profile which will assist in attracting more individuals to study and work within it, better retaining these individuals, nurturing connections with the wider research and local community, and generating more revenue.

Qualitative data from the present program of research provided a complementary approach for supporting the implementation of comprehensive positive psychology courses by demonstrating that they are also positively received by the student population. Despite some disinterest and dissatisfaction with the course, which may be addressed by more clearly communicating the limits of what such courses can provide, students identified a range of benefits stemming from the course for their wellbeing and their ability to support others. Students' perspectives on this positive psychology course also broadly indicated that the course may be a more acceptable vehicle for accessing mental health support by enabling students to focus on managing their wellbeing in a manner that does not impede upon study, work, and recreation. The literature more broadly speaks to the potential for positive psychology courses to normalise conversations about mental health, and thus reduce the stigma associated with seeking mental health support, as this approach targets all students rather than singling out those struggling with their mental health (Greenberg & Abenavoli, 2017).

Together, the quantitative and qualitative evidence gathered in the present program of research indicates that comprehensive positive psychology courses may be a cost-effective, population-level academic strategy for supporting the mental health of students in higher education. Despite these findings, positive psychology courses have rarely been considered within university policies as an academic or curriculum-based strategy for supporting students' mental health, perhaps due to the limited evidence base to date concerning their impact on student outcomes. Instead, academic or curriculum-based strategies predominantly consist of mandatory general health courses designed to reduce stress and support healthy coping (Becker et al., 2008; Bergen-Cico et al., 2013; Bughi et al., 2006; Foster et al., 2013; Hassed et al., 2009; Shek, 2012), changes to grading systems and assessment methods (Reed et al., 2011), and structural changes to the curriculum that promote academic success or student engagement and retention (Bantjes et al., 2022; Jones & Johnston, 2006). However, mandatory courses may be counterintuitive to promoting autonomy among students and focus predominantly on enhancing physical health and reducing mental illness. On the other hand, the latter strategies do not address non-academic stressors and may be more difficult to implement. Positive psychology courses are advantageous as they are embedded within the curriculum, and thus contribute to the completion of study, while also targeting non-academic (i.e., emotional and psychosocial) stressors. Further methodologically rigorous evaluations of positive psychology courses are recommended, particularly extending the focus to impacts on academic outcomes, which may add further weight to the argument for their inclusion in university mental health and wellbeing policies and practices.

Using relatively more rigorous methodological and statistical approaches outlined in the recently established best practice guidelines for research design in positive psychology (Van Zyl et al., 2019), the findings of the present research program revealed small but positive changes in mental health outcomes resulting from a comprehensive positive psychology course. It is proposed that these small changes in the mental health and wellbeing of individuals might accumulate and produce larger and more meaningful change in the average of population-level outcomes. This idea has been readily demonstrated in the preventative health literature, since healthy individuals are the targets of intervention and, as such, are not expected to demonstrate gains as large as disordered or clinical samples (Mendelson & Eaton, 2018; Rose et al., 2008). In line with this, and as articulated by other positive psychology researchers (Maybury, 2013), the present findings further indicated that the impact of these courses may extend beyond the individual undertaking the course, with the qualitative data suggesting that course participants used the knowledge and skills acquired to support family and friends. On the basis of such findings, and in recognition of the need for novel, large-scale interventions that move away from one-on-one interventions (Bantjes et al., 2022; Greenberg & Abenavoli, 2017), comprehensive positive psychology courses may be a beneficial, acceptable, scalable, and cost-effective strategy for supporting students' mental health within universities.

7.2.2 Essential Components of Positive Psychology Courses

Many researchers have articulated the need for further research to identify the essential components of positive psychology courses (Goodmon et al., 2016; Hobbs et al., 2022; Young et al., 2022). Several suggestions in relation to these components emerge from the current research program, given favourable quantitative and

qualitative evaluations of the positive psychology course. Key characteristics of this comprehensive positive psychology course included: (1) its thorough grounding in wellbeing theory to structure and inform course content; (2) the close alignment of lecture content and the prescribed wellbeing-enhancing activities; and (3) the use of reflective writing activities to deepen and personalise learning. Similar ideas about the design and delivery of positive psychology courses have been articulated by others (Biswas-Diener, 2011; Oades et al., 2011; Russo-Netzer & Ben-Shahar, 2011). Reflective writing activities, in particular, may be a strength of this positive psychology course as they have several benefits including the development of skills (Artioli et al., 2021), empathy (Artioli et al., 2021; Chen & Forbes, 2014), critical thinking and meta-cognition (Allan & Driscoll, 2014), self-awareness (Taylor, 2020), and interpersonal effectivity and a sense of belonging (MacAskill et al., 2023). Despite this, positive psychology courses rarely include reflective activities (Linton et al., 2021). Furthermore, studies investigating the efficacy of positive psychology courses often do not specify their theoretical foundations and the rationale for the chosen wellbeing practices.

Nevertheless, such recommendations remain preliminary and require empirical validation. For example, additive or dismantling study designs have been used to identify the most effective or impactful components of various psychotherapies by decomposing the impact of each component of these therapies (Bell et al., 2013; Doss, 2004). In additive study designs, each component of the selected therapy is added sequentially into treatment to isolate whether it enhances outcomes. In contrast, in dismantling studies, components of the selected therapy are removed and this is compared to a condition with all components (Bell et al., 2013). Similar research designs may be adopted to identify the critical components of positive psychology courses.

Furthermore, the exploration of students' perspectives provided further insights into the aspects of positive psychology courses that were perceived to be most beneficial to wellbeing. This is an important contribution to the field, as several researchers have raised the issue of heterogeneity between courses resulting from a lack of understanding of the critical components of positive psychology courses (Hobbs et al., 2022). On the basis of this qualitative data, eight recommendations for educators can be distilled to inform the design and delivery of similar positive psychology courses in future. First, it appears essential to include both theoretical and applied components within these courses, as both the knowledge and skills gained were perceived to contribute positively to students' wellbeing and their ability to support others. Second, a critical and evidence-based approach in teaching is important, as this enhanced participants' understanding of the science of wellbeing, and their engagement in, and satisfaction with, the course. Third, it appears important to allow flexibility in the course by including a variety of topics and techniques to enable students to tailor their learning to their individual needs. Fourth, it is desirable to include relational aspects within the course, such as opportunities for discussion, and support from peers and teachers. Fifth, it is important to create a course that is both accessible (to reduce stress) *and* stimulating (to encourage engagement and growth). Sixth, students noted potential barriers to engagement, such as negative perceptions of positive psychology courses, which should be addressed, along with providing messaging about positive psychology courses that includes both its potential benefits *and* limitations, to better manage students' expectations. Finally, various competing needs within the course were identified by students, which are important considerations for course design. However, it is unlikely that a uniform approach is best (Oades et al., 2011), which reinforces the need for

qualitative evaluations to inform the adaptation of course design and delivery to specific student populations and the context of each university.

7.2.3 A Collaborative Approach to Student Mental Health in Higher Education

The main findings of this research program have implications for using a collaborative approach to supporting students' mental health in higher education. This implication is drawn from the observed beneficial impact of the comprehensive positive psychology course on both mental illness (e.g., psychological distress, depression) and mental health (e.g., psychological wellbeing, autonomy, mastery) outcomes. Although previous studies have also explored both outcomes (Goodmon et al., 2016), larger and methodologically more sound studies have focused on measuring the impact of positive psychology courses only on wellbeing outcomes (Hood et al., 2021; Lambert et al., 2018; Yaden et al., 2021; Young et al., 2022). Accordingly, the main findings of the present research contribute to evidence indicating that positive psychology courses may be beneficial for supporting a complete state of mental health (i.e., both mental health and illness), and indicate the need for more collaboration between researchers focused on pathology versus wellbeing to create potentially more effective and holistic approaches to supporting students' mental health.

This is not a novel idea, as contemporary theories of mental health now recognise that mental illness and mental health are related but distinct phenomena, and research has established empirical evidence for this dual-continua model (Tudor, 1996). Nonetheless, few mental health interventions in higher education have aimed to address or measure their impacts on both sets of outcomes. Wellbeing therapy (Fava, 1999) provides an example of interdisciplinary collaboration, as it combines cognitive behaviour therapy with strategies to enhance the six key aspects of wellbeing identified

by Ryff (1989a), and has demonstrated promising results for student populations (Przybylko et al., 2022; Ruini & Fava, 2012). The lack of interdisciplinary collaboration has been further recognised by the Okanagan Charter (International Conference on Health Promoting Universities and Colleges, 2015), which argues that policies and practices need to go beyond addressing pathology, and provides recommendations for the holistic promotion of health at various levels of universities. A recent publication has further demonstrated the utility of interdisciplinary collaboration, with scholars from psychology, psychiatry, epidemiology, medicine, and the health sciences convening to review the current literature, and to develop an insightful research agenda for enhancing psychological wellbeing at the population level (Kubzansky et al., 2023).

Relatedly, wellbeing research and positive psychology as a scientific field of enquiry have faced criticism for insufficient interdisciplinary collaboration (Hernández-Torrano et al., 2020; van Zyl et al., 2023), with calls for this to be the next frontier in research (Wissing, 2022). Positive psychology courses may provide an ideal vehicle for such interdisciplinary collaboration, and therefore, may in part address this criticism. For example, the concept of wellbeing may be understood from various academic perspectives, and thus, a positive psychology course, in which educators with diverse academic disciplines are invited to teach, may provide a more integrated approach to understanding the science and practice of wellbeing (Rieger et al., 2023). Specifically, future developments of positive psychology courses could consider including teaching from experts in the health, social, and environmental sciences to address physical, societal, and environmental aspects of wellbeing, respectively (Rieger et al., 2023). More importantly, instruction could consider addressing the interconnections across these aspects. To take just one example, an integrated approach to teaching on the

psychological construct of compassion may discuss its biological underpinnings, and its potential application to enhance societal and environmental wellbeing, which range from the development of moral and ethical business practices to compassion training programs in educational settings, and compassion movements in politics (Gilbert, 2023).

Further supporting the need for collaborative efforts was the finding in the present research that higher social identification with the university appeared to enhance the beneficial impact of the course. As such, greater collaboration between positive and social psychology researchers may enable the development of more effective wellbeing courses that incorporate social-identity-enhancing interventions. Interventions associated with benefits to mental health broadly aim to enhance a person's social group memberships and the compatibility between these social groups (Iyer et al., 2008). They also aim to support individuals to maintain group memberships overtime, and form new group memberships in the absence of desirable existing identities (Iyer et al., 2008). In line with this, the Groups 4 Health (G4H) program (Haslam et al., 2016) is a noteworthy manualised intervention for optimising health in educational settings as it aims to equip people with the knowledge and skills necessary to be effective in managing social group memberships and associated social identities. Specifically, the program consists of five modules which collectively: (1) provide psychoeducation on the benefits of social groups on health (i.e., schooling); (2) map a person's social and group-based resources (i.e., scoping); (3) identify and enhance social identities (i.e., sourcing); (4) form new social connections (i.e., scaffolding); and (5) problem solve difficulties with implementing the above changes (i.e., sustaining).

7.3 Theoretical Implications of the Current Findings for Research

In addition to these practical implications, the main findings of the current research program have two broad theoretical implications for research into students' wellbeing in higher education. Firstly, the results bring to attention the lack of consensus in the definition, operationalisation, and measurement of wellbeing (Dodge et al., 2012). As reviewed in the opening chapters of this thesis, there are numerous schools of thought on wellbeing, and just as many (if not more) criteria for, and measures of, wellbeing. This has made it challenging for researchers to translate these theoretical perspectives into practical interventions for enhancing wellbeing and for evaluating these interventions (Ryff, 1989b). While this is a problem relevant to many applied disciplines concerned with wellbeing research, it appears to be particularly evident within the literature concerning positive psychology courses. There is a great degree of variability in the structure, content, assessment, and delivery of these courses, which may stem from diverse choice in theories of wellbeing and associated interventions for wellbeing. Furthermore, this heterogeneity limits the ability to compare courses and draw broader conclusions regarding their impact or effective components. Consequently, the evidence base for the use of positive psychology courses has remained limited in higher education. What can be concluded on the basis of the current findings, however, is that a positive psychology course grounded in theoretical frameworks of wellbeing (i.e., Ryff's [1989a] psychological wellbeing model and Seligman's [2011] PERMA+ model) contributed to beneficial mental health outcomes for students, and that understanding the theory behind wellbeing was perceived by students to be critical to this. What remains unclear, and thus may be a future direction

for research, is whether positive psychology courses grounded in different theories are equally as effective.

The current findings also highlight the utility of using a mixed methods approach to evaluate the efficacy of positive psychology courses. Such an approach provides a more thorough evaluation of positive psychology courses, and a deeper and richer understanding of their efficacy, compared to using just one approach. For example, the quantitative findings demonstrated that the comprehensive positive psychology course had a positive impact on students' mental health, while the qualitative findings provided some insights regarding the elements of the course that may have contributed to these outcomes. In combination, the use of mixed methods research enables us to conclude that positive psychology courses can be effective *and* readily adopted or well-liked by students. This is a critical contribution to the literature, as an intervention designed for students may be effective but if it is not readily accessed by students then it will not have the desired impact. Furthermore, the use of qualitative research assists researchers in refining and contextualising courses to each university and specific student population (Hamling et al., 2020). Specifically, "mixed methods addresses multiple types of questions at once and provides a mechanism for answering both *how* and *why*, *how much* and *in what ways*, and *if* and *why* [wellbeing] occurs" (Clark & Clark, 2022, p. 36). While the use of mixed methods has been limited within positive psychological research to date (Clark & Clark, 2022; van Zyl et al., 2023), researchers are beginning to recognise the utility of such an approach (Byrom, 2017; Hughes & Byrom, 2019; Upsher et al., 2022) and have advocated for this as a future direction for wellbeing research more broadly (Clark & Clark, 2022; Hamling et al., 2020; Sollis, 2023). Relatedly, there is

utility in going beyond basic qualitative evaluations to also enlist students as co-creators of research using participatory research approaches (Sollis, 2023).

7.4 Limitations of the Current Research Program and Future Directions

As with the implications of this research program's findings, limitations specific to each of its studies are discussed in the relevant chapters of this thesis. Here, the broader limitations of this research are discussed and several additional directions for future research are proposed.

First and foremost, the current research provided detailed insight into the impact of a comprehensive positive psychology course on psychological wellbeing, however, it neglected to measure the impact of the course on social wellbeing. Although relationship quality was measured as an aspect of psychological wellbeing, this reflects the more private or individual aspects of social wellbeing and does not consider the groups, social structures or systems within which a person may exist (Keyes, 1998). Therefore, it remains important for future research to address the potential impact of positive psychology courses on social wellbeing, particularly in the context of the extensive literature demonstrating the importance of quality relationships, social support, and social group membership for mental health, subjective wellbeing, physical health, and mortality (Cruwys et al., 2013; Haslam et al., 2020; Iyer et al., 2008; Reis & Le, 2023).

Similarly, the current research only examined the impact of the positive psychology course on symptoms of anxiety, depression and stress, as aspects of psychological distress. Future studies could utilise broader indices of psychopathology such as the Personality Assessment Screener (PAS; Morey, 1997) and the General Health Questionnaire – 28 (GHQ-28; Goldberg & Hillier, 1979). The use of broader indices may

enable researchers to examine the impact of positive psychology courses on the four subcategories of mental health proposed by the dual-continua model in Chapter 3 (Jahoda, 1958; Tengland, 2001; Tudor, 1996), and, as a result, further understand the potential reach and limits of these courses.

Secondly, the present research program examined the impact of only one positive psychology course on students' wellbeing and psychological distress, and as a consequence, the main findings may have limited generalisability. While the course itself was comprehensive in nature, consisting of elements common to other positive psychology courses, the conclusions drawn require replication. Of particular concern is the generalisability of the results to courses and students from non-Western universities, given the limited diversity of our student sample (Lambert et al., 2015a). Furthermore, there are only a limited number of evaluations of courses administered in non-Western universities (Arasil et al., 2020; Lambert et al., 2018, 2023) so this remains an important direction for future research. Two of these studies were conducted at universities in the United Arab Emirates and the courses evaluated appear similar to the course evaluated in the present program of research, as they were grounded in theory (i.e., Seligman's [2011] PERMA+ model) and included several positive psychology interventions (Lambert et al., 2018). In contrast, a study has been conducted in Turkey to evaluate a relatively disparate course that included teaching on a variety of topics beyond positive psychology such as communication skills, social cognitive neuroscience, and motivation and planning (Arasil et al., 2020). These evaluations found some beneficial impacts resulting from the respective positive psychology courses, however, it is difficult to compare these findings to the current research as different measures of wellbeing were used.

Similarly, the participants of the present research were not suitably representative of the broader student population as there was an over-representation of females relative to males in both studies, of younger versus older students, and a focus on science and arts students relative to students from a diverse range of academic disciplines. Furthermore, information regarding study intensity (i.e., part-time versus full-time), and residency status (i.e., domestic versus international) was not captured. Given this, future studies may enhance generalisability by evaluating the impact of these courses on student samples that are more representative of the demographic characteristics of the university's broader student population. In addition, it remains important to investigate the impact of positive psychology courses on students undertaking study in academic disciplines beyond the arts and sciences, as this has been the focus of research to date.

More broadly, inter-institutional collaboration would enable multi-site research, and thus begin to broaden the generalisability of single-site evaluations of positive psychology courses (Hone et al., 2015). Since it is recognised that universities are complex institutions, approaches to supporting students' mental health may need to be contextualised to the specific setting and characteristics of each university. For example, universities may vary across a number of dimensions, including but not limited to: student and staff characteristics, support services and resources, curriculum structure, leadership and governance, culture, and community. Accordingly, a number of conditions relating to these dimensions may support or impede student wellbeing, resulting in a complex interaction of risk and protective factors. To design sustainable interventions that fit within these complex systems and surpass barriers to implementation (March et al., 2022), it appears important to understand how positive

psychological approaches may fit into the broader range of approaches associated with these dimensions for supporting students' mental health and wellbeing during their time at university (Brooker et al., 2019; Brown, 2018).

Researchers have suggested implementation research to support the translation of wellbeing theory and research into meaningful practices and policies in higher education in a way that takes into account these contextual considerations (Hone et al., 2015; Raymond et al., 2019; Riedel et al., 2020). In support of this, Hone et al. (2015) argue, "we need to know more about when and where positive psychology interventions work: not just whom they are working for, but also whom these programmes are failing to attract at the individual and organizational level" (p. 315). To achieve this objective, they used the RE-AIM framework to evaluate positive psychology interventions in real-world contexts. The framework suggests evaluation of five key areas (i.e., reach, efficacy or effectiveness, adoption, implementation, and maintenance), and as a result, provides a more comprehensive understanding of the utility of interventions. Furthermore, various studies detail information on the implementation framework used for instilling positive education in primary and secondary school settings, which may be useful templates for similar future research in tertiary settings (Hoare et al., 2017; Riedel et al., 2020; Waters & White, 2015).

Also requiring future research is the exploration of potential moderators of the impact of positive psychology courses on mental health outcomes. Other than the current research, only one study to our knowledge has explored moderators of course efficacy (Young et al., 2022). Given this, it remains an important area of research as the identification of moderators will enable educators to optimise these courses for specific student sub-populations, and understand the conditions under which they may have the

greatest beneficial impact (Senf & Liao, 2013). It is recommended that future research go beyond examining psychosocial factors and characteristics of students as moderators of course outcomes. Future research may also investigate characteristics of educators and their teaching styles, given research suggesting teacher wellbeing influences student wellbeing and satisfaction at university (Green et al., 2015; Harding et al., 2019; Soini et al., 2010).

Additionally, the scope of the research detailed in this thesis is limited by its focus on students. It remains important for future research to design and evaluate interventions to support the mental health and wellbeing of university faculty. It is generally recognised that faculty experience demanding workloads and high expectations of performance across teaching, research, and administrative duties (Roos & Borkoski, 2021). This arguably creates fertile ground for burnout and poor mental health. In support of this, recent studies indicate concerning levels of depression, anxiety, stress, and burnout among faculty members (Hammoudi Halat et al., 2023; Watts & Robertson, 2010). Changes to university policies and procedures which prioritise faculty mental health, various institutional and leadership support initiatives, and individual-focused strategies have been implemented to support faculty wellbeing (Hammoudi Halat et al., 2023). However, a recent systematic review of this literature highlights research is limited in this area (Cann et al., 2023). Nonetheless, research to date indicates the most promising interventions with regard to efficacy are multi-component in nature (i.e., including a variety of beneficial strategies) (Cann et al., 2023). Given positive psychology courses are similarly multi-component in nature, a future direction in research may entail the adaptation and evaluation of their impact on faculty

mental health and wellbeing. This may take the form of professional development courses.

Relatedly, the narrow focus on students in the current research neglects the systems in which they exist. Interventions designed to provide psychoeducation and enhance skills, such as positive psychology courses, may empower individuals to better manage their mental health and wellbeing. However, researchers have criticised this focus on the individual in positive psychology, and call for interventions which also address wellbeing from a systemic or institutional perspective (Kern et al., 2020). Examples of institution or *place-level* interventions which currently exist in higher education include funding health and counselling centres, classroom and curricular approaches, changes to the built and natural environment, and policies and practices which aim to reduce substance misuse, sexual violence, and discrimination towards disability, ethnicity or race, and sexuality or gender (Christensen & Kennedy, 2023). Examining frameworks implemented within secondary schools also provide examples of more wholistic mental health and wellbeing interventions. For example, the Mind Matters program is used in several secondary schools in Australia, providing a framework for integrating interventions that promote health and wellbeing including partnerships with other schools, parents and external community services, changes to the physical environment and school culture or ethos, classroom level strategies related to teaching and learning, and individually tailored interventions for students (Wyn et al., 2000).

Finally, the Systems Informed Positive Psychology (SIPP) framework may provide avenues for broadening positive psychology's focus on the individual in future research (Kern et al., 2020). This framework combines systems science with positive psychology

theory to support research that considers both individuals and the complex social systems within which they exist. To achieve a more holistic approach to addressing mental health and wellbeing in higher education, the SIPP (Kern et al., 2020) suggests including practices which (1) enhance awareness of systems and issues within the system, (2) clarify and define the limits or boundaries of all interventions, (3) integrate research and practice, (4) carefully consider the outcomes of research and practice, and (5) value diverse perspectives and methodologies.

