

**Bond University**

## **DOCTORAL THESIS**

**PERC<sup>2</sup> Up, a Psychosocial Model of Mental Health Recovery in Young Adults: A Path Analytic and Acute Mental Health Inpatient Intervention Study.**

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**PERC<sup>2</sup> Up, a Psychosocial Model of Mental Health Recovery in Young Adults: A  
Path Analytic and Acute Mental  
Health Inpatient Intervention Study.**

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Submitted in total fulfillment of the requirements for the degree of Doctor of Philosophy

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## Abstract

Promoting a recovery-oriented approach to mental health care is central to Australia's national mental health strategy. While admission into acute mental health inpatient units is rare, recovery-oriented principles and practices are important in this context with patients often in crisis and in an acute phase of a mental health condition. This is an opportune time to introduce psychological interventions to "kickstart" the recovery process. However, studies exploring the effectiveness of recovery-oriented psychological interventions on acute mental health units are lacking. One of the priorities of Australia's national mental health strategy is promoting a recovery-oriented approach among young people given their increased vulnerability and the ideal of early intervention. This higher risk young adult age group is the focus of this program of research. The overarching aim of this Doctor of Philosophy program of research is to make an important contribution to development of recovery-based psychological interventions in the acute mental health inpatient setting.

To address the above objectives and research gaps, a mixed methodological approach was employed with four sequential studies conducted. The aim of Study 1 was to systematically review the literature on psychological interventions in the acute mental health inpatient setting to identify gaps in the research. This served to guide the program of research that followed in addition to providing a comprehensive update regarding this area of research (or lack thereof). The objective of Study 2 was to develop and validate the PERC<sup>2</sup> Up model of mental health recovery, described below, with young adults in both university and acute inpatient mental health settings. This model of mental health recovery was based on the broaden and build theory of positive emotions (Fredrickson, 1988) and modified for this program of research to incorporate variables specific to the acute mental health inpatient setting. The broaden and build theory posits that experiences of positive emotions, albeit brief, broadens people's perspectives and thought-action repertoires,

which in turn serves to build their enduring personal resources, ranging from physical, social, emotional, and psychological. Study 3 included a unique opportunity to compare the mental health of young adults in the university setting to those in the acute mental health inpatient setting, with the intention of highlighting the mental health challenges that university students experience and the need for additional recovery-oriented psychological interventions, based on the PERC<sup>2</sup> Up model, for young adults in this context. In Study 4, the newly developed PERC<sup>2</sup> Up model provided the basis for the development of a brief recovery-oriented psychological intervention on an acute inpatient mental health unit for young adult patients. The objective was to evaluate the feasibility and to preliminarily examine the benefits of the intervention, while also collecting data about satisfaction and the immediate impact of the intervention, further developing and contributing to the limited body of literature explaining pathways to mental health recovery in acute mental health inpatient settings.

In conducting the systematic quantitative literature review in Study 1, there was a severe lack of research in the area of recovery-oriented psychological interventions on acute mental health inpatient settings, despite this being an area of high mental health care expenditure, highlighting a need for future research in this area, with a particular focus and needs (a) research in the Australian context, (b) an expansion of the range of interventions offered in research, (c) a focus on interventions that offer a transdiagnostic approach, rather than a focus on a specific diagnosis, (d) an expansion of the data that is collected, incorporating pre/post/follow up measures, a satisfaction survey, and an evaluation of session impact, (e) an inclusion of individuals from a variety of age ranges in intervention studies, and (f) a need for more methodological rigor. In Study 2, the PERC<sup>2</sup> Up model of mental health recovery was validated with path analysis using data collected from both acute mental health and university young adult samples. Applying the established broaden

and build theory of positive emotions to mental health recovery and the acute mental health inpatient setting, this model posits that the experience of positive emotions, albeit brief, leads to the broadening of perspective and thought-action repertoires, which in turn leads to the development of self-compassion and social connectedness (personal resources). These personal resources result in improved psychological well-being and the further experience of positive emotions, resulting in an upward spiral of mental health recovery. This model informed the recovery-oriented psychological intervention detailed in Study 4. In Study 3 young adults in the university setting were found to have comparable levels of positive reappraisal, social connectedness, and psychological well-being to young adults in the acute mental health inpatient setting. Young adults in the university setting did report significantly higher self-compassion, while young adults in the acute mental health setting reported more positive (and negative) emotions. This study demonstrated that the PERC<sup>2</sup> Up model and the following brief recovery-orientated intervention may also be applicable and beneficial for young adults in university settings.

Study 4, a non-randomised controlled feasibility study involving a brief recovery-oriented psychological intervention, based on the PERC<sup>2</sup> Up model and incorporating LKM as a mechanism of change, on an acute mental health inpatient unit for young adults, found a significant difference between the intervention and TAU participants in terms of positive reappraisal but not self-compassion, positive emotions, social connectedness, or psychological well-being, after the intervention or TAU. The intervention participants demonstrated significant improvements in positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being following the intervention, while the TAU group only improved significantly in self-compassion. The intervention sessions were immediately impactful with significant improvements in stress, calmness, future positivity, and connectedness to others ratings after meditation sessions.

While no statistically significant differences were found between intervention and TAU participants when comparing readmission rates at 6 months post-intervention, the rates of re-admission were comparable to other intervention studies. Recovery-oriented psychological intervention participants were satisfied with the intervention and found it helpful, with all indicating that they were interested in using this practice in their day-to-day lives.

Overall, this program of research has made important contributions to the area of recovery-oriented psychological interventions in the acute mental health inpatient settings with young adults. These contributions include providing a systematic and comprehensive review of the literature on psychological interventions in the acute mental health inpatient setting and validating PERC<sup>2</sup> Up, a model of acute mental health recovery, which provides a framework for recovery and specific points for mental health intervention. The mental health struggles of university students were also highlighted, demonstrating that the PERC<sup>2</sup> Up model and subsequently developed psychological intervention are also applicable in this context. This program of research developed and evaluated a brief recovery-oriented psychological intervention, which is the first time this has occurred with an adult sample in the Australian acute mental health inpatient context. This recovery-oriented psychological intervention was found to be feasible with benefits for participants, with high levels of satisfaction and immediate impact. Challenges encountered in conducting research in this context, limitations, and areas for future research are discussed.