7.5 Concluding Remarks

A growing number of universities have introduced positive psychology courses into their curricula to teach students about the science and practice of wellbeing. However, research into the efficacy of these courses for enhancing students' mental health has remained in its infancy. In the present program of research, various gaps and methodological limitations in the existing research were highlighted to establish a rationale for a more thorough and rigorous evaluation of the impact of positive psychology courses. To this end, quantitative and qualitative research methods were used to analyse a comprehensive positive psychology course, which was grounded in wellbeing theory and research, and provided instruction on multiple wellbeing-enhancing activities and practices.

In the first study of this program of research, students most in need of mental health support from their universities were identified. It was found that students with lower social identification with the university experienced higher levels of psychological distress and depression at the beginning and end of semester. In addition, this study investigated the impact of a positive psychology course on general and specific measures

of both wellbeing and psychological distress over a nine-month period, along with moderators of the course's impact on these outcomes over time. Relative to standard courses, the positive psychology course supported students to maintain their level of psychological wellbeing, environmental mastery, psychological distress, and depression, while enhancing their sense of autonomy, in the short term. In the longer-term, the positive psychology course significantly enhanced students' psychological wellbeing and environmental mastery relative to standard courses. Furthermore, greater benefits from the positive psychology course, relative to standard courses, were observed for mastery at the end of the semester specifically for students with higher social identification.

Contributing to this empirical investigation, in the second study of this program of research, students were asked to share their perspectives regarding the positive and negative aspects of the positive psychology course. Their feedback revealed three superordinate categories (i.e., interest in wellbeing, beneficial to wellbeing, and balancing competing needs), which together suggest students were interested in learning about wellbeing, experienced the course as beneficial for wellbeing, and recognised several challenges in delivering course content.

Collectively, the main findings of this program of research suggest positive psychology courses, in addition to or in combination with social-identity-enhancing interventions, may be a potentially cost-effective, scalable, academic strategy within a whole-of-university approach to promoting students' mental health in higher education. To fully realise the potential of positive psychology courses, however, further research into their potential impact, reach, and limits is necessary.

References

- Abbott, R. A., Ploubidis, G. B., Huppert, F. A., Kuh, D., & Croudace, T. J. (2010). An evaluation of the precision of measurement of Ryff's psychological well-being scales in a population sample. *Social Indicators Research*, 97(3), 357–373.
<https://doi.org/10.1007/s11205-009-9506-x>
- Abdel-Khalek, A. M. (2006). Measuring happiness with a single-item scale. *Social Behavior and Personality: An International Journal*, 34(2), 139–150.
<https://doi.org/10.2224/sbp.2006.34.2.139>
- Abrams, D., & Hogg, M. A. (1990). Social identification, self-categorization and social influence. *European Review of Social Psychology*, 1(1), 195–228.
<https://doi.org/10.1080/14792779108401862>
- Adler, J. M., & Hershfield, H. E. (2012). Mixed emotional experience is associated with and precedes improvements in psychological well-being. *PLOS ONE*, 7(4), e35633. <https://doi.org/10.1371/journal.pone.0035633>
- Ahern, J., Jones, M. R., Bakshis, E., & Galea, S. (2008). Revisiting Rose: Comparing the benefits and costs of population-wide and targeted interventions. *The Milbank Quarterly*, 86(4), 581–600. <https://doi.org/10.1111/j.1468-0009.2008.00535.x>
- Alharbi, E. S., & Smith, A. P. (2018). Review of the literature on stress and wellbeing of international students in English-speaking countries. *International Education Studies*, 11(6), 22. <https://doi.org/10.5539/ies.v11n6p22>
- Allan, E. G., & Driscoll, D. L. (2014). The three-fold benefit of reflective writing: Improving program assessment, student learning, and faculty professional development. *Assessing Writing*, 21, 37–55.
<https://doi.org/10.1016/j.asw.2014.03.001>

- Allport, G. W. (1961). *Pattern and growth in personality* (pp. xiv, 593). Holt, Reinhart & Winston.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.).
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revised).
- Andrews, B., & Wilding, J. M. (2004). The relation of depression and anxiety to life-stress and achievement in students. *British Journal of Psychology*, 95(4), 509–521. <https://doi.org/10.1348/0007126042369802>
- Antaramian, S. (2015). Assessing psychological symptoms and well-being: Application of a dual-factor mental health model to understand college student performance. *Journal of Psychoeducational Assessment*, 33(5), 419–429. <https://doi.org/10.1177/0734282914557727>
- Antoine, P., Dauvier, B., Andreotti, E., & Congard, A. (2018). Individual differences in the effects of a positive psychology intervention: Applied psychology. *Personality and Individual Differences*, 122, 140–147. <https://doi.org/10.1016/j.paid.2017.10.024>
- Arasil, A. B. S., Turan, F., Metin, B., Ertaş, H. S., & Tarhan, N. (2020). Positive psychology course: A way to improve well-Being. *Journal of Education and Future*, (17), 15-23. <https://doi.org/10.30786/jef.591777>
- Aristotle. (2014). *Aristotle: Nicomachean ethics* (R. Crisp, Ed.; Revised Edition). Cambridge University Press. (Original work published ca. 350 B.C.E.)
- Arria, A. M., Caldeira, K. M., Vincent, K. B., Winick, E. R., Baron, R. A., & O'Grady, K. E. (2013). Discontinuous college enrollment: Associations with substance use

- and mental health. *Psychiatric Services*, 64(2), 165–172.
<https://doi.org/10.1176/appi.ps.201200106>
- Arthur, J. (2019). *The formation of character in education: From Aristotle to the 21st century*. Routledge.
- Artioli, G., Deiana, L., De Vincenzo, F., Raucci, M., Amaducci, G., Bassi, M. C., Leo, S. D., Hayter, M., & Ghirotto, L. (2021). Health professionals and students' experiences of reflective writing in learning: A qualitative meta-synthesis. *BMC Medical Education*, 21(1), 394. <https://doi.org/10.1186/s12909-021-02831-4>
- Auerbach, R. P., Alonso, J., Axinn, W. G., Cuijpers, P., Ebert, D. D., Green, J. G., Hwang, I., Kessler, R. C., Liu, H., Mortier, P., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Aguilar-Gaxiola, S., Al-Hamzawi, A., Andrade, L. H., Benjet, C., Caldas-de-Almeida, J. M., Demyttenaere, K., ... Bruffaerts, R. (2016). Mental disorders among college students in the World Health Organization world mental health surveys. *Psychological Medicine*, 46(14), 2955–2970.
<https://doi.org/10.1017/S0033291716001665>
- Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2018). WHO world mental health surveys international college student project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, 127(7), 623–638.
<https://doi.org/10.1037/abn0000362>

- Australian Bureau of Statistics. (2022). *National study of mental health and wellbeing 2020–21: Summary statistics on key mental health issues including the prevalence of mental disorders and the use of services*.
<https://www.abs.gov.au/statistics/health/mental-health/national-study-mental-health-and-wellbeing/latest-release>
- Baik, C., Larcombe, W., & Brooker, A. (2019). How universities can enhance student mental wellbeing: The student perspective. *Higher Education Research & Development*, 38(4), 674–687.
<https://doi.org/10.1080/07294360.2019.1576596>
- Baik, C., Naylor, R., & Arkoudis, S. (2015). *The first year experience in Australian universities: Findings from two decades, 1994–2014*. Melbourne Centre for the Study of Higher Education.
- Balloo, K., Hosein, A., Byrom, N., & Essau, C. A. (2022). Differences in mental health inequalities based on university attendance: Intersectional multilevel analyses of individual heterogeneity, *SSM – Population Health*, 19, 101149.
<https://doi.org/10.1016/j.ssmph.2022.101149>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bantjes, J., Hunt, X., & Stein, D. J. (2022). Public health approaches to promoting university students' mental health: A global perspective. *Current Psychiatry Reports*, 24(12), 809–818. <https://doi.org/10.1007/s11920-022-01387-4>
- Bantjes, J., Kessler, M., Lochner, C., Breet, E., Bawa, A., Roos, J., Davids, C., Muturiki, M., Kessler, R. C., & Stein, D. J. (2023). The mental health of university

- students in South Africa: Results of the national student survey. *Journal of Affective Disorders*, 321, 217–226. <https://doi.org/10.1016/j.jad.2022.10.044>
- Barkham, M., Broglia, E., Dufour, G., Fudge, M., Knowles, L., Percy, A., Turner, A., & Williams, C. (2019). Towards an evidence-base for student wellbeing and mental health: Definitions, developmental transitions and data sets. *Counselling and Psychotherapy Research*, 19(4), 351–357. <https://doi.org/10.1002/capr.12227>
- Becker, C. M., Johnson, H., Vail-Smith, K., Maahs-Fladung, C., Tavasso, D., Elmore, B., & Blumell, C. (2008). Making health happen on campus: A review of a required general education health course. *The Journal of General Education*, 57(2), 67–74. <https://doi.org/10.2307/27798096>
- Bell, E. C., Marcus, D. K., & Goodlad, J. K. (2013). Are the parts as good as the whole? A meta-analysis of component treatment studies. *Journal of Consulting and Clinical Psychology*, 81(4), 722–736. <https://doi.org/10.1037/a0033004>
- Bell, M. L., & Rabe, B. A. (2020). The mixed model for repeated measures for cluster randomized trials: A simulation study investigating bias and type I error with missing continuous data. *Trials*, 21(1), 148. <https://doi.org/10.1186/s13063-020-4114-9>
- Bergen-Cico, D., Possemato, K., & Cheon, S. (2013). Examining the efficacy of a brief mindfulness-based stress reduction (Brief MBSR) program on psychological health. *Journal of American College Health*, 61(6), 348–360. <https://doi.org/10.1080/07448481.2013.813853>
- Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through

- university. *Studies in Higher Education*, 35(6), 633–645.
<https://doi.org/10.1080/03075070903216643>
- Bhullar, N., Hine, D. W., & Phillips, W. J. (2014). Profiles of psychological well-being in a sample of Australian university students. *International Journal of Psychology*, 49(4), 288–294. <https://doi.org/10.1002/ijop.12022>
- Biggerstaff, D., & Thompson, A. R. (2008). Interpretative phenomenological analysis (IPA): A qualitative methodology of choice in healthcare research. *Qualitative Research in Psychology*, 5(3), 214–224.
<https://doi.org/10.1080/14780880802314304>
- Biswas-Diener, R. (2011). Applied positive psychology: Progress and challenges. *The European Health Psychologist*, 13(2), 24–26.
<https://doi.org/10.1037/e544722013-003>
- Biswas-Diener, R., & Patterson, L. (2011). An experiential approach to teaching positive psychology to undergraduates. *The Journal of Positive Psychology*, 6(6), 477–481. <https://doi.org/10.1080/17439760.2011.634818>
- Bjørnskov, C. (2010). How comparable are the Gallup World Poll life satisfaction data? *Journal of Happiness Studies*, 11(1), 41–60. <https://doi.org/10.1007/s10902-008-9121-6>
- Blanco, C., Okuda, M., Wright, C., Hasin, D. S., Grant, B. F., Liu, S.-M., & Olfson, M. (2008). Mental Health of college students and their non-college-attending peers: Results from the national epidemiologic study on alcohol and related conditions. *Archives of General Psychiatry*, 65(12), 1429–1437.
<https://doi.org/10.1001/archpsyc.65.12.1429>

- Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: A meta-analysis of randomized controlled studies. *BMC Public Health*, 13(1), 119–139. <https://doi.org/10.1186/1471-2458-13-119>
- Bore, M., Pittolo, C., Kirby, D., Dluzewska, T., & Marlin, S. (2016). Predictors of psychological distress and well-being in a sample of Australian undergraduate students. *Higher Education Research & Development*, 35(5), 869–880. <https://doi.org/10.1080/07294360.2016.1138452>
- Braaten, A., Huta, V., Tyrany, L., & Thompson, A. (2019). Hedonic and eudaimonic motives toward university studies: How they relate to each other and to well-being derived from school. *Journal of Positive Psychology and Wellbeing*, 3(2), 179–196. <https://www.journalppw.com/index.php/jppw/article/view/52>
- Bridges, K. R., Harnish, R. J., & Sillman, D. (2012). Teaching undergraduate positive psychology: An active learning approach using student blogs. *Psychology Learning & Teaching*, 11(2), 228–237. <https://doi.org/10.2304/plat.2012.11.2.228>
- Brocki, J. M., & Wearden, A. J. (2006). A critical evaluation of the use of interpretative phenomenological analysis (IPA) in health psychology. *Psychology and health*, 21(1), 87–108. <https://doi.org/10.1080/14768320500230185>
- Broglia, E., Millings, A., & Barkham, M. (2018). Challenges to addressing student mental health in embedded counselling services: A survey of UK higher and further education institutions. *British Journal of Guidance & Counselling*, 46(4), 441–455. <https://doi.org/10.1080/03069885.2017.1370695>

- Brooker, A., McKague, M., & Phillips, L. (2019). Implementing a whole-of-curriculum approach to student wellbeing. *Student Success*, 10(3), 55–63.
<http://dx.doi.org/10.5204/ssj.v10i3.1417>
- Brooker, A., & Vu, C. (2020). How do University experiences contribute to students' psychological wellbeing? *Student Success*, 11(2), 99–108.
<https://doi.org/10.5204/ssj.1676>
- Brown, J. S. L. (2018). Student mental health: Some answers and more questions. *Journal of Mental Health*, 27(3), 193–196.
<https://doi.org/10.1080/09638237.2018.1470319>
- Browne, V. (2017). Under the radar: The mental health of Australian university students. *The Australian and New Zealand Student Services Association*, 25(2), 51–62. <https://doi.org/10.30688/janzssa.2017.16>
- Brunsting, N. C., Zachry, C., & Takeuchi, R. (2018). Predictors of undergraduate international student psychosocial adjustment to US universities: A systematic review from 2009–2018. *International Journal of Intercultural Relations*, 66, 22–33. <https://doi.org/10.1016/j.ijintrel.2018.06.002>
- Brunwasser, S. M., Gillham, J. E., & Kim, E. S. (2009). A meta-analytic review of the Penn resiliency program's effect on depressive symptoms. *Journal of Consulting and Clinical Psychology*, 77(6), 1042–1054.
<https://doi.org/10.1037/a0017671>
- Bughi, S. A., Sumcad, J., & Bughi, S. (2006). Effect of brief behavioral intervention program in managing stress in medical students from two Southern California universities. *Medical Education Online*, 11(1), 1–8.
<https://doi.org/10.3402/meo.v11i.4593>

- Bühler, C. (1935). The curve of life as studied in biographies. *Journal of Applied Psychology*, 19(4), 405–409. <https://doi.org/10.1037/h0054778>
- Burns, R. A., & Browning, C. (2016). Wellbeing and its improvability as a national goal. In H. Kendig, P. McDonald, & J. Piggott (Eds.), *Population Ageing and Australia's Future*. ANU Press. <https://doi.org/10.22459/PAAF.11.2016>
- Burns, R. A., & Crisp, D. A. (2020). The long-term mental health of Australia's tertiary students. *Social Psychiatry and Psychiatric Epidemiology*, 55(9), 1223–1230. <https://doi.org/10.1007/s00127-019-01806-7>
- Busher, H. (2012). Students as expert witnesses of teaching and learning. *Management in Education*, 26(3), 113–119. <https://doi.org/10.1177/0892020612445679>
- Butler, J., & Kern, M. L. (2016). The PERMA-Profiler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing*, 6(3), 1–48. <https://doi.org/10.5502/ijw.v6i3.526>
- Byrom, N. C. (2017). *Student voices: Student voices in the development of a whole university approach to mental health and wellbeing*. Student Minds.
- Cabrera, V., & Donaldson, S. I. (2023). PERMA to PERMA+4 building blocks of well-being: A systematic review of the empirical literature. *The Journal of Positive Psychology*, 1–20. <https://doi.org/10.1080/17439760.2023.2208099>
- Cage, E., Stock, M., Sharpington, A., Pitman, E., & Batchelor, R. (2020). Barriers to accessing support for mental health issues at university. *Studies in Higher Education*, 45(8), 1637–1649. <https://doi.org/10.1080/03075079.2018.1544237>
- Campbell, F., Blank, L., Cantrell, A., Baxter, S., Blackmore, C., Dixon, J., & Goyder, E. (2022). Factors that influence mental health of university and college students

- in the UK: A systematic review. *BMC Public Health*, 22(1), 1778.
<https://doi.org/10.1186/s12889-022-13943-x>
- Cann, R., Sinnema, C., Rodway, J., & Daly, A. J. (2023). What do we know about interventions to improve educator wellbeing? A systematic literature review. *Journal of Educational Change*, 1-40. <https://doi.org/10.1007/s10833-023-09490-w>
- Cardwell, J. M., Lewis, E. G., Smith, K. C., Holt, E. R., Baillie, S., Allister, R., & Adams, V. J. (2013). A cross-sectional study of mental health in UK veterinary undergraduates. *Veterinary Record*, 173(11), 266–266.
<https://doi.org/10.1136/vr.101390>
- Carr, A., Cullen, K., Keeney, C., Canning, C., Mooney, O., Chinseallaigh, E., & O'Dowd, A. (2021). Effectiveness of positive psychology interventions: A systematic review and meta-analysis. *The Journal of Positive Psychology*, 16(6), 749–769.
<https://doi.org/10.1080/17439760.2020.1818807>
- Carr, A., Finneran, L., Boyd, C., Shirey, C., Canning, C., Stafford, O., Lyons, J., Cullen, K., Prendergast, C., Corbett, C., Drumm, C., & Burke, T. (2023). The evidence-base for positive psychology interventions: A mega-analysis of meta-analyses. *The Journal of Positive Psychology*, 1–15.
<https://doi.org/10.1080/17439760.2023.2168564>
- Chatzisarantis, N. L. D., Hagger, M. S., Wang, C. K. J., & Thøgersen-Ntoumani, C. (2009). The effects of social identity and perceived autonomy support on health behaviour within the theory of planned behaviour. *Current Psychology*, 28(1), 55–68. <https://doi.org/10.1007/s12144-009-9043-4>

- Chen, I., & Forbes, C. (2014). Reflective writing and its impact on empathy in medical education: Systematic review. *Journal of Educational Evaluation for Health Professions, 11*, 20. <https://doi.org/10.3352/jeehp.2014.11.20>
- Cheung, E. O., Kwok, I., Ludwig, A. B., Burton, W., Wang, X., Basti, N., Addington, E. L., Maletich, C., & Moskowitz, J. T. (2021). Development of a positive psychology program (LAVENDER) for preserving medical student well-being: A single-arm pilot study. *Global Advances in Health and Medicine, 10*. <https://doi.org/10.1177/2164956120988481>
- Chilver, M. R., & Gatt, J. M. (2022). Six-week online multi-component positive psychology intervention improves subjective wellbeing in young adults. *Journal of Happiness Studies, 23*(3), 1267–1288. <https://doi.org/10.1007/s10902-021-00449-3>
- Christensen, B., & Kennedy, R. (2023). Wellbeing in higher education: Evidence- and policy-based strategies to enhance the wellbeing of people, place, and plant. In E. Rieger, R. Costanza, I. Kubiszewski, & P. Dugdale (Eds.), *Toward an Integrated Science of Wellbeing*. Oxford University Press.
- Clark, R., & Clark, V. P. (2022). The use of mixed methods to advance positive psychology: A methodological review. *International Journal of Wellbeing, 12*(3), 35–55. <https://doi.org/10.5502/ijw.v12i3.2017>
- Clarke, P. J., Marshall, V. W., Ryff, C. D., & Wheaton, B. (2001). Measuring psychological well-being in the Canadian Study of Health and Aging. *International Psychogeriatrics, 13*(S1), 79–90. <https://doi.org/10.1017/S1041610202008013>

- Clifford, J. S., Boufal, M. M., & Kurtz, J. E. (2004). Personality traits and critical thinking skills in college students: Empirical tests of a two-factor theory. *Assessment, 11*(2), 169–176. <https://doi.org/10.1177/1073191104263250>
- Coker, A. O., Coker, O. O., & Sanni, D. (2018). Psychometric properties of the 21-item depression anxiety stress scale (DASS-21). *African Research Review, 12*(2), 135–142. <https://doi.org/10.4314/afrrrev.v12i2.13>
- Coker, J. S., Heiser, E., Taylor, L., & Book, C. (2017). Impacts of experiential learning depth and breadth on student outcomes. *Journal of Experiential Education, 40*(1), 5–23. <https://doi.org/10.1177/1053825916678265>
- Conley, C. S. C., Durlak, J. A. D., & Dickson, D. A. D. (2013). An evaluative review of outcome research on universal mental health promotion and prevention programs for higher education students. *Journal of American College Health, 61*(5), 286–301. <https://doi.org/10.1080/07448481.2013.802237>
- Conley, C. S., Durlak, J. A., & Kirsch, A. C. (2015). A Meta-analysis of universal mental health prevention programs for higher education students. *Prevention Science, 16*(4), 487–507. <https://doi.org/10.1007/s11121-015-0543-1>
- Conley, C. S., Kirsch, A. C., Dickson, D. A., & Bryant, F. B. (2014). Negotiating the transition to college: Developmental trajectories and gender differences in psychological functioning, Cognitive-Affective Strategies, and Social Well-Being. *Emerging Adulthood, 2*(3), 195–210. <https://doi.org/10.1177/2167696814521808>
- Connolly, M. D., Zervos, M. J., Barone, C. J., Johnson, C. C., & Joseph, C. L. M. (2016). The mental health of transgender youth: Advances in understanding. *Journal*

of Adolescent Health, 59(5), 489–495.

<https://doi.org/10.1016/j.jadohealth.2016.06.012>

Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling*, 34(4), 505–517.

<https://doi.org/10.1080/03069880600942624>

Cook-Sather, A. (2006). Sound, presence, and power: “Student voice” in educational research and reform. *Curriculum inquiry*, 36(4), 359–390.

<https://doi.org/10.1111/j.1467-873X.2006.00363.x>

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment*, 4(1), 5–13.

<https://doi.org/10.1037/1040-3590.4.1.5>

Cruwys, T., Dingle, G. A., Haslam, C., Haslam, S. A., Jetten, J., & Morton, T. A. (2013).

Social group memberships protect against future depression, alleviate depression symptoms and prevent depression relapse. *Social Science & Medicine*, 98, 179–186. <https://doi.org/10.1016/j.socscimed.2013.09.013>

Cruwys, T., Haslam, S. A., Dingle, G. A., Jetten, J., Hornsey, M. J., Desdemona Chong,

E. M., & Oei, T. P. S. (2014). Feeling connected again: Interventions that increase social identification reduce depression symptoms in community and clinical settings. *Journal of Affective Disorders*, 159, 139–146.

<https://doi.org/10.1016/j.jad.2014.02.019>

Cruwys, T., South, E. I., Greenaway, K. H., & Haslam, S. A. (2015). Social identity reduces depression by fostering positive attributions. *Social Psychological and Personality Science*, 6(1), 65–74. <https://doi.org/10.1177/1948550614543309>

- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper Perennial.
- Curren, R. (2013). Aristotle's educational politics and the Aristotelian renaissance in philosophy of education. In C. Brooke & E. Frazer (Eds.), (pp. 33–49). *Ideas of education*. Routledge.
- Curry, O. S., Rowland, L. A., Van Lissa, C. J., Zlotowitz, S., McAlaney, J., & Whitehouse, H. (2018). Happy to help? A systematic review and meta-analysis of the effects of performing acts of kindness on the well-being of the actor. *Journal of Experimental Social Psychology*, 76, 320–329.
<https://doi.org/10.1016/j.jesp.2018.02.014>
- Cuthbertson, L. M., Robb, Y. A., & Blair, S. (2020). Theory and application of research principles and philosophical underpinning for a study utilising interpretative phenomenological analysis. *Radiography*, 26(2), e94–e102.
<https://doi.org/10.1016/j.radi.2019.11.092>
- Cuttilan, A. N., Sayampanathan, A. A., & Ho, R. C.-M. (2016). Mental health issues amongst medical students in Asia: A systematic review [2000–2015]. *Annals of Translational Medicine*, 4(4), 72. <https://doi.org/10.3978/j.issn.2305-5839.2016.02.07>
- Cvetkovski, S., Reavley, N. J., & Jorm, A. F. (2012). The prevalence and correlates of psychological distress in Australian tertiary students compared to their community peers. *Australian & New Zealand Journal of Psychiatry*, 46(5), 457–467. <https://doi.org/10.1177/0004867411435290>
- Dawson, A. F., Brown, W. W., Anderson, J., Datta, B., Donald, J. N., Hong, K., Allan, S., Mole, T. B., Jones, P. B., & Galante, J. (2020). Mindfulness-based interventions

- for university students: A systematic review and meta-analysis of randomised controlled trials. *Applied Psychology: Health and Well-Being*, 12(2), 384–410.
<https://doi.org/10.1111/aphw.12188>
- Deasy, C., Coughlan, B., Pironom, J., Jourdan, D., & Mannix-McNamara, P. (2014). Psychological Distress and coping amongst higher education students: A mixed method enquiry. *PLOS ONE*, 9(12), e115193.
<https://doi.org/10.1371/journal.pone.0115193>
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human Needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Dessauvague, A. S., Dang, H.-M., Nguyen, T. A. T., & Groen, G. (2022). Mental health of university students in Southeastern Asia: A systematic review. *Asia Pacific Journal of Public Health*, 34(2–3), 172–181.
<https://doi.org/10.1177/10105395211055545>
- Detry, M. A., & Ma, Y. (2016). Analyzing repeated measurements using mixed models. *JAMA*, 315(4), 407–408. <https://doi.org/10.1001/jama.2015.19394>
- Devine, K., & Hunter, K. H. (2017). PhD student emotional exhaustion: The role of supportive supervision and self-presentation behaviours. *Innovations in Education and Teaching International*, 54(4), 335–344.
<https://doi.org/10.1080/14703297.2016.1174143>
- Devlin, M. (1996). Older and Wiser?: A comparison of the learning and study strategies of mature age and younger teacher education students. *Higher Education Research & Development*, 15(1), 51–60.
<https://doi.org/10.1080/0729436960150104>

- Devlin, M., & Samarawickrema, G. (2010). The criteria of effective teaching in a changing higher education context. *Higher Education Research & Development*, 29(2), 111–124. <https://doi.org/10.1080/07294360903244398>
- Dickens, L. R. (2017). Using gratitude to promote positive change: A series of meta-analyses investigating the effectiveness of gratitude interventions. *Basic and Applied Social Psychology*, 39(4), 193–208. <https://doi.org/10.1080/01973533.2017.1323638>
- Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, 31(2), 103–157. <https://doi.org/10.1007/BF01207052>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Diener, E., Heintzelman, S. J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L. D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology / Psychologie Canadienne*, 58(2), 87–104. <https://doi.org/10.1037/cap0000063>
- Diener, E., Oishi, S., & Tay, L. (2018). Advances in subjective well-being research. *Nature Human Behaviour*, 2(4), 253–260. <https://doi.org/10.1038/s41562-018-0307-6>
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143–156. <https://doi.org/10.1007/s11205-009-9493-y>

- Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing*, 2(3), 222–235.
<https://doi.org/doi:10.5502/ijw.v2i3.4>
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five Factors of Personality. *Psychological Assessment*, 18(2), 192–203. <https://doi.org/10.1037/1040-3590.18.2.192>
- Dooris, M. (2001). The “health promoting university”: A critical exploration of theory and practice. *Health Education*, 101(2), 51–60.
<https://doi.org/10.1108/09654280110384108>
- Dooris, M., Powell, S., & Farrier, A. (2020). Conceptualizing the “whole university” approach: An international qualitative study. *Health Promotion International*, 35(4), 730–740. <https://doi.org/10.1093/heapro/daz072>
- Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of Experimental Social Psychology*, 31(5), 410–436. <https://doi.org/10.1006/jesp.1995.1018>
- Doss, B. D. (2004). Changing the way we study change in psychotherapy. *Clinical Psychology: Science and Practice*, 11(4), 368–386.
<https://doi.org/10.1093/clipsy.bph094>
- Drozdz, F., Mork, L., Nielsen, B., Raeder, S., & Bjørkli, C. A. (2014). Better days – A randomized controlled trial of an internet-based positive psychology intervention. *The Journal of Positive Psychology*, 9(5), 377–388.
<https://doi.org/10.1080/17439760.2014.910822>

- Duan, W., Ho, S. M. Y., Tang, X., Li, T., & Zhang, Y. (2014). Character strength-based intervention to promote satisfaction with life in the Chinese university context. *Journal of Happiness Studies*, 15(6), 1347–1361.
<https://doi.org/10.1007/s10902-013-9479-y>
- Duckworth, K., & Cara, O. (2012). The relationship between adult learning and wellbeing: Evidence from the 1958 national child development study. *Department for Business, Innovation and Skills: London, UK*.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/34669/12-1241-relationship-adult-learning-and-wellbeing-evidence-1958.pdf
- Duffy, A., Keown-Stoneman, C., Goodday, S., Horrocks, J., Lowe, M., King, N., Pickett, W., McNevin, S. H., Cunningham, S., Rivera, D., Bisdounis, L., Bowie, C. R., Harkness, K., & Saunders, K. E. A. (2020). Predictors of mental health and academic outcomes in first-year university students: Identifying prevention and early-intervention targets. *BJPsych Open*, 6(3), e46.
<https://doi.org/10.1192/bjo.2020.24>
- Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, 105(3), 399–412. <https://doi.org/10.1111/bjop.12046>
- Eisenberg, D., Golberstein, E., & Gollust, S. E. (2007). Help-seeking and access to mental health care in a university student population. *Medical Care*, 45(7), 594–601. <https://doi.org/10.1097/MLR.0b013e31803bb4c1>

- Eisenberg, D., Golberstein, E., & Hunt, J. B. (2009). Mental Health and Academic Success in college. *The B.E. Journal of Economic Analysis & Policy*, 9(1), 1–37. <https://doi.org/10.2202/1935-1682.2191>
- Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *American Journal of Orthopsychiatry*, 77(4), 534–542. <https://doi.org/10.1037/0002-9432.77.4.534>
- Eisenberg, D., Hunt, J., & Speer, N. (2013). Mental health in American colleges and universities: Variation across student subgroups and across campuses. *The Journal of Nervous and Mental Disease*, 201(1), 60–67. <https://doi.org/10.1097/NMD.0b013e31827ab077>
- Eloff, I., & Graham, M. (2020). Measuring mental health and well-being of South African undergraduate students. *Global Mental Health*, 7, e34. <https://doi.org/10.1017/gmh.2020.26>
- Erikson, E. H. (1994). *Identity and the life cycle*. W. W. Norton & Company.
- Evans, T. M., Bira, L., Gastelum, J. B., Weiss, L. T., & Vanderford, N. L. (2018). Evidence for a mental health crisis in graduate education. *Nature Biotechnology*, 36(3), 282–284. <https://doi.org/10.1038/nbt.4089>
- Fava, G. A. (1999). Well-being therapy: Conceptual and technical issues. *Psychotherapy and Psychosomatics*, 68(4), 171–179. <https://doi.org/10.1159/000012329>
- Feldman Barrett, L., & Russell, J. A. (1998). Independence and bipolarity in the structure of current affect. *Journal of Personality and Social Psychology*, 74(4), 967–984. <https://doi.org/10.1037/0022-3514.74.4.967>

- Fernandez, A., Howse, E., Rubio-Valera, M., Thorncraft, K., Noone, J., Luu, X., Veness, B., Leech, M., Llewellyn, G., & Salvador-Carulla, L. (2016). Setting-based interventions to promote mental health at the university: A systematic review. *International Journal of Public Health*, 61(7), 797–807.
<https://doi.org/10.1007/s00038-016-0846-4>
- Filak, V. F., & Sheldon, K. M. (2003). Student psychological need satisfaction and college teacher-course evaluations. *Educational Psychology*, 23(3), 235–247.
<https://doi.org/10.1080/0144341032000060084>
- Fink, J. E. (2014). Flourishing: Exploring predictors of mental health within the college environment. *Journal of American College Health*, 62(6), 380–388.
<https://doi.org/10.1080/07448481.2014.917647>
- Fisher, S., & Hood, B. (1987). The stress of the transition to university: A longitudinal study of psychological disturbance, absent-mindedness and vulnerability to homesickness. *British Journal of Psychology*, 78(4), 425–441.
<https://doi.org/10.1111/j.2044-8295.1987.tb02260.x>
- Folk, D., & Dunn, E. (2023). A systematic review of the strength of evidence for the most commonly recommended happiness strategies in mainstream media. *Nature Human Behaviour*, 7(10), 1697–1707. <https://doi.org/10.1038/s41562-023-01651-4>
- Foster, J., Allen, W., Oprescu, F., & McAllister, M. (2013). Mytern: An innovative approach to increase students' achievement, sense of wellbeing and levels of resilience. *Journal of the Australian and New Zealand Student Services Association*, 43, 31–40.

- <https://research.usc.edu.au/esploro/outputs/conferencePaper/Mytern-An-Innovative-Approach-to-Increase/99449062902621>
- Frankl, V. E. (1959). The spiritual dimension in existential analysis and logotherapy. *Journal of Individual Psychology, 15*(2), 157–165.
- <https://www.proquest.com/docview/1303452604?pq-origsite=gscholar&fromopenview=true&imgSeq=1>
- Freire, C., Ferradás, M. D. M., Valle, A., Núñez, J. C., & Vallejo, G. (2016). Profiles of psychological well-being and coping strategies among university students. *Frontiers in Psychology, 7*, 1554. <https://doi.org/10.3389/fpsyg.2016.01554>
- Freire, C., Ferradás, M. del M., Núñez, J. C., Valle, A., & Vallejo, G. (2019). Eudaimonic well-being and coping with stress in university students: The mediating/moderating role of self-efficacy. *International Journal of Environmental Research and Public Health, 16*(1), 48. <https://doi.org/10.3390/ijerph16010048>
- Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*(2), 103–110. <https://doi.org/10.1037/1089-2680.9.2.103>
- Gallagher, R. P. (2014). *National survey of college counseling centers 2013, Section one: 4-year directors*. The International Association of Counseling Services (IACS). <http://d-scholarship.pitt.edu/28176/>
- Gibbs, P., Cartney, P., Wilkinson, K., Parkinson, J., Cunningham, S., James-Reynolds, C., Zoubir, T., Brown, V., Barter, P., Sumner, P., MacDonald, A., Dayananda, A., & Pitt, A. (2017). Literature review on the use of action research in higher education. *Educational Action Research, 25*(1), 3–22. <https://doi.org/10.1080/09650792.2015.1124046>

- Gilbert, P. (2023). Evolution, compassion, and wellbeing. In E. Rieger, R. Costanza, I. Kubiszewski, & P. Dugdale (Eds.), *Toward an integrated science of wellbeing*. Oxford University Press.
- Gleibs, I. H., Haslam, C., Jones, J. M., Haslam, S. A., McNeill, J., & Connolly, H. (2011). No country for old men? The role of a “gentlemen’s club” in promoting social engagement and psychological well-being in residential care. *Aging & Mental Health, 15*(4), 456–466. <https://doi.org/10.1080/13607863.2010.536137>
- Goldberg, D. P., & Hillier, V. F. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine, 9*(1), 139–145. <https://doi.org/10.1017/S0033291700021644>
- Goodmon, L. B., Middleditch, A. M., Childs, B., & Pietrasiuk, S. E. (2016). Positive psychology course and its relationship to well-being, depression, and stress. *Teaching of Psychology, 43*(3), 232–237. <https://doi.org/10.1177/0098628316649482>
- Goodyear-Smith, F., Jackson, C., & Greenhalgh, T. (2015). Co-design and implementation research: Challenges and solutions for ethics committees. *BMC Medical Ethics, 16*(1), 78–83. <https://doi.org/10.1186/s12910-015-0072-2>
- Grant, F., Guille, C., & Sen, S. (2013). Well-being and the risk of depression under stress. *PLOS ONE, 8*(7), e67395. <https://doi.org/10.1371/journal.pone.0067395>
- Green, H. J., Hood, M., & Neumann, D. L. (2015). Predictors of student satisfaction with university psychology courses: A review. *Psychology Learning & Teaching, 14*(2), 131–146. <https://doi.org/10.1177/1475725715590959>

- Green, Z. A. (2022). Character strengths intervention for nurturing well-being among Pakistan's university students: A mixed-method study. *Applied Psychology: Health and Well-Being*, 14(1), 252–277. <https://doi.org/10.1111/aphw.12301>
- Greenberg, M. T., & Abenavoli, R. (2017). Universal interventions: Fully exploring their impacts and potential to produce population-level impacts. *Journal of Research on Educational Effectiveness*, 10(1), 40–67. <https://doi.org/10.1080/19345747.2016.1246632>
- Griebler, U., Rojatz, D., Simovska, V., & Forster, R. (2017). Effects of student participation in school health promotion: A systematic review. *Health Promotion International*, 32(2), 195–206. <https://doi.org/10.1093/heapro/dat090>
- Gruber, J., Mauss, I. B., & Tamir, M. (2011). A dark side of happiness? How, when, and why happiness is not always good. *Perspectives on Psychological Science*, 6(3), 222–233. <https://doi.org/10.1177/1745691611406927>
- Grubic, N., Badovinac, S., & Johri, A. M. (2020). Student mental health in the midst of the COVID-19 pandemic: A call for further research and immediate solutions. *International Journal of Social Psychiatry*, 66(5), 517–518. <https://doi.org/10.1177/0020764020925108>
- Guse, T. (2010). Positive psychology and the training of psychologists: Students' perspectives. *SA Journal of Industrial Psychology*, 36(2), 1–6. <https://doi.org/10.4102/sajip.v36i2.848>
- Halliday, A. J., Kern, M. L., Garrett, D. K., & Turnbull, D. A. (2019). The student voice in well-being: A case study of participatory action research in positive

- education. *Educational Action Research*, 27(2), 173–196.
<https://doi.org/10.1080/09650792.2018.1436079>
- Hamling, K., Jarden, R., Jarden, A., & Synard, J. (2020). Epistemological fruit salad: Broadening methodology in positive psychology research to develop contextualised interventions and understandings of well-being. *The Journal of Positive Psychology*, 15(5), 670–674.
<https://doi.org/10.1080/17439760.2020.1789708>
- Hammerness, K. (2006). From coherence in theory to coherence in practice. *Teachers College Record*, 108(7), 1241–1265. <https://doi.org/10.1111/j.1467-9620.2006.00692.x>
- Hammoudi Halat, D., Soltani, A., Dalli, R., Alsarraj, L., & Malki, A. (2023). Understanding and fostering mental health and well-being among university faculty: A narrative review. *Journal of Clinical Medicine*, 12(13), 4425.
<https://doi.org/10.3390/jcm12134425>
- Harding, S., Morris, R., Gunnell, D., Ford, T., Hollingworth, W., Tilling, K., Evans, R., Bell, S., Grey, J., Brockman, R., Campbell, R., Araya, R., Murphy, S., & Kidger, J. (2019). Is teachers' mental health and wellbeing associated with students' mental health and wellbeing? *Journal of Affective Disorders*, 242, 180–187.
<https://doi.org/10.1016/j.jad.2018.08.080>
- Hart, C. M., Ritchie, T. D., Hepper, E. G., & Gebauer, J. E. (2015). The balanced inventory of desirable responding short form (BIDR-16). *SAGE Open*, 5(4), 1–9.
<https://doi.org/10.1177/2158244015621113>
- Hartrey, L., Denieffe, S., & Wells, J. S. G. (2017). A systematic review of barriers and supports to the participation of students with mental health difficulties in

- higher education. *Mental Health & Prevention*, 6, 26–43.
<https://doi.org/10.1016/j.mhp.2017.03.002>
- Haslam, A. S., Reicher, S. D., & Levine, M. (2011). When other people are heaven, when other people are hell: How social identity determines the nature and impact of social support. In J. Jetten, C. Haslam, & A. S. Haslam (Eds.), *The social cure: Identity, health and well-being* (pp. 157–174). Psychology Press.
<https://doi.org/10.4324/9780203813195>
- Haslam, C., Cruwys, T., Chang, M. X.-L., Eckley, B., Buckingham, H., & Channon, E. (2020). Community group membership protects the well-being of adults experiencing socio-economic disadvantage. *Journal of Community & Applied Social Psychology*, 30(40), 381–387. <https://doi.org/10.1002/casp.2453>
- Haslam, C., Cruwys, T., Haslam, S. A., Dingle, G., & Chang, M. X.-L. (2016). Groups 4 health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of Affective Disorders*, 194, 188–195. <https://doi.org/10.1016/j.jad.2016.01.010>
- Haslam, S. A., Haslam, C., Cruwys, T., Jetten, J., Bentley, S. V., Fong, P., & Steffens, N. K. (2022). Social identity makes group-based social connection possible: Implications for loneliness and mental health. *Current Opinion in Psychology*, 43, 161–165. <https://doi.org/10.1016/j.copsyc.2021.07.013>
- Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social Identity, Health and Well-Being: An emerging agenda for applied psychology. *Applied Psychology*, 58(1), 1–23. <https://doi.org/10.1111/j.1464-0597.2008.00379.x>

- Haslam, S. A., Jetten, J., & Waghorn, C. (2009). Social identification, stress and citizenship in teams: A five-phase longitudinal study. *Stress and Health*, 25(1), 21–30. <https://doi.org/10.1002/smi.1221>
- Hassed, C., de Lisle, S., Sullivan, G., & Pier, C. (2009). Enhancing the health of medical students: Outcomes of an integrated mindfulness and lifestyle program. *Advances in Health Sciences Education*, 14(3), 387–398. <https://doi.org/10.1007/s10459-008-9125-3>
- Heckerens, J. B., & Eid, M. (2021). Inducing positive affect and positive future expectations using the best-possible-self intervention: A systematic review and meta-analysis. *The Journal of Positive Psychology*, 16(3), 322–347. <https://doi.org/10.1080/17439760.2020.1716052>
- Hendriks, T., Schotanus-Dijkstra, M., Hassankhan, A., de Jong, J., & Bohlmeijer, E. (2020). The efficacy of multi-component positive psychology interventions: A systematic review and meta-analysis of randomized controlled trials. *Journal of Happiness Studies*, 21(1), 357–390. <https://doi.org/10.1007/s10902-019-00082-1>
- Hernández-Torrano, D., Ibrayeva, L., Sparks, J., Lim, N., Clementi, A., Almkhambetova, A., Nurtayev, Y., & Muratkyzy, A. (2020). Mental health and well-being of university students: A bibliometric mapping of the literature. *Frontiers in Psychology*, 11, 1226. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01226>
- Hjorth, C. F., Bilgrav, L., Frandsen, L. S., Overgaard, C., Torp-Pedersen, C., Nielsen, B., & Bøggild, H. (2016). Mental health and school dropout across educational

- levels and genders: A 4.8-year follow-up study. *BMC Public Health*, 16, 976.
<https://doi.org/10.1186/s12889-016-3622-8>
- Hoare, E., Bott, D., & Robinson, J. (2017). Learn it, live it, teach it, embed it: Implementing a whole school approach to foster positive mental health and wellbeing through positive education. *International Journal of Wellbeing*, 7(3), 56–71. <https://doi.org/10.5502/ijw.v7i3.645>
- Hobbs, C., Armitage, J., Hood, B., & Jelbert, S. (2022). A systematic review of the effect of university positive psychology courses on student psychological wellbeing. *Frontiers in Psychology*, 13, 1023140.
<https://doi.org/10.3389/fpsyg.2022.1023140>
- Hobbs, C., Jelbert, S., Santos, L. R., & Hood, B. (2022). Evaluation of a credit-bearing online administered happiness course on undergraduates' mental well-being during the COVID-19 pandemic. *PLOS ONE*, 17(2), e0263514.
<https://doi.org/10.1371/journal.pone.0263514>
- Hoffmann, T. C., Glasziou, P. P., Boutron, I., Milne, R., Perera, R., Moher, D., ... & Michie, S. (2014). Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. *Bmj*, 348.
<https://doi.org/10.1136/bmj.g1687>
- Hoffmann, P., Platow, M. J., Read, E., Mansfield, T., Carron-Arthur, B., & Stanton, M. (2020). Perceived self-in-group prototypicality enhances the benefits of social identification for psychological well-being. *Group Dynamics: Theory, Research, and Practice*, 24(4), 213–226. <https://doi.org/10.1037/gdn0000119>
- Hone, L. C., Jarden, A., & Schofield, G. M. (2015). An evaluation of positive psychology intervention effectiveness trials using the re-aim framework: A practice-