*Keywords:* mental health, acute mental health, young adults, psychological intervention, brief psychological intervention

### **Declaration of Originality**

This thesis is submitted to Bond University in fulfillment of the requirements for the degree of Doctor of Philosophy (PhD). This thesis represents my own original work towards this research degree and contains no material which has been previously submitted for a degree or diploma at this university or at any other institution, except where due acknowledgement is made. All raw data and analyses have been retained and are available upon request. I certify that I have made and retained a copy of this document.

Lucas Ford

7<sup>th</sup> August 2022

### **Ethics Declaration**

All research conducted and reported in this thesis received approval by the bond University Human Research Ethics Committee (BUHREC), RO-15940 and RO-15687. For research that involved participants recruited from the Gold Coast Health Mental Health Service, ethics approval was gained from the Gold Coast Hospital and Health Service Human Research Ethics Committee (HREC/16/QGC/28). All procedures performed in studies involving human participants were conducted in accordance with the ethical standards of BUHREC and the 1964 Helsinki declaration and its later amendments. Informed consent was obtained from all individual participants included in each respective study.



## **Copyright Declaration**

No published manuscripts have been included in this thesis.

## Acknowledgements

For the duration of this 7 year project, I have been the clinical psychologist on an acute mental health inpatient unit for 18 to 25 year olds on the Gold Coast. Upon commencing this role, I quickly observed that there was little research conducted by psychologists in the acute mental health inpatient setting. This observation set this project into motion and the series of studies that follow. I also wanted to engage in this project in the spirit of maintaining the scientist-practitioner model and attempting to successfully integrate science and clinical practice. The acute mental health inpatient setting can be a challenging, confronting, and intense work environment, so this program of research holds important meaning to me. Thank you for taking the time to read this research.

I would like to thank my wife for tolerating me perpetually having “too much on my plate.” I promise this is the last degree...

I would like to thank my supervisory team, Aileen (now retired) Bruce, and Mike. I appreciate all the support for this (extremely long) endeavour. I also appreciate your support, guidance, and feedback that has occurred over the past decade or so, in both academic and research capacities. This has all been helpful and led me to this point.

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**List of Abbreviations**

ACT	Acceptance and Commitment Therapy
AIC	Akaike's Information Criterion
AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
BPAD	Bipolar Affective Disorder
BPD	Borderline Personality Disorder
BUHREC	Bond University Human Research Ethics Committee
CBT	Cognitive Behavioural Therapy
CERQ	Cognitive Emotion Regulation Questionnaire
CFI	Comparative Fit Index
CHIME	Connectedness, Hope and Optimism, Identity, Meaning in Life, Empowerment
DBT	Dialectical Behaviour Therapy
DV	Dependent Variable
GHQ	General Health Questionnaire
HECS	Higher Education Contribution Scheme
IV	Independent Variable
LKM	Loving Kindness Meditation
MANOVA	Multivariate Analysis of Variance

MBCT	Mindfulness Based Cognitive Therapy
MBSR	Mindfulness Based Stress Reduction
ML	Maximum Likelihood
NICE	National Institute for Health and Care Excellence
PANAS	Positive and Negative Affect Schedule
PERC <sup>2</sup>	Positive Emotions, Reappraisal, Self-Compassion, Social Connection
PTSD	Post Traumatic Stress Disorder
RMSEA	Root Mean Square Error of Approximation
SCS	Self Compassion Scale
SPSS	Statistical Package for the Social Sciences
TAU	Treatment As Usual

## Chapter 1 – Overview of the Program of Research

PERC<sup>2</sup> Up, a psychosocial model of mental health recovery in young adults: A path analytic and intervention study.

About one in five Australians have struggled with a mental health condition within a one-year period, and almost half of Australians have suffered a mental health condition during their lifetime (Australian Bureau of Statistics, 2007). Promoting a recovery-oriented approach to mental health care is central to Australia's national mental health strategy. In addition to prioritising a recovery-oriented approach, Australia's national mental health strategy promotes improving the social and emotional well-being of all Australians, focusing on early intervention, and improving access to high quality services and support. The majority of people who experience a mental health condition recover, but the course and extent of recovery can be difficult to predict. Recovery is about the whole of the individual's life, not just mental health symptoms. From the perspective of the individual with a mental health condition, recovery means gaining and retaining hope, having a sense of purpose and meaning in life, building health relationships, and gaining independence. The purpose of recovery-oriented principles and practice is to ensure that mental health services are being delivered in a way that supports the recovery of mental health consumers. While admission to hospital for a mental health condition is rare and occurs in less than one percent of the Australian population (Australian Bureau of Statistics, 2007), recovery-oriented principles and practices are important in this context with patients often in crisis and in an acute phase of a mental health condition. However, studies exploring the effectiveness of recovery-oriented psychological interventions on acute mental health wards are lacking (Clarke & Wilson, 2009; Durrant, Clarke, Tolland, & Wilson, 2007). The overarching aim of this Doctor of Philosophy program of research is to make an important contribution to the development of recovery-oriented psychological

interventions in the acute mental health inpatient setting, with the initial study systematically reviewing the literature on recovery-oriented psychological interventions in acute mental health inpatient settings.

While the prevalence of mental disorders decreases with age, individuals aged 18 to 24 have the highest lifetime prevalence with 26 percent of young adults experiencing mental disorders, compared to 5.9 percent of individuals aged 65 and older (Australian Bureau of Statistics, 2007). This higher risk young adult age group will be the focus of this program of research. Young adulthood, spanning ages 18 to 25, has been described as a developmental period of significance when young adults transition from adolescence into adulthood and establish their social, psychological, and vocational identities. Because of the social, psychological, and biological changes that accompany this developmental period, this time is characterised by heightened vulnerability to the onset and development of a mental health condition. This is supported by epidemiological data, which suggests that 75% of individuals who experience a psychological disorder develop their first episode by 25 years of age (McGory, Purcell, Goldstone, & Amminger, 2011). A number of recent surveys in Australia and the United Kingdom, described further in Chapter 2, have demonstrated the serious nature of mental health challenges faced by university students. The current program of research will include a unique comparison, not previously explored, between young adults in the university setting and young adults in the acute mental health inpatient setting. This comparison is intended to highlight the mental health struggles of young adults in the university setting, while also providing a model of recovery and recovery-oriented psychological interventions applicable to both young adults in acute mental health inpatient and university settings.