- friendly review. *The Journal of Positive Psychology*, 10(4), 303–322.
<https://doi.org/10.1080/17439760.2014.965267>
- Hone, L. C., Jarden, A., Schofield, G. M., & Duncan, S. (2014). Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing. *International Journal of Wellbeing*, 4(1), 62–90.
<https://doi.org/10.5502/ijw.v4i1.4>
- Hood, B., Jelbert, S., & Santos, L. R. (2021). Benefits of a psychoeducational happiness course on university student mental well-being both before and during a COVID-19 lockdown. *Health Psychology Open*, 8(1), 1–12.
<https://doi.org/10.1177/2055102921999291>
- Hotopf, M., Mehta, N., Henderson, M., & Wessely, S. (2015). Wellbeing interventions: No evidence they prevent mental illness. *The Lancet*, 386(9996), 852–853.
[https://doi.org/10.1016/S0140-6736\(15\)00009-4](https://doi.org/10.1016/S0140-6736(15)00009-4)
- Houghton, F., Keane, N., Murphy, N., Houghton, S., & Dunne, C. (2010). Tertiary level students and the mental health index (MHI-5) in Ireland. *Irish Journal of Applied Social Studies*, 10(1), 7. <https://doi.org/10.21427/D75Q81>
- Howell, D. C. (2012). *Statistical methods for psychology*. Cengage Learning.
- Hughes, G. J., & Byrom, N. C. (2019). Managing student mental health: The challenges faced by academics on professional healthcare courses. *Journal of Advanced Nursing*, 75(7), 1539–1548. <https://doi.org/10.1111/jan.13989>
- Hummel, C. (1993). Aristotle. *Prospects*, 23(1), 39–51.
<https://doi.org/10.1007/BF02195024>

- Huppert, F. A., & So, T. T. C. (2013). Flourishing across europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research*, 110(3), 837–861. <https://doi.org/10.1007/s11205-011-9966-7>
- Iasiello, M. P., Bartholomaeus, J. D., Jarden, A. J., & Kelly, G. (2017). Measuring PERMA+ in South Australia, the state of wellbeing: A comparison with national and international norms. *Journal of Positive Psychology and Wellbeing*, 1(2), 53-72.
<https://www.journalppw.com/index.php/jppw/article/view/8>
- Iasiello, M., & van Agteren, J. (2020). Mental health and/or mental illness: A scoping review of the evidence and implications of the dual-continua model of mental health. *Evidence Base: A Journal of Evidence Reviews in Key Policy Areas*, (1), 1–45. <https://10.21307/eb-2020-001>
- Ibrahim, A. K., Kelly, S. J., & Glazebrook, C. (2013). Socioeconomic status and the risk of depression among UK higher education students. *Social Psychiatry and Psychiatric Epidemiology*, 48(9), 1491–1501. <https://doi.org/10.1007/s00127-013-0663-5>
- International Conference on Health Promoting Universities and Colleges. (2015). *Okanagan charter: An international charter for health promoting universities and colleges* (pp. 1–11). <https://www.healthpromotingcampuses.org/okanagan-charter>
- Irwin, T. H. (1991). Aristippus against happiness. *The Monist*, 74(1), 55–82.
<https://www.jstor.org/stable/27903224>

- Iyer, A., Jetten, J., & Tsivrikos, D. (2008). Torn between identities: Predictors of adjustment to identity change. In F. Sani (Ed.), *Self-continuity: Individual and collective perspectives* (pp. 186–197). Psychology Press.
- Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., & Haslam, S. A. (2009). The more (and the more compatible) the merrier: Multiple group memberships and identity compatibility as predictors of adjustment after life transitions. *British Journal of Social Psychology*, 48(4), 707–733.
<https://doi.org/10.1348/014466608X397628>
- Jackman, P. C., Slater, M. J., Carter, E. E., Sisson, K., & Bird, M. D. (2022). Social support, social identification, mental wellbeing, and psychological distress in doctoral students: A person-centred analysis. *Journal of Further and Higher Education*, 47(1), 1–14. <https://doi.org/10.1080/0309877X.2022.2088272>
- Jahoda, M. (1958). *Current concepts of positive mental health*. Basic Books.
<https://doi.org/10.1037/11258-000>
- Jayawickreme, E., & Forgeard, M. J. C. (2011). Insight or data: Using non-scientific sources to teach positive psychology. *The Journal of Positive Psychology*, 6(6), 499–505. <https://doi.org/10.1080/17439760.2011.634819>
- Jetten, J., Haslam, C., & Haslam, S. A. (Eds.). (2011). *The social cure: Identity, health and well-being* (1st ed.). Psychology Press.
<https://doi.org/10.4324/9780203813195>
- Jones, M. C., & Johnston, D. W. (2006). Is the introduction of a student-centred, problem-based curriculum associated with improvements in student nurse well-being and performance? An observational study of effect. *International*

- Journal of Nursing Studies*, 43(8), 941–952.
<https://doi.org/10.1016/j.ijnurstu.2005.10.013>
- Joshanloo, M. (2014). Eastern conceptualizations of happiness: Fundamental differences with Western Views. *Journal of Happiness Studies*, 15, 475 – 493.
<https://doi.org/10.1007/s10902-013-9431-1>
- Jung, C. G., & Dell, W. S. (1955). *Modern man in search of a soul* (W. S. Dell & C. F. Baynes, Trans.). Harcourt Publishers Group.
- Junker, N. M., van Dick, R., Avanzi, L., Häusser, J. A., & Mojzisch, A. (2019). Exploring the mechanisms underlying the social identity–ill-health link: Longitudinal and experimental evidence. *British Journal of Social Psychology*, 58(4), 991–1007. <https://doi.org/10.1111/bjso.12308>
- Kashdan, T. B., Barrett, L. F., & McKnight, P. E. (2015). Unpacking emotion differentiation: Transforming unpleasant experience by perceiving distinctions in negativity. *Current Directions in Psychological Science*, 24(1), 10–16.
<https://doi.org/10.1177/0963721414550708>
- Kelk, N., Medlow, S., & Hickie, I. (2010). Distress and depression among Australian law students: Incidence, attitudes and the role of universities comment. *Sydney Law Review*, 32(1), 113–122.
<https://heinonline.org/HOL/P?h=hein.journals/sydney32&i=117>
- Kelley, T. L. (1927). *Interpretation of educational measurements*. World Book Co.
- Kern, M. L., Williams, P., Spong, C., Colla, R., Sharma, K., Downie, A., Taylor, J. A., Sharp, S., Siokou, C. & Oades, L. G. (2020). Systems informed positive psychology, *The Journal of Positive Psychology*, 15(6), 705–715.
<https://doi.org/10.1080/17439760.2019.1639799>

- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Üstün, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry*, 20(4), 359–364.
<https://doi.org/10.1097/YCO.0b013e32816ebc8c>
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32(6), 959–976.
<https://doi.org/10.1017/S0033291702006074>
- Kessler, R. C., Angermeyer, M., Anthony, J. C., De Graaf, R., Demyttenaere, K., Gasquet, I., de Girolamo, G., Gluzman, S., Gureje, O., Haro, J. M., Kawakami, N., Karam, A., Levinson, D., Medina Mora, M. E., Oakley Browne, M. A., Posada-Villa, J., Stein, D. J., Adley Tsang, C. H., Aguilar-Gaxiola, S., ... Üstün, T. B. (2007). Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry*, 6(3), 168–176.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2174588/>
- Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 61(2), 121–140.
<https://doi.org/10.2307/2787065>
- Keyes, C. L. M. (2002). The Mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207–222. JSTOR.
<https://doi.org/10.2307/3090197>

- Keyes, C. L. M. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology, 73*(3), 539–548. <https://doi.org/10.1037/0022-006X.73.3.539>
- Keyes, C. L. M., Dhingra, S. S., & Simoes, E. J. (2010). Change in level of positive mental health as a predictor of future risk of mental illness. *American Journal of Public Health, 100*(12), 2366–2371. <https://doi.org/10.2105/AJPH.2010.192245>
- Khanjani, M., Shahidi, S., Fathabadi, J., Mazaheri, M. A., & Shokri, O. (2014). Factor structure and psychometric properties of the Ryff's scale of psychological well-being, short form (18-item) among male and female students. *Thoughts and Behavior in Clinical Psychology, 9*(32), 27–36. https://jtbcp.roudehen.iau.ir/article_67.html
- Kim, H., Doiron, K., Warren, M., & Donaldson, S. (2018). The international landscape of positive psychology research: A systematic review. *International Journal of Wellbeing, 8*(1), 50–70. <https://doi.org/10.5502/ijw.v8i1.651>
- Kim-Prieto, C., & D'Oriano, C. (2011). Integrating research training and the teaching of positive psychology. *The Journal of Positive Psychology, 6*(6), 457–462. <https://doi.org/10.1080/17439760.2011.634827>
- King, N., Linden, B., Cunningham, S. et al. The feasibility and effectiveness of a novel online mental health literacy course in supporting university student mental health: a pilot study. *BMC Psychiatry 22*, 515 (2022). <https://doi.org/10.1186/s12888-022-04139-z>
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *Bmj, 311*(7000), 299 – 302. <https://doi.org/10.1136/bmj.311.7000.299>

- Kleinman, K. E. (2014). *A unified approach to well-being: The development and impact of an undergraduate course* [Doctoral thesis, James Madison University]. JMU Scholarly Commons. <https://commons.lib.jmu.edu/diss201019>
- Koydemir, S., Sökmez, A. B., & Schütz, A. (2020). A meta-analysis of the effectiveness of randomized controlled positive psychological interventions on subjective and psychological well-being. *Applied Research in Quality of Life*, 16(3), 1145–1185. <https://doi.org/10.1007/s11482-019-09788-z>
- Kranzler, A., Parks, A. C., & Gillham, J. (2011). Illustrating positive psychology concepts through service learning: Penn teaches resilience. *The Journal of Positive Psychology*, 6(6), 482–486. <https://doi.org/10.1080/17439760.2011.634829>
- Kubzansky, L. D., Kim, E. S., Boehm, J. K., Davidson, R. J., Huffman, J. C., Loucks, E. B., Lyubomirsky, S., Picard, R. W., Schueller, S. M., Trudel-Fitzgerald, C., VanderWeele, T. J., Warman, K., Yeager, D. S., Yeh, C. S., & Moskowitz, J. T. (2023). Interventions to modify psychological well-being: Progress, promises, and an agenda for future research. *Affective Science*, 4(1), 174–184. <https://doi.org/10.1007/s42761-022-00167-w>
- Kurtz, J. L. (2011). Happiness and self-knowledge: A positive psychology and judgment and decision-making hybrid course. *The Journal of Positive Psychology*, 6(6), 463–467. <https://doi.org/10.1080/17439760.2011.634820>
- Laidlaw, A., McLellan, J., & Ozakinci, G. (2016). Understanding undergraduate student perceptions of mental health, mental well-being and help-seeking behaviour. *Studies in Higher Education*, 41(12), 2156–2168. <https://doi.org/10.1080/03075079.2015.1026890>

- Lambert, L., Draper, Z. A., Warren, M. A., & Mendoza-Lepe, R. (2023). Assessing a happiness and wellbeing course in the United Arab Emirates: It is what they want, but is it what they need? *International Journal of Applied Positive Psychology*, 8(1), 115–137. <https://doi.org/10.1007/s41042-022-00080-4>
- Lambert, L., Lomas, T., van de Weijer, M. P., Passmore, H. A., Joshanloo, M., Harter, J., Ishikawa, Y., Lai, A., Kitagawa, T., Chen, D., Kawakami, T., Miyata, H., & Diener, E. (2020). Towards a greater global understanding of wellbeing: A proposal for a more inclusive measure. *International Journal of Wellbeing*, 10(2), 1-18. <https://doi.org/10.5502/ijw.v10i2.1037>
- Lambert, L., Pasha-Zaidi, N., Passmore, H.-A., & Al-Karam, C. Y. (2015a). Developing an indigenous positive psychology in the United Arab Emirates. *Middle East Journal of Positive Psychology*, 1, 1–23. <https://www.middleeastjournalofpositivepsychology.org/index.php/mejpp/article/view/24>
- Lambert, L., Passmore, H.-A., & Holder, M. D. (2015b). Foundational frameworks of positive psychology: Mapping well-being orientations. *Canadian Psychology / Psychologie Canadienne*, 56(3), 311–321. <https://doi.org/10.1037/cap0000033>
- Lambert, L., Passmore, H.-A., & Joshanloo, M. (2018). A positive psychology intervention program in a culturally-diverse university: Boosting happiness and reducing fear. *Journal of Happiness Studies*, 20(4), 1141–1162. <https://doi.org/10.1007/s10902-018-9993-z>
- Lamers, S. M. A., Westerhof, G. J., Glas, C. A. W., & Bohlmeijer, E. T. (2015). The bidirectional relation between positive mental health and psychopathology in

- a longitudinal representative panel study. *The Journal of Positive Psychology*, 10(6), 553–560. <https://doi.org/10.1080/17439760.2015.1015156>
- Langford, R., Bonell, C., Jones, H., Poulou, T., Murphy, S., Waters, E., Komro, K., Gibbs, L., Magnus, D., & Campbell, R. (2015). The World Health Organization's health promoting schools framework: A Cochrane systematic review and meta-analysis. *BMC Public Health*, 15, 130. <https://doi.org/10.1186/s12889-015-1360-y>
- Larcombe, W. (2016). Towards an integrated, whole-school approach to promoting law student wellbeing. In R. Field, J. Duffy, & C. James (Eds.), *Promoting Law student and lawyer well-being in Australia and beyond*. Routledge.
- Larcombe, W., Baik, C., & Finch, S. (2021). Exploring course experiences that predict psychological distress and mental wellbeing in Australian undergraduate and graduate coursework students. *Higher Education Research & Development*, 41(2), 1–16. <https://doi.org/10.1080/07294360.2020.1865284>
- Larcombe, W., Finch, S., & Sore, R. (2020). Who's distressed?: Not only law students: Psychological distress levels in university students across diverse fields of study. *The Sydney Law Review*, 37(2), 243–273. <https://doi.org/10.3316/informit.310280367807277>
- Larcombe, W., Finch, S., Sore, R., Murray, C. M., Kentish, S., Mulder, R. A., Lee-Stecum, P., Baik, C., Tokatlidis, O., & Williams, D. A. (2016). Prevalence and socio-demographic correlates of psychological distress among students at an Australian university. *Studies in Higher Education*, 41(6), 1074–1091. <https://doi.org/10.1080/03075079.2014.966072>

- Leahy, C. M., Peterson, R. F., Wilson, I. G., Newbury, J. W., Tonkin, A. L., & Turnbull, D. (2010). Distress levels and self-reported treatment rates for medicine, law, psychology and mechanical engineering tertiary students: Cross-sectional study. *Australian & New Zealand Journal of Psychiatry*, 44(7), 608–615.
<https://doi.org/10.3109/00048671003649052>
- Lee, J., & Graham, A. V. (2001). Students' perception of medical school stress and their evaluation of a wellness elective. *Medical Education*, 35(7), 652–659.
<https://doi.org/10.1046/j.1365-2923.2001.00956.x>
- Lee, Y. P. (2017). *The impact of a positive psychology course on well-being among adults in Hong Kong* [Doctor of Psychology, Alliant International University]. ProQuest Dissertations Publishing.
<https://www.proquest.com/docview/1911778231/abstract/ICBDEB47C38247EBPQ/1>
- Lefevor, G. T., Jensen, D. R., Jones, P. J., Janis, R. A., & Hsieh, C. H. (2018). *An undergraduate positive psychology course as prevention and outreach*. PsyArXiv. <https://doi.org/10.31234/osf.io/r52wg>
- Lewis, E. G., & Cardwell, J. M. (2019). A comparative study of mental health and wellbeing among UK students on professional degree programmes. *Journal of Further and Higher Education*, 43(9), 1226–1238.
<https://doi.org/10.1080/0309877X.2018.1471125>
- Lewis, H. (2007). *Excellence without a soul: Does liberal education have a future?* PublicAffairs.

- Li, R.-H. (2014). Reliability and validity of a shorter Chinese version for Ryff's psychological well-being scale. *Health Education Journal*, 73(4), 446–452.
<https://doi.org/10.1177/0017896913485743>
- Limone, P., & Toto, G. A. (2022). Factors that predispose undergraduates to mental issues: A cumulative literature review for future research perspectives. *Frontiers in Public Health*, 10, 831849.
<https://doi.org/10.3389/fpubh.2022.831849>
- Linden, B., Boyes, R., & Stuart, H. (2021). Cross-sectional trend analysis of the NCHA II survey data on Canadian post-secondary student mental health and wellbeing from 2013 to 2019. *BMC Public Health*, 21(1), 590.
<https://doi.org/10.1186/s12889-021-10622-1>
- Linton, M.-J., Jelbert, S., Kidger, J. L., Morris, R. W., Biddle, L. A., & Hood, B. M. (2021). Investigating the use of electronic well-being diaries completed within a psychoeducation program for university students: Longitudinal text analysis study. *JMIR*, 23(4), e25279. <https://doi.org/10.2196/25279>
- Lipson, S. K., & Eisenberg, D. (2018). Mental health and academic attitudes and expectations in university populations: Results from the healthy minds study. *Journal of Mental Health*, 27(3), 205–213.
<https://doi.org/10.1080/09638237.2017.1417567>
- Lipson, S. K., Kern, A., Eisenberg, D., & Breland-Noble, A. M. (2018). Mental health disparities among college students of color. *Journal of Adolescent Health*, 63(3), 348–356. <https://doi.org/10.1016/j.jadohealth.2018.04.014>
- Lipson, S. K., Zhou, S., Abelson, S., Heinze, J., Jirsa, M., Morigney, J., Patterson, A., Singh, M., & Eisenberg, D. (2022). Trends in college student mental health

- and help-seeking by race/ethnicity: Findings from the national healthy minds study, 2013–2021. *Journal of Affective Disorders*, 306, 138–147.
<https://doi.org/10.1016/j.jad.2022.03.038>
- Liu, C. H., Stevens, C., Wong, S. H. M., Yasui, M., & Chen, J. A. (2018). The prevalence and predictors of mental health diagnoses and suicide among U.S. college students: Implications for addressing disparities in service use. *Depression and Anxiety*, 36(1), 8–17. <https://doi.org/10.1002/da.22830>
- Løhre, A., Moksnes, U. K., & Lillefjell, M. (2014). Gender differences in predictors of school wellbeing? *Health Education Journal*, 73(1), 90–100.
<https://doi.org/10.1177/0017896912470822>
- Lomas, T. (2015). Positive cross-cultural psychology: Exploring similarity and difference in constructions and experiences of wellbeing. *International Journal of Wellbeing*, 5(4), 60–77. <https://doi.org/10.5502/ijw.v5i4.437>
- Lomas, T., Case, B., Cratty, F. J., & VanderWheele, T. (2021). A global history of happiness. *International Journal of Wellbeing*, 11(4), 68–87.
<https://doi.org/10.5502/ijw.v11i4.1457>
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the Beck depression and anxiety inventories. *Behaviour Research and Therapy*, 33(3), 335–343. [https://doi.org/10.1016/0005-7967\(94\)00075-U](https://doi.org/10.1016/0005-7967(94)00075-U)
- Lukoševičiūtė, J., Gariėpy, G., Mabelis, J., Gaspar, T., Joffė-Luinienė, R., & Šmigelskas, K. (2022). Single-item happiness measure features adequate validity among adolescents. *Frontiers in Psychology*, 13, 884520.
<https://doi.org/10.3389/fpsyg.2022.884520>

- Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science*, 7(3), 186–189. <https://doi.org/10.1111/j.1467-9280.1996.tb00355.x>
- Lyndon, M. P., Strom, J. M., Alyami, H. M., Yu, T.-C., Wilson, N. C., Singh, P. P., Lemanu, D. P., Yelder, J., & Hill, A. G. (2014). The relationship between academic assessment and psychological distress among medical students: A systematic review. *Perspectives on Medical Education*, 3(6), 405–418. <https://doi.org/10.1007/s40037-014-0148-6>
- Macaskill, A. (2013). The mental health of university students in the United Kingdom. *British Journal of Guidance & Counselling*, 41(4), 426–441. <https://doi.org/10.1080/03069885.2012.743110>
- MacAskill, W., Chua, W. J., Woodall, H., & Pinidiyapathirage, J. (2023). Beyond the written reflection: A Systematic review and qualitative synthesis of creative approaches to reflective learning amongst medical students. *Perspectives on Medical Education*, 12(1), 361–371. <https://doi.org/10.5334/pme.914>
- Magyar-Moe, J. L. (2011). Incorporating positive psychology content and applications into various psychology courses. *The Journal of Positive Psychology*, 6(6), 451–456. <https://doi.org/10.1080/17439760.2011.634821>
- Mahon, C., Fitzgerald, A., O'Reilly, A., & Dooley, B. (2022). Profiling third-level student mental health: Findings from my world survey 2. *Irish Journal of Psychological Medicine*, 1–9. <https://doi.org/10.1017/ipm.2021.85>
- March, A., Stapley, E., Hayes, D., Town, R., & Deighton, J. (2022). Barriers and facilitators to sustaining school-based mental health and wellbeing interventions: A systematic review. *International Journal of Environmental*

- Research and Public Health*, 19(6), 3587.
<https://doi.org/10.3390/ijerph19063587>
- Marks, P. E. L. (2011). Adolescent popularity: A positive psychology course with a developmental foundation. *The Journal of Positive Psychology*, 6(4), 314–319.
<https://doi.org/10.1080/17439760.2011.580772>
- Marsh, H. W. (1994). Sport motivation orientations: Beware of jingle-jangle fallacies. *Journal of Sport and Exercise Psychology*, 16(4), 365–380.
<https://doi.org/10.1123/jsep.16.4.365>
- Martin, J. H., Hands, K. B., Lancaster, S. M., Trytten, D. A., & Murphy, T. J. (2008). Hard but not too hard: Challenging courses and engineering students. *College Teaching*, 56(2), 107–113. <https://doi.org/10.3200/CTCH.56.2.107-113>
- Maser, B., Danilewitz, M., Guérin, E., Findlay, L., & Frank, E. (2019). Medical student psychological distress and mental illness relative to the general population: A Canadian cross-sectional survey. *Academic Medicine*, 94(11), 1781–1791.
<https://doi.org/10.1097/ACM.0000000000002958>
- Maslow, A. H. (1954). *Motivation and personality*. Harper.
- Maslow, A. H. (1968). *Toward a psychology of being*. Simon and Schuster.
- Maybury, K. K. (2013). The influence of a positive psychology course on student well-being. *Teaching of Psychology*, 40(1), 62–65.
<https://doi.org/10.1177/0098628312465868>
- McGovern, T. V. (2011). Virtues and character strengths for sustainable faculty development. *The Journal of Positive Psychology*, 6(6), 446–450.
<https://doi.org/10.1080/17439760.2011.634822>

- McIntyre, J. C., Worsley, J., Corcoran, R., Harrison Woods, P., & Bentall, R. P. (2018). Academic and non-academic predictors of student psychological distress: The role of social identity and loneliness. *Journal of Mental Health, 27*(3), 230–239. <https://doi.org/10.1080/09638237.2018.1437608>
- McKenzie, K., & Gow, K. (2004). Exploring the first year academic achievement of school leavers and mature-age students through structural equation modelling. *Learning and Individual Differences, 14*(2), 107–123. <https://doi.org/10.1016/j.lindif.2003.10.002>
- McManus, S., & Gunnell, D. (2020). Trends in mental health, non-suicidal self-harm and suicide attempts in 16–24-year old students and non-students in England, 2000–2014. *Social Psychiatry and Psychiatric Epidemiology, 55*(1), 125–128. <https://doi.org/10.1007/s00127-019-01797-5>
- Medlicott, E., Phillips, A., Crane, C., Hinze, V., Taylor, L., Tickell, A., Montero-Marin, J., & Kuyken, W. (2021). The mental health and wellbeing of university students: Acceptability, effectiveness, and mechanisms of a mindfulness-based course. *International Journal of Environmental Research and Public Health, 18*(11), 1–21. <https://doi.org/10.3390/ijerph18116023>
- Mendelson, T., & Eaton, W. W. (2018). Recent advances in the prevention of mental disorders. *Social Psychiatry and Psychiatric Epidemiology, 53*(4), 325–339. <https://doi.org/10.1007/s00127-018-1501-6>
- Morey, L. C. (1997). *Personality assessment screener (PAS) [Measurement instrument]*. Psychological Assessment Resources Incorporated. <https://www.parinc.com/Products/Pkey/313>

- Morgan, B., & Simmons, L. (2021). A 'PERMA' response to the pandemic: An online positive education programme to promote wellbeing in university students. *Frontiers in Education*, 6, 642632. <https://doi.org/10.3389/feduc.2021.642632>
- Mulder, A. M., & Cashin, A. (2015). Health and wellbeing in students with very high psychological distress from a regional Australian university. *Advances in Mental Health*, 13(1), 72–83. <https://doi.org/10.1080/18374905.2015.1035618>
- Murray, A. L., McKenzie, K., Murray, K. R., & Richelieu, M. (2016). An analysis of the effectiveness of university counselling services. *British Journal of Guidance & Counselling*, 44(1), 130–139. <https://doi.org/10.1080/03069885.2015.1043621>
- Myers, N.D., Prilleltensky, I., Prilleltensky, O. et al. Efficacy of the Fun For Wellness Online Intervention to Promote Multidimensional Well-Being: a Randomized Controlled Trial. *Prevention Science*, 18, 984–994 (2017).
<https://doi.org/10.1007/s11121-017-0779-z>
- Neugarten, B. L. (1973). Personality change in late life: A developmental perspective. In C. Eisdorfer & M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 311–335). American Psychological Association.
<https://doi.org/10.1037/10044-012>
- Newman, J. H. C. (1982). *The idea of a university*. University of Notre Dame Press.
<https://doi.org/10.2307/j.ctvpj73nm>
- Newton, J., Dooris, M., & Wills, J. (2016). Healthy universities: An example of a whole-system health-promoting setting. *Global Health Promotion*, 23(1 Suppl), 57–65.
<https://doi.org/10.1177/1757975915601037>

- Norrish, J. M., Williams, P., O'Connor, M., & Robinson, J. (2013). An applied framework for Positive Education. *International Journal of Wellbeing*, 3(2), 147–161. <https://doi.org/10.5502/ijw.v3i2.2>
- Oades, L. G., Robinson, P., Green, S., & Spence, G. B. (2011). Towards a positive university. *The Journal of Positive Psychology*, 6(6), 432–439. <https://doi.org/10.1080/17439760.2011.634828>
- Parks, A. C. (2011). The state of positive psychology in higher education: Introduction to the special issue. *The Journal of Positive Psychology*, 6(6), 429–431. <https://doi.org/10.1080/17439760.2011.637729>
- Parks, A. C. (2014). *Positive psychology in higher education*. Routledge.
- Parks, A. C., & Biswas-Diener, R. (2013). Positive interventions: Past, present, and future. In T. B. Kashdan & J. Ciarrochi (Eds.), *Mindfulness, acceptance, and positive psychology: The seven foundations of well-being* (pp. 140–165). New Harbinger Publications, Inc..
- Parks, A. C., & Ross, V. (2014). A “writing in the disciplines” course on happiness. In A. C. Parks (Ed.), *Positive psychology in higher education* (pp. 93–99). Routledge.
- Pastore, O. L., & Fortier, M. S. (2023). The mediating role of self-compassion in positive education for student mental health during COVID-19. *Health Promotion International*, 38(5), daad107. <https://doi.org/10.1093/heapro/daad107>
- Pastore, O. L., McAllister, S., & Fortier, M. (2023). The road to greater well-being: Exploring the impact of an undergraduate positive education course on university students' well-being. *Discover Psychology*, 3(1), 20. <https://doi.org/10.1007/s44202-023-00082-6>

- Patall, E. A., & Zambrano, J. (2019). Facilitating student outcomes by supporting autonomy: Implications for practice and policy. *Policy Insights from the Behavioral and Brain Sciences*, 6(2), 115–122.
<https://doi.org/10.1177/2372732219862572>
- Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *The Lancet*, 369(9569), 1302–1313.
[https://doi.org/10.1016/S0140-6736\(07\)60368-7](https://doi.org/10.1016/S0140-6736(07)60368-7)
- Paulsen, J., & BrckaLorenz, A. (2017). *Internal consistency statistics* [Technical report]. Faculty survey of student engagement.
<https://scholarworks.iu.edu/dspace/handle/2022/24503>
- Pawelski, J. (2022). Martin Seligman: Answering the call to help others. *The Journal of Positive Psychology*, 17(2), 143–148.
<https://doi.org/10.1080/17439760.2021.2016914>
- Pedersen, O. (1997). *The first universities: Studium generale and the origins of university education in Europe*. Cambridge University Press.
- Pedrotti, J. T. (2011). Broadening perspectives: Strategies to infuse multiculturalism into a positive psychology course. *The Journal of Positive Psychology*, 6(6), 506–513. <https://doi.org/10.1080/17439760.2011.634817>
- Pereira, S., Reay, K., Bottell, J., Walker, L., Dzikti, C., Platt, C., & Goodrham, C. (2020). *University student mental health survey 2020: A large scale study into the prevalence of student mental illness within UK universities* (pp. 2–25). The Insight Network and Dig In. [https://assets.website-files.com/602d05d13b303dec233e5ce3/60305923a557c3641fla7808_Mental%20Health%20Report%202019%20\(2020\).pdf](https://assets.website-files.com/602d05d13b303dec233e5ce3/60305923a557c3641fla7808_Mental%20Health%20Report%202019%20(2020).pdf)

- Pickles, K. J., Rhind, S. M., Miller, R., Jackson, S., Allister, R., Philp, J., Waterhouse, L., & Mellanby, R. J. (2012). Potential barriers to veterinary student access to counselling and other support systems: Perceptions of staff and students at a UK veterinary school. *Veterinary Record*, 170(5), 124–124.
<https://doi.org/10.1136/vr.100179>
- Postmes, T., Wichmann, L. J., van Valkengoed, A. M., & van der Hoef, H. (2019). Social identification and depression: A meta-analysis. *European Journal of Social Psychology*, 49(1), 110–126. <https://doi.org/10.1002/ejsp.2508>
- Priestley, M., Broglia, E., Hughes, G., & Spanner, L. (2021). Student perspectives on improving mental health support services at university. *Counselling and Psychotherapy Research*, 22(1), 197–206. <https://doi.org/10.1002/capr.12391>
- Proyer, R. T., Gander, F., Wellenzohn, S., & Ruch, W. (2014). Positive psychology interventions in people aged 50–79 years: Long-term effects of placebo-controlled online interventions on well-being and depression. *Aging & Mental Health*, 18(8), 997–1005. <https://doi.org/10.1080/13607863.2014.899978>
- Przybylko, G., Morton, D. P., Morton, J. K., Renfrew, M. E., & Hinze, J. (2022). An interdisciplinary mental wellbeing intervention for increasing flourishing: Two experimental studies. *The Journal of Positive Psychology*, 17(4), 573–588.
<https://doi.org/10.1080/17439760.2021.1897868>
- Raunic, A., & Xenos, S. (2008). University counselling service utilisation by local and international students and user characteristics: A review. *International Journal for the Advancement of Counselling*, 30(4), 262–267.
<https://doi.org/10.1007/s10447-008-9062-0>

- Raymond, I., Iasiello, M., Kelly, D., & Jarden, A. (2019). Program logic modelling and complex positive psychology intervention design and implementation: The “resilient futures” case example. *International Journal of Applied Positive Psychology*, 3(1), 43–67. <https://doi.org/10.1007/s41042-019-00014-7>
- Reed, D. A., Shanafelt, T. D., Satele, D. W., Power, D. V., Eacker, A., Harper, W., Moutier, C., Durning, S., Massie, F. S. J., Thomas, M. R., Sloan, J. A., & Dyrbye, L. N. (2011). Relationship of pass/fail grading and curriculum structure with well-being among preclinical medical students: A multi-institutional study. *Academic Medicine*, 86(11), 1367–1373. <https://doi.org/10.1097/ACM.0b013e3182305d81>
- Regehr, C., Glancy, D., & Pitts, A. (2013). Interventions to reduce stress in university students: A review and meta-analysis. *Journal of Affective Disorders*, 148(1), 1–11. <https://doi.org/10.1016/j.jad.2012.11.026>
- Reis, H. T., & Le, J. D. V. (2023). Perceived partner responsiveness and wellbeing. In E. Rieger, R. Costanza, I. Kubiszewski, & P. Dugdale (Eds.), *Toward an integrated science of wellbeing*. Oxford University Press.
- Rich, G. J. (2011). Teaching tools for positive psychology: A comparison of available textbooks. *The Journal of Positive Psychology*, 6(6), 492–498. <https://doi.org/10.1080/17439760.2011.634824>
- Richardson, T., Elliott, P., Roberts, R., & Jansen, M. (2017). A longitudinal study of financial difficulties and mental health in a national sample of British undergraduate students. *Community Mental Health Journal*, 53(3), 344–352. <https://doi.org/10.1007/s10597-016-0052-0>

- Riedel, R., Vialle, W., Pearson, P., & Oades, L. G. (2020). Quality learning and positive education practice: The student experience of learning in a school-wide approach to positive education. *International Journal of Applied Positive Psychology*, 5(1), 53–75. <https://doi.org/10.1007/s41042-020-00029-5>
- Rieger, E., Costanza, R., Kubiszewski, I., Dugdale, P., Rieger, E., Costanza, R., Kubiszewski, I., & Dugdale, P. (Eds.). (2023). *Toward an integrated science of wellbeing*. Oxford University Press.
- Robertson, A., Mulcahy, E. & Baars, S. (2022). What works to tackle mental health inequalities in higher education? The Centre for Transforming Access and Student Outcomes in Higher Education (TASO). <https://taso.org.uk/student-mental-health-hub/project-resources/>
- Rogers, C. R. (1995). *On becoming a person: A therapist's view of psychotherapy*. Houghton Mifflin Harcourt.
- Roos, B. H., & Borkoski, C. C. (2021). Attending to the teacher in the teaching: Prioritizing faculty well-being. *Perspectives of the ASHA Special Interest Groups*, 6(4), 831-840. https://doi.org/10.1044/2021_PERSP-21-00006
- Rose, G. A., Khaw, K.-T., & Marmot, M. (2008). *Rose's strategy of preventive medicine: The complete original text*. Oxford University Press.
- Rosenbaum, S. E. (1990). Epicurus on pleasure and the complete life. *The Monist*, 73(1), 21–41. <https://www.jstor.org/stable/27903167>
- Ruini, C., & Fava, G. A. (2012). Role of well-being therapy in achieving a balanced and individualized path to optimal functioning. *Clinical Psychology & Psychotherapy*, 19(4), 291–304. <https://doi.org/10.1002/cpp.1796>

- Ruini, C., & Mortara, C. C. (2022). Writing technique across psychotherapies—From traditional expressive writing to new positive psychology interventions: A narrative review. *Journal of Contemporary Psychotherapy*, 52(1), 23–34.
<https://doi.org/10.1007/s10879-021-09520-9>
- Ruini, C., & Ryff, C. D. (2016). Using eudaimonic well-being to improve lives. In A. M. Wood & J. Johnson (Eds.), *The Wiley handbook of positive clinical psychology* (pp. 153–166). John Wiley & Sons, Incorporated.
<http://ebookcentral.proquest.com/lib/anu/detail.action?docID=4513033>
- Rusk, R. D., & Waters, L. E. (2013). Tracing the size, reach, impact, and breadth of positive psychology. *The Journal of Positive Psychology*, 8(3), 207–221.
<https://doi.org/10.1080/17439760.2013.777766>
- Russo-Netzer, P., & Ben-Shahar, T. (2011). “Learning from success”: A close look at a popular positive psychology course. *The Journal of Positive Psychology*, 6(6), 468–476. <https://doi.org/10.1080/17439760.2011.634823>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/110003-066X.55.1.68>
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52(1), 141–166. <https://doi.org/10.1146/annurev.psych.52.1.141>
- Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory perspective on eudaimonia. *Journal of Happiness Studies*, 9(1), 139–170.
<https://doi.org/10.1007/s10902-006-9023-4>

- Ryan, T., Baik, C., & Larcombe, W. (2021). How can universities better support the mental wellbeing of higher degree research students? A study of students' suggestions. *Higher Education Research & Development*, 41(3), 867–881.
<https://doi.org/10.1080/07294360.2021.1874886>
- Ryff, C. D. (1989a). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful ageing. *International Journal of Behavioral Development*, 12(1), 35–55. <https://doi.org/10.1177/016502548901200102>
- Ryff, C. D. (1989b). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081. <https://doi.org/10.1037/0022-3514.57.6.1069>
- Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, 83(1), 10–28.
<https://doi.org/10.1159/000353263>
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719–727.
<https://doi.org/10.1037/0022-3514.69.4.719>
- Ryff, C. D., Lee, Y. H., Essex, M. J., & Schmutte, P. S. (1994). My children and me: Midlife evaluations of grown children and of self. *Psychology and Aging*, 9(2), 195–205. <https://doi.org/10.1037/0882-7974.9.2.195>
- Sabouripour, F., Roslan, S., Ghiami, Z., & Memon, M. A. (2021). Mediating role of self-efficacy in the relationship between optimism, psychological well-being, and resilience among iranian students. *Frontiers in Psychology*, 12, 675645.
<https://doi.org/10.3389/fpsyg.2021.675645>

- Said, D., Kypri, K., & Bowman, J. (2013). Risk factors for mental disorder among university students in Australia: Findings from a web-based cross-sectional survey. *Social Psychiatry and Psychiatric Epidemiology*, 48(6), 935–944. <https://doi.org/10.1007/s00127-012-0574-x>
- Sampson, K., Priestley, M., Dodd, A. L., Broglia, E., Wykes, T., Robotham, D., Tyrrell, K., Vega, M. O., & Byrom, N. C. (2022). Key questions: Research priorities for student mental health. *BJPsych Open*, 8(3), e90. <https://doi.org/10.1192/bjo.2022.61>
- Sanci, L., Williams, I., Russell, M., Chondros, P., Duncan, A.-M., Tarzia, L., Peter, D., Lim, M. S. Y., Tomy, A., & Minas, H. (2022). Towards a health promoting university: Descriptive findings on health, wellbeing and academic performance amongst university students in Australia. *BMC Public Health*, 22(1), 2430. <https://doi.org/10.1186/s12889-022-14690-9>
- Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. H. (2015). Greater number of group identifications is associated with lower odds of being depressed: Evidence from a Scottish community sample. *Social Psychiatry and Psychiatric Epidemiology*, 50(9), 1389–1397. <https://doi.org/10.1007/s00127-015-1076-4>
- Schueler, S. M., & Parks, A. C. (2014). The science of self-help. *European Psychologist*, 19(2), 145–155. <https://doi.org/10.1027/1016-9040/a000181>
- Schulenberg, J. E., Bryant, A. L., & O'malley, P. M. (2004). Taking hold of some kind of life: How developmental tasks relate to trajectories of well-being during the transition to adulthood. *Development and Psychopathology*, 16(4), 1119–1140. <https://doi.org/10.1017/S0954579404040167>

- Schutte, N. S., & Malouff, J. M. (2019). The impact of signature character strengths interventions: A meta-analysis. *Journal of Happiness Studies*, 20(4), 1179–1196. <https://doi.org/10.1007/s10902-018-9990-2>
- Scorsolini-Comin, F., Fontaine, A. M. G. V., Koller, S. H., & Santos, M. A. dos. (2013). From authentic happiness to well-being: The flourishing of positive psychology. *Psicologia: Reflexão e Crítica*, 26(4), 663–670. <https://doi.org/10.1590/S0102-79722013000400006>
- Seligman, M., & Adler, A. (2019). Positive education. In J. F. Helliwell, R. Layard, & J. Sachs (Eds.), *Global happiness and wellbeing policy report: 2019*. (Pp. 52–71). Global Council for Wellbeing and Happiness.
- Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. Simon and Schuster.
- Seligman, M. E. P. (2004). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. Simon and Schuster.
- Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5–14. <https://doi.org/10.1037//0003-066X.55.1.5>
- Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education*, 35(3), 293–311. <https://doi.org/10.1080/03054980902934563>

- Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist*, 60(5), 410–421. <https://doi.org/10.1037/0003-066X.60.5.410>
- Senf, K., & Liao, A. K. (2013). The effects of positive interventions on happiness and depressive symptoms, with an examination of personality as a moderator. *Journal of Happiness Studies*, 14(2), 591–612. <https://doi.org/10.1007/s10902-012-9344-4>
- Seppälä, E. M., Bradley, C., Moeller, J., Harouni, L., Nandamudi, D., & Brackett, M. A. (2020). Promoting mental health and psychological thriving in university students: A randomized controlled trial of three well-being interventions. *Frontiers in Psychiatry*, 11, 590. <https://doi.org/10.3389/fpsyt.2020.00590>
- Sharp, J., & Theiler, S. (2018). A Review of psychological distress among university students: Pervasiveness, implications and potential points of intervention. *International Journal for the Advancement of Counselling*, 40(3), 193–212. <https://doi.org/10.1007/s10447-018-9321-7>
- Shek, D. T. L. (2012). Development of a positive youth development subject in a university context in Hong Kong. *International Journal on Disability and Human Development*, 11(3), 173–179. <https://doi.org/10.1515/ijdhhd-2012-0036>
- Sheldon, E., Simmonds-Buckley, M., Bone, C., Mascarenhas, T., Chan, N., Wincott, M., Gleeson, H., Sow, K., Hind, D., & Barkham, M. (2021). Prevalence and risk factors for mental health problems in university undergraduate students: A systematic review with meta-analysis. *Journal of Affective Disorders*, 287, 282–292. <https://doi.org/10.1016/j.jad.2021.03.054>

- Sheldon, K. M., Kashdan, T. B., & Steger, M. F. (2010). *Designing positive psychology: Taking stock and moving forward*. Oxford University Press.
- Sheldon, K. M., & Lyubomirsky, S. (2019). Revisiting the sustainable happiness model and pie chart: Can happiness be successfully pursued? *The Journal of Positive Psychology, 16*(2), 1–10. <https://doi.org/10.1080/17439760.2019.1689421>
- Shimmer, D. (2018, January 26). Yale's most popular class ever: Happiness—The New York Times. *New York Times*.
<https://www.nytimes.com/2018/01/26/nyregion/at-yale-class-on-happiness-draws-huge-crowd-laurie-santos.html>
- Shrivastava, A., Azhar, H., & Hyland, L. (2022). A personal journey of studying positive psychology: Reflections of undergraduate students in the United Arab Emirates. *Teaching of Psychology, 1*–11.
<https://doi.org/10.1177/00986283221106689>
- Shryock, S., & Meeks, S. (2018). Internal consistency and factorial validity of the 42-item psychological wellbeing scales. *Innovation in Aging, 2*(Suppl 1), 690–691.
<https://doi.org/10.1093/geroni/igy023.2568>
- Siddiqui, S. (2015). Impact of self-efficacy on psychological well-being among undergraduate students. *International Journal of Indian Psychology, 2*(3), 5–16.
<https://doi.org/10.25215/0203.040>
- Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology, 65*(5), 467–487.
<https://doi.org/10.1002/jclp.20593>