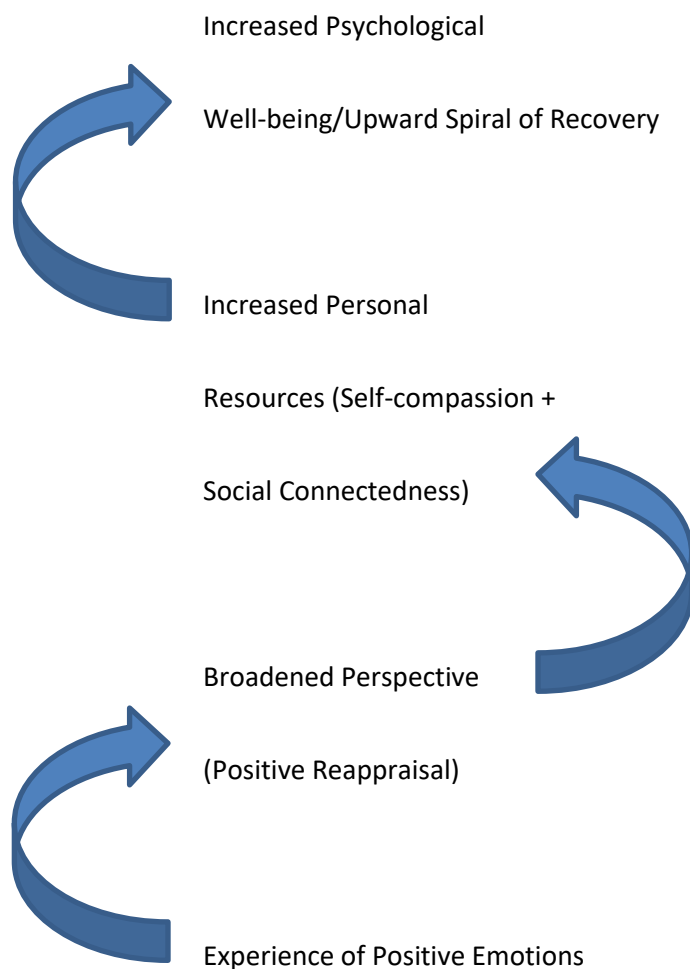
While this developmental period can include increased vulnerability and instability, this period can also be an opportune time for psychological intervention, where individuals can be assisted to develop adaptive coping skills to promote recovery from a mental health condition (Furlong, 2009). Baltes and Staudinger (2000) suggest that the capacity for behavior and personality change is maximised during young adulthood. In Australia, the importance of intervening with young adults has been acknowledged in recent years with the development of mental health services designed specifically to provide assessment and treatment to this age group (i.e., Headspace, various early psychosis programs). One of the priorities of Australia's national mental health strategy is promoting a recovery-oriented approach among young people (Department of Health, 2009). The current program of research aims to develop and evaluate a psychosocial model of mental health recovery, PERC<sup>2</sup> Up, to inform the development of brief psychological, recovery-oriented interventions for young adults in acute mental health inpatient unit settings. This model will examine the role of positive emotions, positive reappraisal, self-compassion, and social connection in promoting psychological well-being in young adults, while also identifying pathways for mental health recovery and specific areas for intervention.

The researcher has been working with young adults in the acute mental health inpatient setting for approximately 7 years at the time of writing. Over this period, a number of constructs have been observed to be helpful in promoting recovery in this context, hence their inclusion in the PERC<sup>2</sup> Up model. The literature also supports the relevance and importance of the application of these constructs in this setting. This model has therefore been informed by "real life" practice in this complex setting, as well as the research literature. The PERC<sup>2</sup> Up model of mental health recovery and the constructs that comprise it will be described below. The loving-kindness meditation (LKM), which is

utilised to develop and enhance these above listed constructs in the intervention in this program of research, will also be discussed.

While there is evidence supporting that positive emotions, positive reappraisal, self-compassion, social connectedness promote psychological well-being and such processes can be observed in clinical practice, to date no model has been developed and evaluated to explain this process and outcome. The proposed PERC<sup>2</sup> Up model of recovery, as seen in Figure 1 below, will examine the relationship between positive emotions, positive reappraisal, self-compassion, and social connectedness, while also exploring how these variables promote psychological well-being and recovery. The PERC<sup>2</sup> Up model, is primarily based on the broaden and build theory of positive emotions (Frederickson, 1998). The PERC<sup>2</sup> Up model applies the broaden and build theory to recovery from mental health conditions generally, but in the current research the focus is on recovery from mental health conditions for young adults requiring an acute inpatient hospital admission. Consistent with the broaden and build theory, the PERC<sup>2</sup> Up model proposes that the experience of positive emotions broadens perspective, leading to the development of personal resources and psychological well-being. In this proposed model, the personal resources will be self-compassion and social connectedness. Like the broaden and build theory, the PERC<sup>2</sup> Up model predicts an upward spiral of mental health recovery, whereby the experience of positive emotions and broadened perspective can “kickstart” the recovery process. The upward spiral of recovery is theorised to subsequently continue by a process of mutual enhancement, whereby increased self-compassion, social connectedness, and psychological well-being contribute to the experience of further positive emotions, hence continuing the upward spiral of recovery.





*Figure 1. PERC<sup>2</sup> Up Model of Mental Health Recovery.*

A component of the PERC<sup>2</sup> Up model of recovery, self-compassion involves treating yourself with care and concern when considering personal inadequacies, mistakes, failures, and painful life situations (Neff, 2003). Self-compassion involves being reassuring, rather than critical, towards oneself when things go wrong (Gilbert, Clarke, Hemple, Miles, & Irons, 2004). Essentially, when nurturing self-compassion one becomes mindfully aware of the pain that one feels when experiencing moments of failure, recognizes that such shortcomings are common to all human beings, and evokes a sense of kindness and care, rather than criticism, towards oneself in these moments. Viewed in this

light, increases in self-compassion have the capacity to change the manner, or process, in which individuals make self-evaluations, or appraise their current situations. Self-evaluations that are more caring and non-judgmental rather than self-critical are more likely to promote recovery when adversity, such as a mental health condition, is experienced. As suggested by Neff, Hsieh, and Dejitterat (2005), one mechanism by which self-compassion acts as a buffer against stress is by promoting positive reappraisal.

Reappraisal is hypothesised to decrease the impact of potentially distressing mental content by providing individuals with a sense of space or distance between themselves and the disturbing thoughts or feelings, allowing for a more adaptive response to stress and adversity (Shapiro, Carlson, Astin, & Freedman, 2006). Reappraisals that incorporate self-compassion and a sense of self-kindness, common humanity, and mindfulness are likely to promote an adaptive response to adversity while also promoting psychological well-being. This has been supported in the literature with reappraisal related to decreased stress and improved mental health outcomes (Bower, Low, Moskowitz, Sepah, & Epel, 2008; Carrico et al., 2006). This appears particularly relevant for young adults, who have been found to be more sensitive and reactive to stressors (Sneed, Hamagami, McArdle, Cohen, & Chen, 2007).

LKM is one means by which self-compassion and positive reappraisal can be developed. LKM has been described as a meditation practice utilised to increase feelings of warmth and caring for the self and others (Salzberg, 1995). The clinical utility of this intervention has been demonstrated in earlier research. In outpatient settings, LKM has been demonstrated to improve the symptomatology of patients with schizophrenia and other psychotic symptoms (Johnson et al., 2011) and patients with PTSD (Kearney et al., 2013). These studies, which show the benefits of LKM with patients with psychotic and

trauma-based conditions are particularly relevant to acute inpatient mental health units, where such presentations are common. With the emphasis on brief, crisis admissions in the Australian context, the focus of treatment in the acute mental health inpatient setting tends to be biologically driven, with a narrower focus on attending to the crisis at hand. More psychologically driven, therapeutic interventions tend to be viewed as most appropriate for the community, or outpatient setting. As such, LKM based interventions have not been previously evaluated in acute inpatient mental health settings. This appears to be a missed opportunity for enhancing the recovery process, as such an intervention holds promise in this setting.

In addition to decreasing mental health symptomatology, LKM based interventions have been demonstrated to increase the experience of positive emotions. A number of studies provide evidence that the experience of positive emotions, induced by LKM training, build durable personal resources (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Kok et al., 2013). This is consistent with Fredrickson's (1998) broaden and build theory of positive emotions, whereby Fredrickson posits that the experience of positive emotions momentarily broadens the scope of an individual's attention and thinking, leading to the development of personal resources and growth. In the current program of research, the PERC<sup>2</sup> Up model of recovery is applying the basic premise and theory to the acute mental health inpatient setting, while utilising LKM as the mechanism to promote this change by providing opportunities to experience positive emotions. Clinically, this model suits the acute mental health inpatient setting well as patients are often admitted with a narrow focus on the crisis that they are facing. Treatment that is able to broaden this perspective while also building strengths and resources will greatly assist capacity for recovery.

In addition to promoting the development of self-compassion and the experience of positive emotions, LKM has been demonstrated to enhance social connectedness and to benefit relationships. Kok et al. (2013) found that LKM participants who reported experiencing more positive emotions also reported more gains in perceived social connection. Consistent with the broaden and build theory, the authors suggest that the experience of recurrent momentary positive emotions increases feelings of social belonging, which in turn opens people to more experiences of positive emotional and social experiences. The authors found that over time, this upward spiral of recovery, where one positive development leads to other positive developments, appears to benefit health. Kok et al. suggest that this upward spiral dynamic has the potential to project individuals onto self-sustaining pathways of growth and development. Such an upward spiral dynamic may also be useful in promoting recovery from health problems or other adversity, such as admission to an acute mental health inpatient facility, which has not been previously examined. While these above described LKM studies involved interventions lasting a number of weeks, research by Hutcherson et al. (2008) suggests that the LKM can be taught to participants with significant benefit in a relatively short period of time (i.e., seven minutes). The brevity of the intervention is important in the current context given the brief admission periods (and therefore brief windows for intervention) along with decreased concentration that can accompany acute mental health conditions.

Developing social connectedness in individuals with mental health conditions has been shown to be an important factor in promoting recovery, as social connectedness can be seen as both a cause or social determinant of mental health issues (Almedom, 2005) and a consequence of the experience (Perkins et al., 2014). The experience of mental health conditions and the experience of treatment in mental health services can disrupt an individual's life course, achievements, developmental milestones, and social roles (Hunt &

Stein, 2012). Young adults have been found significantly more likely to experience both symptoms of depression and anxiety, with higher rates of suicide, compared with peers reporting more social connectedness (Glover, Burns, Butler, & Patton, 1998; Social Exclusion Unit, 2004; Twenge, 2000). Mental health consumers can experience multiple barriers to social connectedness, including symptomatology of mental health conditions, loss of friendships due to mental health struggles, and social stigma (Hirschfeld et al., 2000). Interventions promoting a sense of social connectedness show promise in promoting recovery, improved relationships, and community integration.

In the final study of this program of research, the above-described PERC<sup>2</sup> Up model of recovery informed the development of a brief recovery-oriented psychological intervention which aims to promote recovery in an acute mental health inpatient setting for young adults. Consistent with the broaden and build theory, the brief recovery-orientated psychological intervention being developed in this program of research aims to increase the experience of positive emotions, broaden perspective (or increase positive reappraisal) and increase self-compassion and social connectedness, thereby increasing psychological well-being. LKM was chosen as the mechanism of change in the psychological intervention given its demonstrated ability to generate positive emotions, positive reappraisal, self-compassion, and social connectedness. LKM has also been demonstrated to promote changes in a brief period of time, which is necessary in an acute mental health unit where the average length of stay is under two weeks. Clinically, prior to undertaking this project, the researcher observed that the LKM intervention is well received and can have a noticeably positive effect. This program of research provides an opportunity to empirically test and validate these clinical observations.

## **Research Aims and Objectives**

The aim of this program of research was to support Australia's national mental health strategy by promoting a recovery-oriented approach to mental healthcare with young adults in an acute inpatient mental health setting. The initial objective was to systematically review the literature on psychological interventions in the acute mental health inpatient setting to identify gaps in the research (Study 1). This served to guide the program of research that followed in addition to providing a comprehensive update regarding this area of research (or lack thereof). Another objective was to develop and validate the PERC<sup>2</sup> Up model of mental health recovery, with young adults in university and acute inpatient mental health settings (Study 2). This research examined the role of positive emotions, positive reappraisal, self-compassion, and social connection in promoting psychological well-being, while identifying a pathway to mental health recovery and providing specific points of intervention for clinicians working in the acute mental health inpatient setting. The next objective was to make comparisons between young adults admitted to acute mental health inpatient settings and young adults in university settings (Study 3). As will be discussed in Chapter 2, recent surveys have highlighted the mental health struggles of university students. To explore whether the PERC<sup>2</sup> Up model and subsequent recovery-oriented psychological intervention has applicability to wider university settings, the aim of this study was to investigate whether young adult university students have comparable mental health to that of young adults in the acute mental health inpatient setting. If university students were found to have comparable mental health to inpatients, this would highlight the need for and provide support for the use of similar recovery-oriented interventions in university settings. The newly developed PERC<sup>2</sup> Up model then provided the basis for the development of a brief recovery-oriented psychological intervention, incorporating LKM, on an acute inpatient

mental health unit for young adult patients, aged 18-25 years (Study 4). LKM was chosen as the mechanism of change in the recovery-oriented psychological intervention given its demonstrated ability to increase positive emotions, positive reappraisal, self-compassion, and social connectedness. The objective was to evaluate the feasibility and benefit of the intervention, while also collecting data about satisfaction with the intervention, further developing and contributing to the limited body of literature explaining pathways to mental health recovery in acute mental health settings. More specifically, this program of research intended to address the following:

1. (a) Limited research has examined the empirical support for recovery-oriented psychological interventions in acute mental health inpatient settings, and the most recent systematic review was more than a decade ago. One aim is to highlight gaps in the research by systematically examining the literature on psychological interventions promoting a recovery-oriented approach in acute mental health settings. These identified gaps will be addressed in subsequent studies in this program of research.
2. (a) Another aim is to provide a validated model of acute mental health recovery to provide points of intervention for individuals working in the acute mental health inpatient setting. To further develop knowledge of mental health recovery pathways, this will be accomplished by developing, evaluating, and validating the PERC<sup>2</sup> Up model of recovery by exploring the role of positive emotions, positive reappraisal, self-compassion, and social connectedness in promoting psychological well-being in a young adult population (including university and acute mental health samples) and how this might promote the mental health recovery process.
3. (a) Developing models and recovery-oriented psychological interventions for the young adult population appears crucial given their highlighted vulnerability to the

onset of mental health conditions and the documented struggles of individuals during this developmental stage. Another aim of this program of research is to compare the mental health of university students and acute mental health inpatients. This is a unique opportunity to explore similarities and differences between young adults in these settings. Similarities between university students and acute mental health inpatients would highlight the need for more recovery-oriented psychological interventions in university settings and suggest that interventions based on the PERC<sup>2</sup> Up model of recovery would also be applicable in this setting.

4. (a) The final aim is to conduct the first recovery-oriented psychological intervention evaluation in acute mental health settings in the Australian context with the intention of building a base of evidence-based practice in this under researched area. Specifically, this study will evaluate the feasibility and benefit of a brief, recovery-oriented psychological intervention, based on the PERC<sup>2</sup> Up model and utilising LKM as a mechanism for change, with young adult inpatients in an acute mental health unit. This recovery-oriented psychological intervention is intended to significantly increase reported levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being, compared to a treatment as usual (TAU) group. This study will utilise self-report measures, a satisfaction survey, pre and post LKM session ratings for immediate impact and benefit, and re-admission rates. Given the known complexities with conducting research in this setting, this study will also review and document the feasibility, challenges, and learnings in implementation to assist in future research in this area. This study incorporates findings from the earlier studies in this



program of research and addresses gaps in the acute mental health recovery-oriented intervention research.

## Chapter 2 – Literature Review

### Psychological Intervention Research on Acute Mental Health Inpatient Units

As the first aim of this program of research is to explore the literature on the effectiveness of recovery-oriented psychological interventions in acute mental health settings, the research will be outlined here in a traditional narrative literature review format to provide a broad overview, with the systematic review to come in the next chapter. In Australia and many other countries, such as the United States and United Kingdom, the focus of mental health services is providing community-based care and support, leading to higher thresholds for acute inpatient admissions, briefer treatment episodes or length of stay, and a focus on meeting the patient's most acute needs then quickly transitioning the patient back to the community. In this context, acute mental health units are occupied by the most acutely unwell consumers, often with high levels of distress and sometimes aggression, potentially making the unit less stable, less settled, and at times non-therapeutic (British Psychological Society, 2012). This can be an environment where patients are held against their wishes under the Mental Health Act and may be forced to accept treatment that they do not wish to have. While therapeutic engagement is needed in such stressful environments, acute mental health inpatient services have been criticised, whether fairly or unfairly, for being non-therapeutic (Schizophrenia Commission, 2012) and lacking in therapeutic opportunities and appropriate interventions (British Psychological Society, 2015). This highlights the need for further research and exploration in this area of psychological practice, including the development of new interventions and recovery pathways.

The need for increased access to psychological therapies on acute mental health inpatient units has been recognised (Royal College of Psychiatrists, 2009). There are a

number of challenges to providing psychological interventions on acute mental health wards, such as acuity of symptoms, very high levels of distress, diagnostic uncertainty, and unpredictable length of stay (Clarke & Wilson, 2009). The patient may also not be ready or motivated to engage. For these reasons, there is a shortage of studies evaluating recovery-oriented psychological interventions in acute mental health inpatient units. To date, much of the research on psychological interventions does not include those in acute settings or patients in the acute phase of a mental health condition. The conditions in acute mental health settings are often not conducive to “standard” therapeutic approaches, which include a detailed history, space for collaboration and reflection, and intervention with a predictable structure (Clarke & Wilson, 2009). While NICE guidelines recommend a minimum of 10-16 sessions of psychological intervention, this is not usually feasible on acute mental health units given limited access to beds and a focus on brief admissions. Moreover, due to acuity and heightened distress, patients are often not at their baseline level of functioning, which also impacts upon engagement. However, there is increasing evidence that therapies that are less intensive can also be beneficial (Hazell, Hayward, Cavanagh & Strauss, 2016).

Overall, there has been a dearth of evidence for the feasibility and efficacy of brief psychological interventions in acute inpatient mental health settings. Research examining recovery-oriented psychological interventions in acute settings has evaluated acceptance and commitment therapy (ACT) for psychosis (Gaudio & Herbert, 2006), cognitive behavioural therapy (CBT) for psychosis (Startup et al., 2004), compassion focused therapy (Heriot-Maitland, Vidal, Ball, & Irons, 2014), and dialectical behavioural therapy (DBT) for suicidal adolescents (Katz, Cox, Gunasekara, & Miller, 2004). This program of research will complete an updated, inclusive systematic review of the literature examining

the empirical support for mental health recovery-oriented psychological interventions in the acute mental health inpatient setting.