- Slemp, G. R., Chin, T.-C., Kern, M. L., Siokou, C., Loton, D., Oades, L. G., Vella-Brodrick, D., & Waters, L. (2017). Positive education in Australia: Practice, measurement, and future directions. In E. Frydenberg, A. J. Martin, & R. J. Collie (Eds.), *Social and emotional learning in Australia and the Asia-Pacific: Perspectives, programs and approaches* (pp. 101–122). Springer.
https://doi.org/10.1007/978-981-10-3394-0_6
- Smith, B. W., deCruz-Dixon, N., Erickson, K., Guzman, A., Phan, A., & Schodt, K. (2023). The effects of an online positive psychology course on happiness, health, and well-being. *Journal of Happiness Studies*, 24(3), 1145–1167.
<https://doi.org/10.1007/s10902-022-00577-4>
- Smith, B. W., Ford, G. C., Erickson, K., & Guzman, A. (2021). The effects of a character strength focused positive psychology course on undergraduate happiness and well-being. *Journal of Happiness Studies*, 22, 343–362.
<https://doi.org/10.1007/s10902-020-00233-9>
- Smith, C. D., & Baik, C. (2019). High-impact teaching practices in higher education: A best evidence review. *Studies in Higher Education*, 46(8), 1696–1713.
<https://doi.org/10.1080/03075079.2019.1698539>
- Smith, J. A. (1996). Beyond the divide between cognition and discourse: Using interpretative phenomenological analysis in health psychology. *Psychology & Health*, 11(2), 261–271. <https://doi.org/10.1080/08870449608400256>
- Smith, J. L., Harrison, P. R., Kurtz, J. L., & Bryant, F. B. (2014). Nurturing the capacity to savor: Interventions to enhance the enjoyment of positive experiences. In A. C. Parks & S. M. Schueller (Eds.), *The Wiley Blackwell handbook of positive*

- psychological interventions* (pp. 42–65). John Wiley & Sons, Ltd.
<https://doi.org/10.1002/9781118315927.ch3>
- Smithies, D., & Byrom, N. C. (2018). *LGBTQ+ Student Mental health: The challenges and needs of gender, sexual and romantic minorities in higher education*. Student Minds.
https://kclpure.kcl.ac.uk/portal/files/100803354/lgbtq_report_final.pdf
- Soini, T., Pyhältö, K., & Pietarinen, J. (2010). Pedagogical well-being: Reflecting learning and well-being in teachers' work. *Teachers and Teaching*, 16(6), 735–751. <https://doi.org/10.1080/13540602.2010.517690>
- Sollis, K. (2023). *What matters to people throughout the world and why should we care? Participatory wellbeing frameworks, applications, and impact* (Publication No. 30563192) [Doctoral dissertation, The Australian National University]. ProQuest Dissertations Publishing. <https://openresearch-repository.anu.edu.au/handle/1885/292034>
- Solmi, M., Radua, J., Olivola, M., Croce, E., Soardo, L., Salazar de Pablo, G., Il Shin, J., Kirkbride, J. B., Jones, P., Kim, J. H., Kim, J. Y., Carvalho, A. F., Seeman, M. V., Correll, C. U., & Fusar-Poli, P. (2022). Age at onset of mental disorders worldwide: Large-scale meta-analysis of 192 epidemiological studies. *Molecular Psychiatry*, 27(1), 281–295. <https://doi.org/10.1038/s41380-021-01161-7>
- Springer, K. W., Pudrovskaya, T., & Hauser, R. M. (2011). Does psychological well-being change with age? Longitudinal tests of age variations and further exploration of the multidimensionality of Ryff's model of psychological well-being. *Social*

- Science Research*, 40(1), 392–398.
<https://doi.org/10.1016/j.ssresearch.2010.05.008>
- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45(4), 249–257.
<https://doi.org/10.1080/00050067.2010.482109>
- Stallman, H. M. (2012). University counselling services in Australia and New Zealand: Activities, changes, and challenges. *Australian Psychologist*, 47(4), 249–253.
<https://doi.org/10.1111/j.1742-9544.2011.00023.x>
- Stallman, H. M., & Shochet, I. (2009). Prevalence of mental health problems in Australian university health services. *Australian Psychologist*, 44(2), 122–127.
<https://doi.org/10.1080/00050060902733727>
- Stanton, A., Zandvliet, D., Dhaliwal, R., & Black, T. (2016). Understanding students' experiences of well-being in learning environments. *Higher Education Studies*, 6(3), 90–99. <http://dx.doi.org/10.5539/hes.v6n3p90>
- Steffens, N. K., LaRue, C. J., Haslam, C., Walter, Z. C., Cruwys, T., Munt, K. A., Haslam, S. A., Jetten, J., & Tarrant, M. (2021). Social identification-building interventions to improve health: A systematic review and meta-analysis. *Health Psychology Review*, 15(1), 85–112.
<https://doi.org/10.1080/17437199.2019.1669481>
- Stojmenovska, D. (2023). Gender differences in job resources and strains in authority positions. *Gender & Society*, 37(2), 240–267.
<https://doi.org/10.1177/08912432231159334>
- Stoll, L. (2014). A short history of wellbeing research. In D. McDaid & C. L. Cooper (Eds.), *Introduction to wellbeing: A complete reference guide*. John Wiley &

- Sons. <https://learning.oreilly.com/library/view/wellbeing-a-complete/9781118716281/9781118716281c02.xhtml>
- Stoll, N., Yalipende, Y., Byrom, N. C., Hatch, S. L., & Lempp, H. (2022). Mental health and mental well-being of Black students at UK universities: A review and thematic synthesis. *BMJ Open*, 12(2), e050720. <https://doi.org/10.1136/bmjopen-2021-050720>
- Storrie, K., Ahern, K., & Tuckett, A. (2010). A systematic review: Students with mental health problems—A growing problem. *International Journal of Nursing Practice*, 16(1), 1–6. <https://doi.org/10.1111/j.1440-172X.2009.01813.x>
- Suárez-Reyes, M., & Van den Broucke, S. (2016). Implementing the health promoting university approach in culturally different contexts: A systematic review. *Global Health Promotion*, 23(1 Suppl), 46–56. <https://doi.org/10.1177/1757975915623933>
- Tabachnick, B., & Fidell, L. (2018). *Using multivariate statistics* (7th edition). Pearson.
- Tajfel, H., & Turner, J. (2001). An integrative theory of intergroup conflict. In M. A. Hogg & D. Abrams (Eds.), *Intergroup relations: Essential readings* (pp. 94–109). Psychology Press.
- Tajfel, H., & Turner, J. C. (1986). An integrative theory of intergroup conflict. In M. J. Hatch & M. Schultz (Eds.), *Organisational Identity: A Reader* (pp. 56–65). Oxford University Press.
- Taylor, D. (2020). Reflective practice in the art and science of counselling: A scoping review. *Psychotherapy and Counselling Journal of Australia*, 8(1), 1–15. <https://pacja.org.au/2020/08/reflective-practice-in-the-art-and-science-of-counselling-a-scoping-review-2/>

- Taylor, P., Saheb, R., & Howse, E. (2019). Creating healthier graduates, campuses and communities: Why Australia needs to invest in health promoting universities. *Health Promotion Journal of Australia*, 30(2), 285–289.
<https://doi.org/10.1002/hpja.175>
- Tejada-Gallardo, C., Blasco-Belled, A., Torrelles-Nadal, C., & Alsinet, C. (2020). Effects of school-based multicomponent positive psychology interventions on well-being and distress in adolescents: A systematic review and meta-analysis. *Journal of Youth and Adolescence*, 49(10), 1943–1960.
<https://doi.org/10.1007/s10964-020-01289-9>
- Tengland, P.-A. (2001). Marie Jahoda's current concepts of positive mental health. In P.-A. Tengland (Ed.), *Mental health: A philosophical analysis* (pp. 47–78). Springer Netherlands. https://doi.org/10.1007/978-94-017-2237-7_4
- Thoen, M. A., & Robitschek, C. (2013). Intentional growth training: Developing an intervention to increase personal growth initiative. *Applied Psychology: Health and Well-Being*, 5(2), 149–170. <https://doi.org/10.1111/aphw.12001>
- Thompson, R. B., Peura, C., & Gayton, W. F. (2015). Gender differences in the person-activity fit for positive psychology interventions. *The Journal of Positive Psychology*, 10(2), 179–183. <https://doi.org/10.1080/17439760.2014.927908>
- Thorley, C. (2017). *Not by degrees: Improving student mental health in the UK's universities*. Institute for Public Policy Research.
<http://www.ippr.org/research/publications/not-by-degrees>
- Toit, A. du, Thomson, R., & Page, A. (2022). A systematic review and meta-analysis of longitudinal studies of the antecedents and consequences of wellbeing among

- university students. *International Journal of Wellbeing*, 12(2), 163–206.
<https://doi.org/10.5502/ijw.v12i2.1897>
- Tong, L., Reynolds, K., Lee, E., & Liu, Y. (2019). School relational climate, social identity, and student well-being: New evidence from China on student depression and stress levels. *School Mental Health*, 11(3), 509–521.
<https://doi.org/10.1007/s12310-018-9293-0>
- Toombs, M., & Gorman, D. (2011). Mental health and indigenous university students. *Aboriginal and Islander Health Worker Journal*, 35(4), 22–24.
<https://doi.org/10.3316/informit.357953306265166>
- Trompetter, H. R., de Kleine, E., & Bohlmeijer, E. T. (2017). Why does positive mental health buffer against psychopathology? An exploratory study on self-compassion as a resilience mechanism and adaptive emotion regulation strategy. *Cognitive Therapy and Research*, 41(3), 459–468.
<https://doi.org/10.1007/s10608-016-9774-0>
- Tsouros, A. D., Dowding, G., Thompson, J., & Dooris, M. (Eds.). (1998). *Health promoting universities: Concept, experience and framework for action*. World Health Organization.
- Tudor, K. (1996). *Mental health promotion: Paradigms and practice*. Routledge.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.
- Upsher, R., Nobili, A., Hughes, G., & Byrom, N. (2022). A systematic review of interventions embedded in curriculum to improve university student wellbeing. *Educational Research Review*, 37, 100464.
<https://doi.org/10.1016/j.edurev.2022.100464>

- Upsher, R., Percy, Z., Cappiello, L., Byrom, N., Hughes, G., Oates, J., Nobili, A., Rakow, K., Anaukwu, C., & Foster, J. (2022). Understanding how the university curriculum impacts student wellbeing: A qualitative study. *Higher Education*, 86(5), 1213-1232. <https://doi.org/10.1007/s10734-022-00969-8>
- van Dierendonck, D. (2004). The construct validity of Ryff's scales of psychological Well-being and its extension with spiritual well-being. *Personality and Individual Differences*, 36(3), 629-643. [https://doi.org/10.1016/S0191-8869\(03\)00122-3](https://doi.org/10.1016/S0191-8869(03)00122-3)
- Van Petegem, K., Aelterman, A., Rosseel, Y., & Creemers, B. (2007). Student perception as moderator for student wellbeing. *Social Indicators Research*, 83(3), 447-463. <https://doi.org/10.1007/s11205-006-9055-5>
- Van Zyl, L. E., Efendic, E., Rothmann, S., & Shankland, R. (2019). Best-practice guidelines for positive psychological intervention research design. In L. E. Van Zyl & S. Rothmann Sr. (Eds.), *Positive psychological intervention design and protocols for multi-cultural contexts* (pp. 1-32). Springer International Publishing. https://doi.org/10.1007/978-3-030-20020-6_1
- van Zyl, L. E., Gaffaney, J., van der Vaart, L., Dik, B. J., & Donaldson, S. I. (2023). The critiques and criticisms of positive psychology: A systematic review. *The Journal of Positive Psychology*, 1-30. <https://doi.org/10.1080/17439760.2023.2178956>
- Van Zyl, L. E., & Rothmann, S. (2012). Beyond smiling: The evaluation of a positive psychological intervention aimed at student happiness. *Journal of Psychology in Africa*, 22(3), 369-384. <https://doi.org/10.1080/14330237.2012.10820541>

- VanderWeele, T. J., Trudel-Fitzgerald, C., Allin, P., Farrelly, C., Fletcher, G., Frederick, D. E., Hall, J., Helliwell, J. F., Kim, E. S., Lauinger, W. A., Lee, M. T., Lyubomirsky, S., Margolis, S., McNeely, E., Messer, N., Tay, L., Viswanath, V., Węziak-Białowolska, D., & Kubzansky, L. D. (2020). Current recommendations on the selection of measures for well-being. *Preventive Medicine, 133*, 106004. <https://doi.org/10.1016/j.ypmed.2020.106004>
- Vella-Brodrick, D. A. (2011). The moral of the story: The importance of applying an ethics lens to the teaching of positive psychology. *The Journal of Positive Psychology, 6*(4), 320–325. <https://doi.org/10.1080/17439760.2011.580773>
- Vella-Brodrick, D., Patrick, K., Jacques-Hamilton, R., Ng, A., Chin, T.-C., O'Connor, M., Rickard, N., Cross, D., & Hattie, J. (2023). Youth experiences of co-designing a well-being intervention: Reflections, learnings and recommendations. *Oxford Review of Education, 49*(6), 838–857. <https://doi.org/10.1080/03054985.2023.2194621>
- Wasserstein, R. L., Schirm, A. L., & Lazar, N. A. (2019). Moving to a world beyond “ $p < 0.05$.” *The American Statistician, 73*(S1), 1–19. <https://doi.org/10.1080/00031305.2019.1583913>
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*(4), 678–691. <https://doi.org/10.1037/0022-3514.64.4.678>
- Waters, L. (2011). A review of school-based positive psychology interventions. *The Educational and Developmental Psychologist, 28*(2), 75–90. <https://doi.org/10.1375/aedp.28.2.75>

- Waters, L., & White, M. (2015). Case study of a school wellbeing initiative: Using appreciative inquiry to support positive change. *International Journal of Wellbeing*, 5(1), 19–32. <https://doi.org/10.5502/ijw.v5i1.2>
- Watts, J., & Robertson, N. (2011). Burnout in university teaching staff: A systematic literature review. *Educational Research*, 53(1), 33–50. <https://doi.org/10.1080/00131881.2011.552235>
- Weiss, L. A., Westerhof, G. J., & Bohlmeijer, E. T. (2016). Can we increase psychological well-being? The effects of interventions on psychological well-being: A meta-analysis of randomized controlled trials. *PLOS ONE*, 11(6), 1–16. <https://doi.org/10.1371/journal.pone.0158092>
- West, B. T. (2009). Analyzing longitudinal data with the linear mixed models procedure in SPSS. *Evaluation & the Health Professions*, 32(3), 207–228. <https://doi.org/10.1177/0163278709338554>
- White, C. A., Uttl, B., & Holder, M. D. (2019). Meta-analyses of positive psychology interventions: The effects are much smaller than previously reported. *PLOS ONE*, 14(5), 1–48. <https://doi.org/10.1371/journal.pone.0216588>
- Wilks, J., & Wilson, K. (2012). Going on to uni? Access and participation in university for students from backgrounds of disadvantage. *Journal of Higher Education Policy and Management*, 34(1), 79–90. <https://doi.org/10.1080/1360080X.2012.642335>
- Williams, M., Coare, P., Marvell, R. A., Pollard, E., Houghton, A.-M., & Anderson, J. (2015). *Understanding provision for students with mental health problems and intensive support needs*. The Institute for Employment Studies (IES) and

- Researching Equity, Access and Participation (REAP). Institute for Employment Studies. <http://hdl.voced.edu.au/10707/377722>
- Winefield, H. R., Gill, T. K., Taylor, A. W., & Pilkington, R. M. (2012). Psychological well-being and psychological distress: Is it necessary to measure both? *Psychology of Well-Being: Theory, Research and Practice*, 2(1), 3. <https://doi.org/10.1186/2211-1522-2-3>
- Winzer, R., Lindberg, L., Guldbrandsson, K., & Sidorchuk, A. (2018). Effects of mental health interventions for students in higher education are sustainable over time: A systematic review and meta-analysis of randomized controlled trials. *PeerJ*, 6, e4598. <https://doi.org/10.7717/peerj.4598>
- Wissing, M. P. (2022). Beyond the “Third wave of positive psychology”: Challenges and opportunities for future research. *Frontiers in Psychology*, 12, 795067. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.795067>
- Wood, A. M., & Joseph, S. (2010). The absence of positive psychological (eudemonic) well-being as a risk factor for depression: A ten year cohort study. *Journal of Affective Disorders*, 122(3), 213–217. <https://doi.org/10.1016/j.jad.2009.06.032>
- World Health Organisation. (2021). *Comprehensive mental health action plan 2013–2030*. <https://www.who.int/publications-detail-redirect/9789240031029>
- World Health Organization. (1992). *International statistical classification of diseases and related health problems* (10th ed.).
- Worsley, J. D., Pennington, A., & Corcoran, R. (2022). Supporting mental health and wellbeing of university and college students: A systematic review of review-level evidence of interventions. *PLOS ONE*, 17(7), e0266725. <https://doi.org/10.1371/journal.pone.0266725>

- Wu, D., Yu, L., Yang, T., Cottrell, R., Peng, S., Guo, W., & Jiang, S. (2020). The impacts of uncertainty stress on mental disorders of Chinese college students: Evidence from a nationwide study. *Frontiers in Psychology, 11*, 243. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00243>
- Wyatt, T., & Oswalt, S. B. (2013). Comparing mental health issues among undergraduate and graduate students. *American Journal of Health Education, 44*(2), 96–107. <https://doi.org/10.1080/19325037.2013.764248>
- Wyn, J., Cahill, H., Holdsworth, R., Rowling, L., & Carson, S. (2000). MindMatters, a whole-school approach promoting mental health and wellbeing. *Australian & New Zealand Journal of Psychiatry, 34*(4), 594–601. <https://doi.org/10.1080/j.1440-1614.2000.00748.x>
- Yaden, D. B., Claydon, J., Bathgate, M., Platt, B., & Santos, L. R. (2021). Teaching well-being at scale: An intervention study. *PLOS ONE, 16*(4), 1–10. <https://doi.org/10.1371/journal.pone.0249193>
- Young, T., Macinnes, S., Jarden, A., & Colla, R. (2022). The impact of a wellbeing program imbedded in university classes: The importance of valuing happiness, baseline wellbeing and practice frequency. *Studies in Higher Education, 47*(4), 751–770. <https://doi.org/10.1080/03075079.2020.1793932>
- Zhang, X. Q., Zhang, B. S., and Wang, M. D. (2020). Application of a classroom-based positive psychology education course for Chinese medical students to increase their psychological well-being: A pilot study. *BMC Med. Educ. 20*:323. <https://doi.org/10.1186/s12909-020-02232-z>

List of Appendices

- Appendix A. Study 1 Measures
- Appendix B. Study 1 Template for Intervention Description and Replication
- Appendix C. Study 1 Ethics Documentation
- Appendix D. Cohort Effects
- Appendix E. Drop-out Effects
- Appendix F. Tests of Fixed Effects for Predictors over Time Models
- Appendix G. Tests of Fixed Effects for Interaction and Moderation Models
- Appendix H. Pairwise Comparisons between Courses
- Appendix I. Pairwise Comparisons over Time
- Appendix J. Study 2 Ethics Documentation
- Appendix k. Study 2 Focus Group Questions

Appendix A: Study 1 Measures

Demographics Questionnaire

1. **What is your age?** Please select from list
2. What is your sex:
 - Male
 - Female
 - Other
3. **Marital Status:** What is your current marital status?
 - Single (never married)
 - Married (common-law)
 - Separated
 - Divorced
 - Widowed
4. What course(s) are you currently enrolled in? (e.g. PSYC1005)
5. To which ANU academic college do you belong?
 - College of Arts and Social Sciences
 - College of Asia and the Pacific
 - College of Business and Economics
 - College of Engineering and Computer Science
 - College of Health and Medicine
 - ANU College of Law
 - College of Science
6. What is the highest level of education that you have completed?
 - Secondary School (Year 7 to 10)

- College (Year 11 and 12)
- Undergraduate Degree
- Masters Degree
- Doctoral Degree

7. What is your main occupation:

- Student
- Other, please specify: ____

8. **Where were you born?** Please select from list

9. What is your race: What is your race?

- Caucasian/White, e.g., British, Irish, Scottish, Welsh
- Aboriginal Australian or Torres Strait Islander
- Pacific Islander, e.g., New Zealand Maori, Hawaii, Guam, Tonga, Samoa, Fiji
- Black, e.g., African, Caribbean
- East Asian, e.g., Chinese, Japanese, Vietnamese
- South Asian, e.g., Indian, Pakistani, Bangladeshi
- Other, please specify: ____

10. Do you identify as religious? *Please select* – Yes or No

If yes, please select from list

11. Have you been diagnosed with a mental health condition?

Please select – Yes or No

If yes

What condition were you diagnosed with? _____

In what year was the condition diagnosed? _____

Are you currently receiving psychological treatment? Yes or No

Have you previously received psychological treatment? Yes or No

12. Have you been diagnosed with a physical health condition?

Please select – Yes or No

If yes

What condition were you diagnosed with? _____

In what year was the condition diagnosed? _____

Are you currently receiving treatment? Yes or No

Have you previously received treatment? Yes or No

Psychological Well-being Scale (Ryff & Keyes, 1995)

Instructions: Please indicate how much you agree or disagree with the following sentences.

Answer Format:

Strongly agree = 1

Somewhat agree = 2

A little agree = 3

Either agree or disagree = 4

A little disagree = 5

Somewhat disagree = 6

Strongly disagree = 7

1. I like most parts of my personality.
2. When I look at the story of my life, I am pleased with how things have turned out so far.
3. Some people wander aimlessly through life, but I am not one of them.
4. The demands of everyday life often get me down.
5. In many ways I feel disappointed about my achievements in life.
6. Maintaining close relationships has been difficult and frustrating for me.
7. I live life one day at a time and don't really think about the future.
8. In general, I feel I am in charge of the situation in which I live.
9. I am good at managing the responsibilities of daily life.
10. I sometimes feel as if I've done all there is to do in life.
11. For me, life has been a continuous process of learning, changing, and growth.

12. I think it is important to have new experiences that challenge how I think about myself and the world.
13. People would describe me as a giving person, willing to share my time with others.
14. I gave up trying to make big improvements or changes in my life a long time ago.
15. I tend to be influenced by people with strong opinions.
16. I have not experienced many warm and trusting relationships with others.
17. I have confidence in my own opinions, even if they are different from the way most other people think.
18. I judge myself by what I think is important, not by the values of what others think is important.

Kessler Psychological Distress Scale (Kessler et al., 2002)

Instruction: Please select the appropriate response.

Answer Format:

All of the time = 5

Most of the time = 4

Some of the time = 3

A little of the time = 2

None of the time = 1

1. In the past 4 weeks, about how often did you feel tired out for no good reason?
2. In the past 4 weeks, about how often did you feel nervous?
3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?
4. In the past 4 weeks, about how often did you feel hopeless?
5. In the past 4 weeks, about how often did you feel restless or fidgety?
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?
7. In the past 4 weeks, about how often did you feel depressed?
8. In the past 4 weeks, about how often did you feel that everything was an effort?
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?
10. In the past 4 weeks, about how often did you feel worthless?