While comparisons are difficult given differences in treatment modality, length of treatment, and diagnosis of patients, studies overall demonstrate that psychological interventions on acute wards can be beneficial for patients. However, the feasibility and clinical usefulness of these studies needs to be examined and may vary from country to country. For example, in some studies (Katz et al., 2004; Schramm et al., 2007; Startup et al., 2004) the intervention offered was lengthy and intensive in nature. The clinical and practical utility of these studies may be limited in certain countries as the average duration of inpatient psychiatric hospitalisation is less than one week in the United States (Agency for Healthcare Research and Quality, 2016) and around 15.3 days in Australia (Australian Institute of Health and Welfare, 2022). On the acute mental health inpatient unit where the researcher works, the length of stay is around 1 to 2 weeks, depending on month and patients admitted at that time. These findings suggest that interventions in acute mental health settings may need to be briefer than customary psychological practices and interventions, depending on treatment context.

The first study in this program of research used a systematic quantitative literature review methodology as utilised in other published reviews (Steven et al., 2011; Guitart et al., 2012; Dunton et al., 2007) to review the literature on recovery-oriented psychological interventions in the acute mental health setting, while incorporating the PRISMA guidelines for systematic reviews (Page et al., 2021). The methodology for this type of literature review is outlined in Chapter 3. The aim of this study was to summarise the research to date in a systematic manner in this under-researched area as such reviews are minimal to date, with the intention of identifying gaps in the literature.

This review intended to complement other recent reviews, which were more specific in nature, occurring in the acute mental health inpatient setting. For example, the focus of the Wood and Alsawy (2016) review was on the qualitative experiences of mental health inpatients. In a thematic analysis, the authors found three major themes: the importance of collaborative and inclusive care, the importance of positive relationships in inpatient recovery, and the hospital being a safe and therapeutic environment. The review by Jacobsen et al (2018) was specific in nature and included studies with a focus on psychological interventions for psychosis. In this review, the authors found a wide range of research designs, interventions, and outcome measures, making overall interpretation of the evidence base difficult. They concluded that there is a clear need to improve the methodological rigour within inpatient research. Paterson et al (2018) conducted the first meta-analytical synthesis of brief psychological therapy delivered in acute mental health inpatient settings. Their focus was also specific in nature in including only controlled trials in this analysis and found that psychological therapies were associated with small to moderate improvements in psychotic symptoms at the end of therapy but that this effect reduced over time. The authors also found that psychological therapies in the acute setting were associated with reduced readmissions, depression, and anxiety. Similar to Jacobsen et al (2018), Paterson and colleagues found that the evidence in the review was of limited quality and that the type, format, and intensity of acute inpatient psychological therapies required to achieve sustained benefits have yet to be established. These reviews highlight that research in this area is in its early stages, with the complexity of the environment likely a barrier to methodological rigour. The systematic in the current program of research was deliberately broad in nature to include research with all research designs, diagnoses, and models of delivery.

## **Young Adult Mental Health**

All participants in the studies that follow are in the young adult demographic, so an overview of the uniqueness of this developmental stage is described below. Young adulthood has been described as a developmental period of significance when young adults transition from adolescence into adulthood and establish their social, psychological, and vocational identities. Because of the social, psychological, and biological changes that accompany this developmental period, this time is characterized by heightened vulnerability to the onset and development of a mental health condition. This is supported by epidemiological data, which suggests that 75 percent of individuals who experience a mental health condition develop their first episode by 25 years of age (McGory, Purcell, Goldstone, & Amminger, 2011).

This period has also been referred to “emerging adulthood” and spans from approximately 18 to 25 years of age (Arnett, 2000). For the sake of consistency and clarity, this period will be referred to as young adulthood throughout this document. Levinson’s (1978) theory of adult development, influenced by Erikson (1968) and referred to as the Stage-Crisis View, states that various developmental tasks must be mastered through each developmental stage. Developmental tasks associated with young adulthood include identity exploration and development, initiation of new roles, development of new social networks, increased opportunities for choices and independence, and decreased parental support and monitoring (Schulenberg & Maggs, 2002). Levinson’s theory, which includes an “early adulthood” stage, postulates that crises are experienced when these transitions are interrupted by internal or external factors. If a young adult is unable to successfully transition into adulthood, psychological well-being can be negatively affected (Padilla-Walker, Barry, Carroll, Madsen, & Nelson, 2008).

In Australia, research by Headspace and the National Union of Students, with respondents aged 17-25, found 70 percent of Australian university and TAFE students reported fair to poor mental health, and almost 66 percent reported high or very high psychological distress over the past 12 months. Furthermore, over the previous 12 months 59.2 percent reported feelings of hopelessness and worthlessness, 75.8 percent reported a period of low mood, and 35.4 percent of young adult students reported thoughts of suicide or self-harm. A survey of 38000 students in the United Kingdom found similar results, with 50.3 percent of respondents reporting thoughts of self-harm (9.4 percent with thoughts of self-harm often or always). One in three (33.9 percent) reported experiencing a psychological issue requiring professional help. While 87.7 percent reported the experience of anxiety, a concerning 42.8 percent reported anxiety often or always. Loneliness also appears to be a challenge for young adult students, with 33 percent reporting loneliness often or always. Interestingly, this survey found that students in their second and third years of university were struggling the most, reporting the highest levels of anxiety, loneliness, and substance misuse, with second year students reporting the highest levels of persistent thoughts of self-harm (12.1 percent). A stigma around mental health remains, with 75.6 of respondents indicating that they conceal their symptoms from their friends. A separate study of 14000 students in the United Kingdom found that university undergraduates were likely to report lower levels of well-being than those young adults aged 20 to 24 who were not studying, suggesting that while young adulthood involves increased psychological vulnerabilities, those studying are perhaps even more at risk.

For some young adults the transition to the university environment can be challenging, with moving away from home and family, making new friends, and encountering more independence and responsibility. A report by Orygen (2017), the

National Centre of Excellence in Youth Mental Health, found that there were a number of factors contributing to low levels of well-being in students: lack of sleep, poor diet, academic pressures, financial stress, being away from family, feelings of isolation, particularly for international students, and uncertain graduate employment. The current and prospective financial situations of students appear to be significant factors in contributing to student well-being. A study by the Australian Medical Students Association (2013) found that students under financial stress have double the rate of mental health difficulties compared to students without financial stress. This is concerning as a 2012 Universities Australia report found that most university students were living below the poverty line and had 30 percent more debt than students graduating just 6 years prior. With the increased costs associated with attending university, recent reforms in Australia mean that students will have more debt and will have to pay this back sooner (e.g., HECS repayment salary decreased from \$55000 to \$42000). With an increasing number of young adults attending university and over 14 million university students in Australia (including international students), the value of obtaining a bachelor's degree may be decreased in certain circumstances. Whereas a bachelor's degree would have led to employment in years prior, now higher-level degrees are desired by employers, meaning additional debt and financial stress for young adults (Department of Education, 2020). This is consistent with the above findings that university students in their second and third years, perhaps contemplating their lives and financial situations after university, reporting the highest levels of anxiety, loneliness, and substance misuse. With income and financial security identified as a social determinant of health by the World Health Organisation (WHO, 2022), social and structural interventions appear necessary, in addition to psychological interventions, to improve the well-being of university students.



Given the above challenges for university students, Orygen (2017) recommends that youth mental health programs be extended past secondary schools, which is when most government funded programs end. Given young adults are a high-risk group for developing mental health issues, such a change seems pivotal. While this developmental period can include increased vulnerability and instability, this period can also be an opportune time for psychological intervention, where adaptive coping skills can be taught with potentially long-term benefits (Furlong, 2009). The capacity for behaviour and personality change is maximized during young adulthood (Baltes & Staudinger, 2000).

There appears to be increasing awareness about the importance of mental health intervention during the young adult developmental period. There are now more programs that provide services that support young adults to the age of 25, rather than withdrawing services once a young adult turns 18. This includes a variety of early psychosis programs and general mental health initiatives, such as Headspace. Within the Gold Coast Mental Health Service, there is an acute mental health inpatient unit specifically for young adults, also showing a recognition about the unique challenges that those in this developmental stage often experience. The current program of research aims to examine empirical support for recovery-oriented psychological interventions for young adults in acute mental health inpatient settings. While the brief recovery oriented psychological intervention described in Chapter 6 focuses on the acute mental health context, such an intervention may also be applicable to young adults in other settings. In examining the above surveys on the mental health of university students, such interventions appear much needed.

## **Loving-Kindness Meditation**

One such psychological intervention that shows promise for application in the acute mental health inpatient setting is LKM. LKM has been described as a meditation practice utilised to increase feelings of warmth and caring for the self and others (Salzberg, 1995). It can be described as extending friendship to ourselves and others, as an inner knowing that that all our lives are inextricably interconnected. It is an acknowledgement that we all want to be happy and that we share the same vulnerability to change and suffering, which elicits a sense of caring (Salzberg, 2015). Loving-kindness is an English translation of the Pali word metta, which means “friendliness”, “love”, “benevolence”, and “good will.” It was originally prescribed as a meditation to help those who were fearful of a threatening situation and is viewed as a remedy for negative mind states (Germer & Salzberg, 2017; Salzberg, 1995).

Compared to mindfulness meditation, LKM incorporates more emotional aspects of experience and is intended to promote affective balance (May et al., 2011). That stated, LKM is centrally related to and includes the practice of mindfulness (Suzuki, 2011; Kuan, 2008). In fact, LKM is often included in the “original” mindfulness-based intervention, Mindfulness Based Stress Reduction (MBSR) by Kabat-Zinn (1982). In a review of 30 MBSR studies, Carmody and Baer (2009) found that 13 studies included LKM (either a half-day or full-day session). However, many authors did not report whether LKM was included, raising questions about the frequency with which LKM is included in MBSR interventions. In beginning mindfulness practice, the attentional focus within meditation is often the breath, or some external object (e.g., listening to sounds, eating a strawberry). In LKM, the attentional focus is wishing kindness and compassion to the self and others. The primary goal of LKM is to alleviate suffering (Fulton & Siegel, 2005) and the core

principles are intrapersonal (self-compassion and kindness) and interpersonal (connecting to others), both of which are likely to be beneficial in promoting mental health recovery.

In terms of how LKM is practiced, after an initial focus on the breath and greater present moment awareness, the practitioner is asked to bring to mind an image of another individual, or an image of the self. The image of other might be a loved one, an acquaintance, or even someone with whom the practitioner is in conflict. LKM involves directing compassion and wishes for wellness to others and the self using a number of set phrases, such as “May you/I be safe. May you/I be peaceful. May you/I be healthy. May you/I live with ease.” These can be modified to suit the practitioner and circumstances. LKM is designed to create changes in emotion, motivation, and behavior in order to promote positive feelings and kindness towards the self and others (Hutcherson, Seppala, & Gross, 2008).

While LKM has been researched substantially less than more established mindfulness-based interventions, such as MBSR and Mindfulness Based Cognitive Therapy (MBCT), existing research suggests that LKM is highly promising for improving positive affect and for reducing stress, anxiety, and mood symptoms (Hofmann, Grossman, & Hinton, 2011). LKM has previously been utilised to successfully cultivate self-compassion and social connectedness in clinical and non-clinical populations (Gilbert, 2005; Neff & Germer, 2013). A recent review of mindfulness-based interventions has indicated that LKM may be the most effective practice for increasing compassion in a variety of samples, including young adults in university settings (Boellinghaus, Jones, & Hutton, 2012). LKM has previously been utilised in interventions with college students (i.e., young adults; Smeets, Neff, Alberts, & Peters, 2014; Richards & Martin, 2012), with significant increases in self-compassion, mindfulness, and well-being observed post-

intervention. LKM has also been found to be beneficial in clinical settings. Johnson et al. (2011) examined the use of LKM with outpatient participants with schizophrenia and other psychotic symptomatology and found that this intervention was feasible and associated with, compared to baseline, significantly decreased negative symptoms and increased positive emotions and psychological recovery. In a pilot study Kearney et al. (2013) found that a 12-week LKM course significantly reduced depression and post-traumatic stress disorder (PTSD) symptoms, compared to baseline measures, among veterans diagnosed with PTSD. These studies, which show the benefits of LKM with patients with psychotic and trauma-based conditions are particularly relevant to acute mental health wards, where such presentations are common. Galante et al. (2014) conducted a meta-analysis of randomised controlled trials of kindness-based meditations. While this analysis was broad and included LKM as well as other kindness-based meditations, it found that kindness-based meditation was moderately effective in improving depression, mindfulness, self-compassion, and positive emotions.