Depression Anxiety Stress Scale 21 (Lovibond & Lovibond, 1995)

Instruction: Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

Answer Format:

- 0 Did not apply to me at all
 - 1 Applied to me to some degree, or some of the time
 - 2 Applied to me to a considerable degree, or a good part of time
 - 3 Applied to me very much, or most of the time
-
- 1. I found it hard to wind down.
 - 2. I was aware of dryness of my mouth.
 - 3. I couldn't seem to experience any positive feeling at all.
 - 4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion).
 - 5. I found it difficult to work up the initiative to do things.
 - 6. I tended to over-react to situations.
 - 7. I experienced trembling (e.g. in the hands).
 - 8. I felt that I was using a lot of nervous energy.
 - 9. I was worried about situations in which I might panic and make a fool of myself.
 - 10. I felt that I had nothing to look forward to.
 - 11. I found myself getting agitated.
 - 12. I found it difficult to relax.
 - 13. I felt down-hearted and blue.

14. I was intolerant of anything that kept me from getting on with what I was doing.
15. I felt I was close to panic.
16. I was unable to become enthusiastic about anything.
17. I felt I wasn't worth much as a person.
18. I felt that I was rather touchy.
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat).
20. I felt scared without any good reason.
21. I felt that life was meaningless.

Social Identification Measure (Doosje et al., 1995)

Instruction: Indicate the extent to which you agree with the following statements.

Answer Format: 1-7 from “do not agree at all” to “agree completely”.

1. I identify with other ANU students.
2. I see myself as an ANU student.
3. I am glad to be an ANU student.
4. I feel strong ties with ANU students.

The Mini-International Personality Item Pool (Donnellan et al., 2006)

Instruction: Indicate the extent to which you agree with the following statements.

Answer Format: 1 = “very inaccurate” to 7 = “very accurate”.

1. I am the life of the party.
2. I sympathize with others' feelings.
3. I get chores done right away.
4. I have frequent mood swings.
5. I have a vivid imagination.
6. I don't talk a lot.
7. I am not interested in other people's problems.
8. I often forget to put things back in their proper place.
9. I am relaxed most of the time.
10. I am not interested in abstract ideas.
11. I talk to a lot of different people at parties.
12. I feel others' emotions.
13. I like order.
14. I get upset easily.
15. I have difficulty understanding abstract ideas.
16. I keep in the background.
17. I am not really interested in others.
18. I make a mess of things.
19. I seldom feel blue.
20. I do not have a good imagination.

The Balanced Inventory of Desirable Responding Short Form (Hart et al., 2015)

Instruction: Using the scale below as a guide, write a number beside each statement to indicate how true it is.

Answer Format: 1 = “not true” to 4 = “somewhat true” to 7 = “very true”.

1. I have not always been honest with myself.
2. I always know why I like things.
3. It's hard for me to shut off a disturbing thought.
4. I never regret my decisions.
5. I sometimes lose out on things because I can't make up my mind soon enough.
6. I am a completely rational person.
7. I am very confident of my judgments
8. I have sometimes doubted my ability as a lover.
9. I sometimes tell lies if I have to.
10. I never cover up my mistakes.
11. There have been occasions when I have taken advantage of someone.
12. I sometimes try to get even rather than forgive and forget.
13. I have said something bad about a friend behind his/her back.
14. When I hear people talking privately, I avoid listening.
15. I never take things that don't belong to me.
16. I don't gossip about other people's business.

Appendix B: Study 1 Template for Intervention Description and Replication (Hoffman et al., 2014)

Name
A positive psychology course called “<i>The Wellbeing Formula: The Science and Practice of Making a Good Life</i>” offered at the Australian National University. More information about the course can be found here: https://programsandcourses.anu.edu.au/course/psycl005
Why
Positive psychology courses typically draw on psychological theory, research evidence, and practical techniques to help students understand the factors that create flourishing individuals, communities, and societies. As a result, it has been proposed that participation in these courses may enhance students’ wellbeing.
What (materials and procedures)
The positive psychology course consisted of 12 lectures on topics determined by the PERMA model (Seligman, 2011) and the model of psychological wellbeing (Ryff, 1989b) in the following order:
- Lecture 1 – <i>Wellbeing: Myths and Evidence</i> - Lecture 2 – <i>Positive Emotions</i> - Lecture 3 – <i>Engagement</i> - Lecture 4 – <i>Relationships</i> - Lecture 5 – <i>Meaning/Purpose in Life</i> - Lecture 6 – <i>Accomplishment/Mastery</i> - Lecture 7 – <i>Self-Acceptance</i> - Lecture 8 – <i>Autonomy</i> - Lecture 9 – <i>Personal Growth</i> - Lecture 10 – <i>Physical Health and Health Behaviours</i> - Lecture 11 – <i>Societal Determinants of Wellbeing</i> - Lecture 12 – <i>Wellbeing: Integrating the Effective Ingredients</i>
The first 10 core lectures also included instruction on a positive psychology intervention or activity relevant to the topics.
- Lecture 1 – Three good things exercise - Lecture 2 – Gratitude letter - Lecture 3 – Savouring exercise - Lecture 4 – Random acts of kindness - Lecture 5 – Character strengths exercise - Lecture 6 – Goal setting task - Lecture 7 – Self-compassion letter writing exercise - Lecture 8 – Using signature strengths in new ways - Lecture 9 – Best possible selves exercises

Lecture 10 – WOOP focused on physical activity

Finally, each lecture provided a scientific paper, a popular scientific paper, and a video (e.g., a TED Talk) as additional resources.

Who provided

Lecture 1 – *Wellbeing: Myths and Evidence* by Dr Eryn Newman
 Lecture 2 – *Positive Emotions* by A/Prof and Clinical Psychologist Bruce Christensen
 Lecture 3 – *Engagement* by Prof Kate Reynolds
 Lecture 4 – *Relationships* by Dr Tegan Cruwys
 Lecture 5 – *Meaning/Purpose in Life* by and Clinical Psychologist Lisa Oxman
 Lecture 6 – *Accomplishment/Mastery* by A/Prof Kate Reynolds
 Lecture 7 – *Self-Acceptance* by A/Prof and Clinical Psychologist Liz Rieger
 Lecture 8 – *Autonomy* by A/Prof and Clinical Psychologist Amy Dawel
 Lecture 9 – *Personal Growth* by A/Prof and Clinical Psychologist Dave Pasalich
 Lecture 10 – *Physical Health and Health Behaviours* by A/Prof Rhonda Brown
 Lecture 11 – *Societal Determinants of Wellbeing* by Prof Michael Platow
 Lecture 12 – *Wellbeing: Integrating the Effective Ingredients* by Dr Eryn Newman

How

The course was delivered in-person in 2019 and online in 2020 and 2021 due to COVID-19 restrictions. The course was always delivered as a group intervention.

Where

In 2019, lectures were delivered on the Australian National University's campus in an appropriately sized lecture theatre and accessible online on the student learning portal for the course. In 2020 and 2021, lectures were delivered online via Zoom. Across the three years, there were no additional tutorials for the course.

When and how much

Each lecture was two hours in duration and held weekly on the same day and time each week for 12 weeks. Attendance was not mandatory and audio-visual recordings of the lectures were made available online for review. A new wellbeing enhancing activities was prescribed and recommended across the first 10 weeks of the course.

Tailoring

It was not planned to personalise, titrate or adapt the course. However, individual participants may have differed in their adherence to the instructions provided for each wellbeing enhancing activity and the frequency with which they used them.

Modifications

The course was modified for online delivery in 2020 and 2021 due to COVID-19 restrictions.

How well (planned and actual)

Intervention fidelity was not accounted for.

Appendix C: Study 1 Ethics Documentation

Participant Information Sheet

Dear Participant,

Before you decide to take part in this study, it is important for you to understand what your participation will involve, and what the study is about. Do please take the time to read the following information carefully and to ask any follow-up questions that will better help you to decide whether you would like to participate.

Researcher:

My name is Aflaha Khan. I am a Doctor of Philosophy (Clinical Psychology) candidate at the Research School of Psychology, College of Health and Medicine, at The Australian National University (ANU). My supervisor is Associate Professor Elizabeth Rieger.

Project Title: Investigating Changes in Wellbeing Among University Students Over Time.

General Outline of the Project:

- **Description and Methodology:** It is increasingly being recognised that university students experience elevated levels of psychological distress compared to the general population. In a survey involving two Australian universities, it was found that 83.9% of students experienced elevated levels of psychological distress (Stallman, 2010). From this proportion, 19.2% reported very high levels and 64.7% reported moderate to high levels of psychological distress. These statistics suggest that being a university student may make a person vulnerable to experiencing psychological distress and lower wellbeing. The main goal of this research project is to evaluate changes in wellbeing among university students participating in various first-year courses. To achieve this goal, students enrolled in all courses conducted by the College of Arts and Social Sciences, Health and Medicine, Science, and Engineering and Computer Sciences will be invited to complete an online Qualtrics survey at the beginning of the course, at the end of the course, and also 6 months following the end of the course. The online survey will measure your wellbeing, factors related to wellbeing, and your satisfaction with your course.
- **Participants:** We are recruiting approximately 600 participants who are willing to complete an online Qualtrics survey at three different time points.
- **Use of Data and Feedback:** All data collected from this study will be used for submission of thesis publications and possible future research. Data may also contribute to presentations at academic or clinical conferences. You may access general feedback in the form of a summary of the research via this Dropbox link https://www.dropbox.com/sh/l2h3ht2nkqp10q2/AABZowPdZbsOG58hN_8lvJ3ca?dl=0. You will also find basic information about activities that research has found to be effective for enhancing people's wellbeing.

Participant Involvement:

- **Voluntary Participation & Withdrawal:** Participation in this study is **entirely voluntary**. You are free to withdraw from the study, without penalty, at any time up until the work is prepared for publication. You do not need to offer any explanation for withdrawal. Your data will be destroyed and not used should you choose to withdraw from the study. During participation, you can refuse to answer any questions.
 - **What does participation in the research entail?** You will be asked to read through this information sheet carefully and encouraged to ask any questions via email at any time. As an important research aim of the current project is to investigate changes in student wellbeing over time, if you decide that you would like to participate, we will ask you to complete the Qualtrics survey at three different time points over the course of 9 months. You will be required to complete the survey before beginning your course, after completing your course, and six months following the end of your course. Before completing the survey at each time point, you will be required to tick a box providing informed consent to participate in this research project. It is recommended that you choose to participate only if you believe you can contribute to all three time points, as the primary investigator will only be able to use your data in the analyses if you have completed the survey at time points 1 and 2 at least, or all three time points. This does not, however, preclude you from choosing to complete the survey at only the first time point. If you opt out of being contacted via email to participate at time points 2 and 3, your data will be excluded from all planned analysis. When completing the survey, you will be required to provide some background information (age, gender, nationality, discipline of study, year level etc.), and answer various questions about your perceived levels of wellbeing, factors related to wellbeing, and your satisfaction with your course. If you have any follow-up questions after completing the survey, you may email them to the primary investigator of this research project.
 - **Location and Duration:** Participants will complete the Qualtrics survey online at three different time points over the course of 9 months. You will be required to complete the survey before beginning your course, after completing your course, and six months following the end of your course. At each time point, the Qualtrics survey should take no more than approximately 30 minutes to complete, or a total of 90 minutes over all three time points. Participants may find the survey is lengthy and the content of some questions very similar, as several measures of wellbeing and factors associated with wellbeing have been included in the survey. The purpose of doing so is to collect data that is more reliable, valid, comprehensive and useful than previous studies.
- Remuneration:** First year psychology students will be offered 0.5 research participation credit points for completing the survey for the first two time points. However, these credit points will only be awarded as 1 full credit point after completing of the survey at time point 2 (for time one and two together). All participants will also be offered the opportunity to opt into a prize draw for a gift card worth \$50 for the completion of the survey at each time point. At the completion of the survey at each time point, you may simply exit the survey or click an optional link to enter the prize draw. The link will redirect you to a webpage

where you can enter your email address as a contact for the prize draw, so it is not linked to your survey data. The random number function in Excel will be used to select the winner. The email that has been randomly allocated the number one will be the winner of the gift card. If you do not claim your prize within two weeks, you will be informed that you have missed your chance, and the email that was randomly allocated the number two in the initial draw will then be contact to claim the prize. This process will continue until a participant responds to the congratulatory email. If you are the winner, you can choose to collect your prize from either the primary investigator or Michelle Millynn at the Research School of Psychology reception office, or have your prize delivered to you electronically via email. You may also choose to receive individualised feedback on your level of wellbeing at the time of survey completion. This would include a summary of your wellbeing scores which will be automatically generated based on your responses using Qualtrics Survey Software, and delivered along with information about interpretation and mental health support.

- **Risks:** There are no known risks, discomforts, hazards or side effects associated with participating in this study. Although it is not anticipated that you will find the questions in the Qualtrics survey distressing, you do not need to continue and are encouraged to exit the survey by closing your internet browser should you become distressed given the nature of some of the questions (e.g., asking about experiences of psychological distress). If you require support, please contact the primary investigator of this research project or the crisis services listed in the Queries and Concerns section.
- **Benefits:** By participating in this research project, you are providing valuable information about the ways in which student wellbeing and course satisfaction may be promoted within university settings. We hope that this information will enhance policy development in this area in the future. Furthermore, if you are a student interested in research or are studying psychology, participating can be beneficial for gaining a better understanding of how research is conducted and what is involved.
- **Implications of Participation:** Declining to participate in this research project will have no bearing the quality of teaching you receive, the content you are taught, or on your course grades. This research project will be conducted separate and independent to your course.

Confidentiality:

Confidentiality will be protected as far as the law allows. No one other than the nominated researcher will have access to any of the identifiable data you provide. Data will only be shared between the primary investigator and her research panel members once de-identified, meaning that you will not be identifiable. To protect confidentiality, all data will be de-identified (using a unique, unidentifiable code for each participant) prior to entry in an electronic database or storage in a locked filing cabinet. This means that your email address will be kept separately from the data, so that the data itself can only be identified using a Participant ID number. Survey data, including any background information will not be stored in the same location as your email address. Publication of the results will appear as group data, and never as results that could in any way identify you as an individual. It is important to note that your teaching staff will have no knowledge of whether or not you participate in this study.

Privacy Notice:

In collecting your personal information within this research, the ANU must comply with the Privacy Act 1988. The ANU Privacy Policy is available at https://policies.anu.edu.au/ppi/document/ANUP_010007 and it contains information about how a person can:

- Access or seek correction to their personal information;
- Complain about a breach of an Australian Privacy Principle by ANU, and how ANU will handle the complaint.

Data Storage:

- **Where:** Any hard copies of all survey data will be stored in the primary investigator's locked filing cabinets in the Research School of Psychology at the ANU. All electronic data will be stored on the primary investigator's password-protected computer.
- **How long:** Data will be stored for a period of at least five years from the date of any publication arising from the research.
- **Handling of Data following the required storage period:** As acquiring data is a lengthy process that may impose a burden on participants, our ethical responsibility is to make the most of the data collected. The data will be de-identified after the survey has been completed at each time point. You will not be required to print your name on any documents. At the end of the five-year storage period, the data will be archived electronically the primary investigator or primary supervisor's password-protected computers at the ANU, and retained in a de-identified format for potential use in future research projects. Any later use of this data should not expose you to any new or additional risks.

Queries and Concerns:**Who to contact if you feel distressed:**

Lifeline Australia: 13 11 14

ANU Crisis Support Line Phone: 1300 050 327 (5pm-9am weekdays, 24/7 weekends)

ANU Crisis Support SMS Text Message Service: 0488 884 170

ANU Counselling Centre: (02) 6125 2442 or counselling.centre@anu.edu.au

ANU Psychology Clinic: (02) 6125 8498 or psychology.clinic@anu.edu.au

Contact Details for More Information: For further information or queries regarding the study, please contact the investigators. You may also contact the primary investigator should you feel distressed. Ms Aflaha Khan is a provisional psychologist, registered with the Australian Health Practitioner Regulation Agency (AHPRA) Psychology Board of Australia. She is currently completing her clinical training at the ANU Psychology Clinic, and can support you during times of crisis and direct you to the most appropriate services if necessary.

Ms Aflaha Khan

Primary Investigator

PhD (Clinical Psychology) Candidate

Email: aflaha.khan@anu.edu.au

Associate Professor Elizabeth

Rieger

Primary Supervisor

Email: elizabeth.rieger@anu.edu.au

Ethics Committee Clearance: The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2019/177). If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

Telephone: (02) 6125 3427

Email: Human.Ethics.Officer@anu.edu.au

Study 1 Example Research Flyer

IMPROVE STUDENT WELLBEING

SEEKING PARTICIPANTS: Around 84% of students experience meaningful levels of psychological distress. Be part of a study that aims to address this issue!

WHAT? Participating will involve completing an online survey about your wellbeing at three different points in time: in weeks 1 and 12 of this semester, and 6 months after the end of this semester.

HOW LONG? At each point in time, the survey will take approximately 15 – 20 minutes to complete.

BENEFITS! You can choose to receive individualised feedback on your level of wellbeing, opt in to a prize draw for a gift card worth \$50, and receive research participation credit points.

WHO CAN PARTICIPATE?

- ✓ If you are 18 years or older
- ✓ If you haven't completed the course PSYC1005 'The Wellbeing Formula' in 2019 and 2020
- ✓ If you are currently enrolled in any ANU arts or science courses

The ethical aspects of this research have been approved by the ANU HREC (Protocol 2019/177)



INTERESTED?

Follow these links:

https://anu.au1.qualtrics.com/jfe/form/SV_0dfYvmkwTnqEwCi



Or contact:

Primary Investigator
Aflaha Khan (PhD Candidate)
E: aflaha.khan@anu.edu.au

Primary Supervisor
A/Prof Elizabeth Rieger
E: elizabeth.rieger@anu.edu.au

Written Consent for Participants

Project Title: Investigating Changes in Wellbeing Among University Students Over Time (2019/177).

I have read and understood the Information Sheet you have given me about the research project, and I have had any questions and concerns about the project (listed here

_____)

addressed to my satisfaction.

I agree to participate in the project.

YES ☐ NO ☐

I agree to be contacted to participate in this study again in 3 and 6 months

YES ☐ NO ☐

If yes, please provide your university email address:

.....

Signature:.....

Date:.....

Appendix D: Study 1 Cohort Effects

Table 1

Fixed effects estimates of cohort from mixed models for wellbeing and psychological distress outcomes

	Primary Analyses						Post-hoc Analyses		
	Cohort 2 vs Cohort 1			Cohort 3 vs Cohort 1			Cohort 3 vs Cohort 2		
	<i>B (SE)</i>	<i>95% CI</i>	<i>Sig</i>	<i>B (SE)</i>	<i>95% CI</i>	<i>Sig</i>	<i>B (SE)</i>	<i>95% CI</i>	<i>Sig</i>
Overall PWS	-.05 (.13)	[-.31, .21]	.702	.05 (.13)	[-.21, .30]	.718	.10(.12)	[-.15, .34]	.429
Autonomy	-.10(.13)	[-.35, .15]	.441	.06(.12)	[-.18, .31]	.610	.16(.12)	[-.07, .39]	.172
Mastery	-.08(.13)	[-.34, .17]	.528	-.10(.13)	[-.36, .15]	.417	-.02(.12)	[-.26, .22]	.862
Personal Growth	-.06(.13)	[-.31, .18]	.612	.13(.12)	[-.11, .37]	.296	.19(.12)	[-.04, .42]	.100
Purpose in Life	-.10(.13)	[-.35, .16]	.451	-.05(.13)	[-.30, .20]	.696	.05(.12)	[-.19, .28]	.688
Positive Relations	.02(.13)	[-.23, .27]	.875	.05(.13)	[-.20, .30]	.701	.03(.12)	[-.21, .26]	.815
Self-Acceptance	.08(.13)	[-.18, .33]	.545	.11(.13)	[-.14, .36]	.378	.03(.12)	[-.20, .27]	.782
Overall Happiness	-.06(.13)	[-.32, .20]	.641	-.07(.13)	[-.33, .18]	.585	-.01(.12)	[-.25, .23]	.942
Distress	.04(.13)	[-.21, .30]	.736	.06(.13)	[-.18, .31]	.624	.02(.12)	[-.22, .25]	.878
Depression	-.01(.13)	[-.27, .24]	.915	.08(.13)	[-.17, .33]	.541	.09(.12)	[-.15, .33]	.449
Anxiety	.00 (.13)	[-.25, .26]	.978	.07(.13)	[-.18, .32]	.571	.07(.12)	[-.17, .31]	.571
Stress	-.02(.13)	[-.27, .23]	.884	.02(.12)	[-.22, .27]	.855	.04(.12)	[-.19, .27]	.727

Note. Primary analysis specified cohort 1 and all post-hoc analyses specified cohort 2 as the reference category.

Appendix E: Study 1 Drop-out Effects

Table 1

Logistic regression predicting a non-response at the end of the semester survey (time 2)

	<i>B(SE)</i>	<i>Wald</i>	<i>df</i>	<i>sig</i>	<i>Exp(B)</i>	<i>95% CI</i>
Course	.43 (.27)	2.55	1	.110	1.54	[.91, 2.60]
Age	.02 (.04)	.29	1	.589	1.02	[.94, 1.12]
Gender	-.09 (.34)	.07	1	.786	.91	[.47, 1.77]
Ethnicity	-.59 (.36)	2.72	1	.099	.56	[.28, 1.12]
Country of Birth	.62 (.35)	3.20	1	.074	1.86	[.94, 3.68]
Marital Status	-.70 (.93)	.56	1	.454	.50	[.08, 3.10]
Religiosity	.20 (.31)	.42	1	.519	1.22	[.67, 2.24]
Education	.53 (.42)	1.61	1	.205	1.69	[.75, 3.83]
Study Year Level		1.68	3	.641		
Fourth Year +	.10 (.42)	.06	1	.808	1.11	[.48, 2.55]
Third Year	.49 (.41)	1.42	1	.233	1.62	[.73, 3.60]
Second Year	.28 (.36)	.62	1	.432	1.33	[.66, 2.69]
Occupation	.26 (.58)	.20	1	.653	1.30	[.42, 4.01]
Mental Health	-.30 (.29)	1.09	1	.297	.74	[.42, 1.30]
Physical Health	-.53 (.36)	2.17	1	.140	.59	[.29, 1.19]
Constant	-1.38 (1.03)	1.79	1	.180	.25	

Table 2

Logistic regression predicting a non-response at the six-month follow-up survey (time 3)

	<i>B(SE)</i>	<i>Wald</i>	<i>df</i>	<i>sig</i>	<i>Exp(B)</i>	<i>95% CI</i>
Course	.34 (.25)	1.815	1	.178	.71	[.44, 1.17]
Age	-.01 (.04)	.054	1	.816	.99	[.91, 1.08]
Gender	.45 (.31)	2.093	1	.148	.64	[.35, 1.17]
Birth Country	.63 (.32)	3.885	1	.049	.53	[.28, 1.00]
Ethnicity	.01 (.32)	.001	1	.980	.99	[.53, 1.87]
Religiosity	.92 (.30)	9.696	1	.002	.40	[.22, .71]
Marital Status	-.43 (.86)	.247	1	.619	1.53	[.29, 8.25]
Education	.35 (.41)	.754	1	.385	.70	[.32, 1.56]
Study Year Level		4.592	3	.204		
Fourth Year +	.20 (.39)	.260	1	.610	1.22	[.57, 2.61]
Third Year	-.14 (.39)	.137	1	.711	.87	[.40, 1.86]
Second Year	.53 (.33)	2.569	1	.109	1.70	[.89, 3.24]
Occupation	.05 (.57)	.009	1	.924	.95	[.31, 2.88]
Mental Health	-.82 (.28)	8.927	1	.003	2.28	[1.33, 3.91]
Physical Health	-.29 (.36)	.675	1	.411	1.34	[.67, 2.68]
Constant	.45 (1.71)	.070	1	.791	1.57	

Appendix F: Study 1 Tests of Fixed Effects for Predictors over Time Models

Table 1

Tests of fixed effects investigating predictors of wellbeing and psychological distress over time (research question one)

Outcome	Interaction Models			
	Time x Gender	Time x Age	Time x Education	Time x Social Identity
Overall Happiness	$F(2, 444.94) = 1.36, p = .257$	$F(2, 445.54) = .35, p = .709$	$F(2, 453.08) = .43, p = .651$	$F(2, 469.49) = .05, p = .947$
Overall PWS	$F(2, 435.58) = .33, p = .721$	$F(2, 436.45) = .03, p = .974$	$F(2, 440.70) = .74, p = .742$	$F(2, 451.66) = 1.06, p = .346$
Autonomy	$F(2, 450.46) = 1.23, p = .293$	$F(2, 451.33) = .06, p = .941$	$F(2, 457.50) = .23, p = .798$	$F(2, 471.54) = .00, p = 1.00$
Mastery	$F(2, 442.86) = .59, p = .553$	$F(2, 443.39) = .22, p = .800$	$F(2, 450.16) = .11, p = .900$	$F(2, 465.31) = .32, p = .727$
Personal Growth	$F(2, 445.53) = .08, p = .923$	$F(2, 446.72) = .08, p = .925$	$F(2, 453.84) = .87, p = .420$	$F(2, 470.03) = .67, p = .512$
Purpose in Life	$F(2, 459.07) = .15, p = .862$	$F(2, 459.75) = .29, p = .745$	$F(2, 467.27) = 1.04, p = .353$	$F(2, 483.81) = 2.47, p = .086$
Positive Relations	$F(2, 436.15) = .03, p = .972$	$F(2, 437.21) = .04, p = .964$	$F(2, 443.61) = .44, p = .644$	$F(2, 457.37) = .20, p = .821$
Self-Acceptance	$F(2, 445.27) = .84, p = .433$	$F(2, 445.89) = .12, p = .891$	$F(2, 452.06) = .16, p = .853$	$F(2, 466.13) = 1.60, p = .204$
Distress	$F(2, 449.32) = 1.57, p = .209$	$F(2, 450.10) = .08, p = .923$	$F(2, 457.75) = .16, p = .860$	$F(2, 474.61) = 3.57, p = .029$
Depression	$F(2, 451.54) = 1.56, p = .211$	$F(2, 452.28) = .42, p = .66$	$F(2, 460.26) = 1.16, p = .314$	$F(2, 477.02) = 3.58, p = .029$
Anxiety	$F(2, 448.39) = .37, p = .689$	$F(2, 449.21) = .392, p = .676$	$F(2, 456.14) = .99, p = .373$	$F(2, 472.78) = 2.86, p = .058$
Stress	$F(2, 457.70) = 1.73, p = .178$	$F(2, 458.43) = .55, p = .580$	$F(2, 466.76) = 1.30, p = .274$	$F(2, 485.01) = .34, p = .710$

Appendix G: Study 1 Tests of Fixed Effects for Interaction and Moderation Models

Table 1

Tests of fixed effects for interaction models (research question 2) and moderation models (research question 3)

Outcome	Interaction Models		Moderation Models		
	Course x Time	Gender	Age	Education	Social Identity
Happiness	$F(2, 448.42) = 2.69, p = .069$	$F(2, 442.66) = 1.13, p = .324$	$F(2, 443.54) = .40, p = .670$	$F(2, 451.05) = .87, p = .420$	$F(2, 465.67) = .34, p = .711$
PWS	$F(2, 440.27) = 4.68, p = .010$	$F(2, 432.91) = .12, p = .890$	$F(2, 432.90) = 1.37, p = .255$	$F(2, 438.06) = .24, p = .790$	$F(2, 445.85) = .47, p = .624$
Autonomy	$F(2, 450.49) = 5.09, p = .007$	$F(2, 447.35) = .03, p = .968$	$F(2, 449.29) = 1.16, p = .314$	$F(2, 454.47) = 1.13, p = .323$	$F(2, 466.47) = 1.70, p = .184$
Mastery	$F(2, 446.53) = 8.11, p < .001$	$F(2, 439.50) = .26, p = .77$	$F(2, 439.67) = .09, p = .918$	$F(2, 446.76) = .83, p = .436$	$F(2, 458.02) = 5.29, p = .005$
Growth	$F(2, 447.36) = .14, p = .866$	$F(2, 443.40) = .58, p = .562$	$F(2, 444.12) = 1.46, p = .234$	$F(2, 451.64) = .47, p = .625$	$F(2, 465.59) = .56, p = .573$
Purpose	$F(2, 457.56) = 2.78, p = .063$	$F(2, 456.74) = .23, p = .796$	$F(2, 457.34) = 1.95, p = .143$	$F(2, 464.21) = 1.64, p = .195$	$F(2, 476.95) = 2.10, p = .124$
Relations	$F(2, 443.70) = .67, p = .514$	$F(2, 433.85) = .15, p = .860$	$F(2, 435.27) = .26, p = .772$	$F(2, 441.37) = .71, p = .491$	$F(2, 454.18) = 3.41, p = .034$
Self-Accept	$F(2, 448.72) = 1.84, p = .159$	$F(2, 442.45) = 1.34, p = .264$	$F(2, 443.36) = .23, p = .797$	$F(2, 449.86) = 2.23, p = .109$	$F(2, 461.44) = 1.75, p = .175$
Distress	$F(2, 452.74) = 5.19, p = .006$	$F(2, 446.44) = .09, p = .913$	$F(2, 446.66) = .62, p = .538$	$F(2, 454.54) = .33, p = .720$	$F(2, 468.59) = 2.18, p = .114$
Depression	$F(2, 455.28) = 4.86, p = .008$	$F(2, 448.65) = .14, p = .870$	$F(2, 449.94) = .50, p = .609$	$F(2, 457.09) = 1.58, p = .207$	$F(2, 474.04) = .60, p = .548$
Anxiety	$F(2, 450.18) = 1.78, p = .169$	$F(2, 445.15) = 1.55, p = .213$	$F(2, 446.64) = .69, p = .501$	$F(2, 453.88) = .58, p = .559$	$F(2, 469.27) = .44, p = .644$
Stress	$F(2, 461.35) = 1.81, p = .165$	$F(2, 455.40) = .08, p = .928$	$F(2, 456.57) = 1.17, p = .313$	$F(2, 465.19) = .04, p = .964$	$F(2, 481.80) = .94, p = .390$

Appendix H: Study 1 Pairwise Comparisons between Courses

Table 1

Pairwise comparisons between course condition at each time point of measurement

	Time 1 (WB) vs Time 1 (Comparison)				Time 2 (WB) vs Time 2 (Comparison)				Time 3 (WB) vs Time 3 (Comparison)			
	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>
PWS Total Score	-.04	.11	.697	[-.25, .17]	.18	.11	.103	[-.04, .40]	.14	.12	.227	[-.09, .37]
Autonomy	-.2	.11	.062	[-.41, .01]	.09	.12	.423	[-.14, .32]	-.11	.12	.379	[-.35, .13]
Mastery	-.12	.11	.247	[-.33, .09]	.17	.12	.150	[-.06, .40]	.25	.12	.046	[.00, .49]
Psychological Distress	.09	.11	.382	[-.12, .30]	-.24	.12	.044	[-.47, -.01]	-.08	.13	.538	[-.33, .17]
Depression	.03	.11	.749	[-.18, .24]	-.29	.12	.016	[-.52, -.05]	-.18	.13	.162	[-.43, .07]

Appendix I: Study 1 Pairwise Comparisons over Time

Table 1

Pairwise comparisons for each time point of measurement within each course condition

	Positive Psychology Course				Standard courses			
	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>
PWS Total Score								
Time 1 vs Time 2	-.09	.05	.264	[-.22, .04]	.13	.06	.058	[.00, .27]
Time 1 vs Time 3	-.21	.06	.002	[-.35, -.06]	-.02	.06	1.000	[-.17, .12]
Time 2 vs Time 3	-.11	.06	.188	[-.03, .03]	-.16	.06	.044	[-.31, .00]
Autonomy								
Time 1 vs Time 2	-.26	.07	.001	[-.42, -.10]	.03	.07	1.000	[-.13, .20]
Time 1 vs Time 3	-.20	.07	.019	[-.37, -.02]	-.10	.07	.465	[-.28, .07]
Time 2 vs Time 3	.06	.07	1.000	[-.11, .24]	-.14	.08	.215	[-.30, .05]
Mastery								
Time 1 vs Time 2	-.08	.07	.625	[-.24, .08]	.21	.07	.008	[.04, .37]
Time 1 vs Time 3	-.27	.07	<.001	[-.44, -.09]	.10	.07	.485	[-.07, .28]
Time 2 vs Time 3	-.18	.07	.046	[-.36, .00]	-.10	.08	.545	[-.29, .08]
Psychological Distress								
Time 1 vs Time 2	.11	.07	.442	[-.07, .28]	-.23	.08	.008	[-.41, -.05]
Time 1 vs Time 3	.21	.08	.022	[.02, .40]	.04	.08	1.000	[-.15, .24]
Time 2 vs Time 3	.11	.08	.574	[-.09, .30]	.27	.09	.005	[-.47, -.06]
Depression								
Time 1 vs Time 2	.09	.07	.638	[-.09, .27]	-.23	.08	.008	[-.41, -.05]
Time 1 vs Time 3	.19	.08	.059	[-.01, .38]	-.03	.08	1.000	[-.22, .17]
Time 2 vs Time 3	.10	.08	.748	[-.10, .30]	.20	.09	.054	.00, .41]

Appendix J: Study 2 Ethics Documentation

Participant Information Sheet

Dear Participant,

Before you decide to take part in this study, it is important for you to understand what your participation will involve, and what the study is about. Do please take the time to read the following information carefully and to ask any follow-up questions that will better help you to decide whether you would like to participate.

Researcher:

My name is Aflaha Khan. I am a Doctor of Philosophy (Clinical Psychology) candidate at the Research School of Psychology, College of Health and Medicine, at The Australian National University (ANU). My supervisor is Associate Professor Elizabeth Rieger.

Project Title: Investigating Changes in Wellbeing Among University Students Over Time.

General Outline of the Project:

- **Description and Methodology:** In a survey of two Australian universities, 19.2% of students reported very high levels and 64.7% of students reported moderate to high levels of psychological distress (Stallman, 2010). To address these high levels of psychological distress in students, several universities have introduced wellbeing courses into their curricula as electives. The main goal of this research project is to understand students' perspectives on the strengths and weaknesses of one of these wellbeing courses: "The Science of Wellbeing: The Science and Practice of Making a Good Life" (PSYC1005). To achieve this goal, ten students from the course have been invited to participate in a 90-minute focus group at the Research School of Psychology (Building 39, ANU), followed by a 30 minute working group after one week.
- **Participants:** We are recruiting 10 participants who are willing to attend a 90-minute focus group, to review specific elements of the course in the week after the focus group, and to then attend a 30-minute working group.
- **Use of Data and Feedback:** All data collected from this study will be used for submission of thesis publications and possible future research. Data may also contribute to presentations at academic or clinical conferences. You will receive an email summary of what was discussed in the focus group and working group approximately two weeks after participation.

Participant Involvement:

- **Voluntary Participation & Withdrawal:** Participation in this study is **entirely voluntary**. You are free to withdraw from the study, without penalty or explanation, at any time up until the work is prepared for publication. Your data will be destroyed and not used should you choose to withdraw from the study. During participation, you can refuse to answer any questions.

- **What does participation in the research entail?** You will be asked to read through this information sheet carefully and encouraged to ask any questions. Ten students from the course have been invited to participate in a 90-minute focus group at the Research School of Psychology (Building 39, ANU). If you choose to participate, you will be asked a variety of questions about your experiences in the course and encouraged to discuss your responses as a group. Specifically, you will be asked about your reasons for undertaking the course, as well as what you perceive to be strengths and weaknesses of the course. At the end of this discussion, you will be divided into smaller groups and provided with a list of question about the course assessments, lecture slides, or lecture recordings. You will be asked to review one of these specific elements of the course when providing responses to the questions over the course of the next week, and will then be invited back in your small working groups to discuss your responses at the end of the week. The focus and working group discussions will be audio recorded, so transcripts can be developed and analysed for key themes. The responses will be de-identified in the transcribing process, and you will not be required to print your name on any documents.
- **Location and Duration:** You will be required to attend the 90 minute focus group and the 30 minute working groups at the Research School of Psychology (Building 39, ANU). Reviewing specific elements of the course is estimated to take approximately 3.5 hours of your time between the focus and working group meetings.
- **Remuneration:** You will be offered \$50.00 for the time taken to contribute to the focus group and the working groups. You can choose to collect your remuneration from either the primary investigator (Aflaha Khan) or Michelle Millynn at the Research School of Psychology reception office.
- **Risks:** There are no known risks, discomforts, hazards or side effects associated with participating in this study. Although it is not anticipated that you will find the focus or working group questions distressing, you do not need to continue and are encouraged to withdraw your participation should you become distressed. If you require support, please contact the primary investigator of this research project or the crisis services listed in the Queries and Concerns section.
- **Benefits:** By participating in this research project, you are providing valuable information about the ways in which the wellbeing course may be improved for future students. Furthermore, if you are a student interested in research or are studying psychology, participating can be beneficial for gaining a better understanding of how research is conducted and what is involved.
- **Implications of Participation:** Declining to participate in this research project will have no bearing on your course grades or have any other adverse consequences. This research project will be conducted separate and independent to your course: teaching staff will not be made aware of your participation.

Confidentiality:

Confidentiality will be protected as far as the law allows. No one other than the nominated researcher will have access to any identifiable data you provide (e.g., name and email address). Data will only be shared between the primary investigator and her research panel members once it has been de-identified, meaning that you will not be

identifiable. To protect confidentiality, all data will be de-identified (using a unique, unidentifiable code for each participant) prior entry in an electronic database or storage in a locked filing cabinet. This means that your name and email address will be kept separately from the data, so that the data itself can only be identified using a Participant ID number. The audio recordings and transcripts of the discussions will not be stored in the same location as your email address. Publication of the results will appear as group data, and never as results that could in any way identify you as an individual. It is important to note that your teaching staff will have no knowledge of whether or not you participate in this study.

Privacy Notice:

In collecting your personal information within this research, the ANU must comply with the Privacy Act 1988. The ANU Privacy Policy is available at https://policies.anu.edu.au/ppi/document/ANUP_010007 and it contains information about how a person can:

- Access or seek correction to their personal information;
- Complain about a breach of an Australian Privacy Principle by ANU, and how ANU will handle the complaint.

Data Storage:

- **Where:** Any hard copies of data will be stored in the primary investigator's locked filing cabinets in the Research School of Psychology at the ANU. All electronic data will be stored on the primary investigator's password-protected computer.
- **How long:** Data will be stored for a period of at least five years from the date of any publication arising from the research.
- **Handling of Data following the required storage period:** As acquiring data is a lengthy process that may impose a burden on participants, our ethical responsibility is to make the most of the data collected. At the end of the five-year storage period, the data will be archived electronically the primary investigator or primary supervisor's password-protected computers at the ANU, and retained in a de-identified format for potential use in future research projects. Any later use of this data should not expose you to any new or additional risks.

Queries and Concerns:**Who to contact if you feel distressed:**

Lifeline Australia: 13 11 14

ANU Crisis Support Line Phone: 1300 050 327 (5pm-9am weekdays, 24/7 weekends)

ANU Crisis Support SMS Text Message Service: 0488 884 170

ANU Counselling Centre: (02) 6125 2442 or counselling.centre@anu.edu.au

ANU Psychology Clinic: (02) 6125 8498 or psychology.clinic@anu.edu.au

Contact Details for More Information: For further information or queries regarding the study, please contact the investigators. You may also contact the primary investigator should you feel distressed. Ms Aflaha Khan is a provisional psychologist, registered with the Australian Health Practitioner Regulation Agency (AHPRA) Psychology Board of Australia. She is currently completing her clinical training at the ANU Psychology Clinic, and can support you during times of crisis and direct you to the most appropriate services if necessary.

Ms Aflaha Khan

Primary Investigator
Doctor of Philosophy (Clinical
Psychology) Candidate
Email: aflaha.khan@anu.edu.au

**Associate Professor Elizabeth
Rieger**

Primary Supervisor
Email: elizabeth.rieger@anu.edu.au

Ethics Committee Clearance: The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2019/177). If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee
The Australian National University
Telephone: (02) 6125 3427
Email: Human.Ethics.Officer@anu.edu.au

Written Consent for Participants

Project Title: Investigating Changes in Wellbeing Among University Students Over Time (2019/177).

I have read and understood the Information Sheet you have given me about the research project, and I have had any questions and concerns about the project (listed here

addressed to my satisfaction.

I agree to participate in the project.

YES ☐ NO ☐

I agree to this interview being audio-recorded

YES ☐ NO ☐

Signature:.....

Date:.....

Appendix K: Study 2 Focus Group Questions

Focus Group Introduction:

Thank you for taking the time to meet with me today. I appreciate your time, and am really looking forward to hearing your perspectives. If you don't mind, I would like to record our conversation. The purpose of this is so that I can generate a transcript, and review our discussion carefully, and make sure I have really understood what you have told me. This transcript and audio recording will only be shared with my PhD Supervisor during our compilation of this research study. The content of our discussions will not be shared with anyone else unless I have explicitly asked for your prior permission. I will present you with a summary of what I think we covered about two weeks after our discussion next week so that you can confirm that I have accurately captured your views.

I am interested in hearing about, firstly, why you chose to complete this wellbeing course, and then I would like to focus on what you consider to be strengths of the course and what you would like to see improved in the course.

I have a list of questions and themes that I would like to cover, if possible, however, I really want you to feel free to lead the discussion, and talk about things that are of importance to you in regards to the wellbeing course.

If you ever feel uncomfortable about a question I have asked, you can simply indicate that you do not wish to respond, and we can move on to other questions.

All the information I collect will be stored in a de-identified manner, meaning that your name will not be contacted to anything you say or any of the responses you provide. The information will also be stored in a confidential and secure location that is only accessible by myself and my PhD supervisor.

Do you have any questions about this process?

Please note, as the focus group will be semi-structured group discussion, the questions below are only provided as a guide to what will be covered.

Focus Group Questions:***Reasons for taking the course:***

1. Why did you choose to take this course?
2. What were you expecting to learn in this course?
3. Did the course meet your expectations?
 - a. If so, in what ways?
 - b. If no, why not? How might the course be improved to meet your expectations?
4. What are your thoughts about the course title “The Wellbeing Formula: The Science and Practice of Making a Good Life”?
 - a. Did the title attract you to the course or deter you from the course?
 - b. What are strengths of the course title?
 - c. What are weaknesses of the course title?

Strengths and weaknesses of the course:

5. Did you attend the lectures in person? If so, did this in any way improve your experience of the course? If not, what were the main factors influencing your decision not to attend lectures and would anything have persuaded you to attend the lectures?
6. Would have liked the course to include tutorials/labs? Explore with them the pros and cons of including and not including tutorials.
7. What did you like about the course; what were its strengths? ... Why?
8. What did you dislike about the course; what could be improved? ... Why?
9. Tell me about any “standout” negative experiences you have had with the course.
10. Tell me about any “standout” positive experiences you have had with the course.
11. What was the most useful or helpful aspect of the course? Why?
12. What was the least useful or helpful aspect of the course? Why?
13. [If not already noted in the discussion] Would labs/tutorials have been helpful and, if so, how could these have best been used?

Science and practice:

14. Did the course help you learn more about the psychological science and practice of wellbeing?

- a. If yes, what is your understanding of this?

Learning and personal growth:

- 15. Did the course contribute significantly to your personal growth and development?
 - a. If yes, how?
 - b. If no, why not? How might the course be improved to better contribute to your personal growth and development?
- 16. Did the course contribute significantly to your understanding of the factors that improve wellbeing?
 - a. If yes, how?
 - b. If no, why not? How might we improve the course?
- 17. Did the course help you learn skills to improve your wellbeing?
 - a. Will you continue using these skills? Why/why not?
 - b. What things prevented you from using (or made it difficult to use) the skills taught in the course?

Overall evaluation

- 18. Overall, how satisfied were you with the quality of this course? Was it a valuable learning experience? Why/why not?

Focus Group Summary

Thank you for your honesty and for spending time with me discussing your experiences and preferences. It has been so valuable to get an understanding of your experiences.

(Summarise key messages provided by the participant).