Other studies have found that LKM can enhance social connectedness and can benefit relationships. For instance, in an experimental context, LKM training has been demonstrated to increase helping behavior and to increase empathic responses to the distress of others (Klimecki, Leiberg, Lamm, & Singer, 2013; Leiberg, Klimecki, & Singer, 2011). Kok et al. (2013) found that LKM participants who reported experiencing more positive emotions also reported more gains in perceived social connection. Consistent with the earlier results of Frederickson et al. (2008) and with the broaden and build theory of positive emotions, which is discussed in depth below, Kok and colleagues found that the experience of positive emotions prompted individuals to experience greater social connectedness and improve physical health, as measured by cardiac vagal tone, in an upward spiral dynamic. In other words, they suggest that the experience of recurrent

momentary positive emotions increases feelings of social belonging, which in turn opens people to more experiences of positive emotional and social experiences. Over time, this appears to benefit health. Kok et al. suggest that this upward spiral dynamic has the potential to project individuals onto self-sustaining pathways of growth and development. Such an upward spiral dynamic may also be useful in promoting recovery from health problems or other adversity, such as admission to an acute mental health inpatient facility.

While the above-described studies involved interventions lasting a number of weeks, research by Hutcherson et al. (2008) suggests that the LKM can be taught to participants in a relatively short period of time. In a controlled laboratory context with a community sample ( $M = 23$  years), the authors compared a LKM condition ( $n = 45$ ) to a controlled imagery condition ( $n = 48$ ) to assess the impact of the LKM intervention on affective responses towards the self and others. In this study, participants in the LKM condition were asked to rate their affective responses to photographs of themselves and others before and after the intervention. The authors found that participants who received seven minutes training in LKM showed significant improvements in feelings towards others and the self with small to moderate effect sizes. This finding supports the use of LKM in a brief intervention format as utilised in the current program of research. While the presented findings are preliminary and need to be interpreted with caution, LKM shows promise as an intervention for increasing the experience of positive emotions, compassion, and social connectedness (Hofmann et al., 2011).

### **Self-Compassion, Reappraisal, and Psychological Well-Being**

One concept that can be developed and enhanced through LKM practice and that shows promise as promoting psychological well-being and mental health recovery is self-compassion. Neff (2003) has defined self-compassion as composed of three primary

components: self-kindness, a sense of common humanity, and mindfulness. When showing self-kindness, inner dialogues are gentle and encouraging, rather than harsh and overly critical. Common humanity involves recognising or acknowledging that all humans fail and make mistakes. When common humanity is not kept in mind, individuals feel isolated, alone, and removed from others when considering their struggles and failures; this sort of tunnel vision can increase suffering (Neff, 2011). The mindfulness component of self-compassion involves awareness of our negative thoughts and emotions so that they are approached with balance and equanimity. Mindfulness of our negative thoughts and feelings means that individuals are open to experiencing painful thoughts and emotions, but at the same time, individuals do not become overidentified with these internal experiences and swept away by aversive reactions (Neff, 2003). Viewed in this light, increases in self-compassion have the capacity to change the manner, or process, in which individuals make self-evaluations, or appraise their current situations. Self-evaluations that are more caring and non-judgmental rather than self-critical are more likely to promote recovery when adversity is experienced. In a study with university students, Neff, Hsieh, and Dejitterat (2005) found that students with high levels of reported self-compassion were more likely to respond to a negative academic event with positive reappraisal, viewing this experience as an opportunity for growth and improvement. Individuals reporting high levels of self-compassion tended to interpret these negative events in less dire terms than their counterparts. In other words, self-compassion appears to act as a buffer against feelings of distress when faced with a stressor, such as a mental health condition.

As suggested by Neff et al. (2005), one mechanism by which self-compassion acts as a buffer against stress is by promoting positive reappraisal. Reappraisal, also referred to as decentering or re-perceiving, refers to the capacity to take a detached or objective stance

on one's thoughts and feelings (Fresco et al., 2007; Shapiro et al., 2006). Theoretically, reappraisal originated in the cognitive therapy tradition in which individuals are encouraged to observe thoughts in order to evaluate their accuracy (Teasdale et al., 2000). Reappraisal is hypothesized to decrease the impact of potentially distressing mental content by providing individuals with a sense of space or distance between themselves and the disturbing thoughts or feelings, allowing for a more adaptive response to stress and adversity (Shapiro et al., 2006). Reappraisal has been found to be related to decreased stress and improved mental health outcomes (Bower et al., 2008; Carrico et al., 2006).

Reappraisal is an integral element of Lazarus and Folkman's (1984) transactional theory of stress, which states that stress is the result of an imbalance between demands and resources, where an individual continuously monitors or appraises an event or ongoing situation and analyses whether a threat exists. This theory posits that appraisal of a stressful event, or adversity, involves both primary and secondary appraisals. While primary appraisal involves threat perception and consideration of implications for well-being, secondary appraisal (or reappraisal) refers to a cognitive-evaluative process whereby an individual considers whether they have the personal resources to cope with the stressor. If the demands of the event are perceived as greater than the individual's personal resources, then a stress response occurs (Anshel & Delany, 2001). Hence, the stress response is triggered following a subjective psychological assessment process. Positive reappraisal is a component of meaning-based coping that enables individuals to adapt successfully to stressful life events whereby these events are re-construed as benign, valuable, or beneficial (Garland, Gaylord, & Park, 2009). Building upon the Lazarus and Folkman theory, reappraisals that incorporate self-compassion and a sense of self-kindness, common humanity, and mindfulness are likely to promote an adaptive response to adversity while also promoting psychological well-being and the experience of positive

emotions. This appears particularly relevant for young adults, who have been found to be more sensitive and reactive to stressors (Sneed et al., 2007).

There is growing evidence that self-compassion is an important predictor of psychological well-being (Barnard & Curry, 2011; MacBeth & Gumley, 2012). Numerous studies have found that treating oneself compassionately when confronting personal suffering promotes psychological well-being. In her initial explorations of the self-compassion construct in an undergraduate population, Neff (2003) found that self-compassion was negatively associated with markers of maladjustment including self-criticism, depression, anxiety, and rumination. In a meta-analysis that included community, university student, and therapist samples, MacBeth and Gumley (2012) found a large effect size when examining the link between self-compassion and psychopathology across 20 studies, with self-compassion related to lower anxiety and depression. Similarly, in a sample of undergraduates ( $n = 40$ ), self-compassion has been found to be negatively correlated with thought suppression and avoidance coping strategies (Neff et al., 2005). Self-compassion interventions appear relevant in both acute and non-acute mental health settings with high levels of self-criticism across mental health diagnostic presentations, including depression, personality disorders, eating disorders, anxiety, and substance abuse (Blatt, 1995; MacBeth & Gumley, 2012).

Self-compassion has also been associated with the experience of positive emotional states. In a sample of 177 undergraduates, Neff, Kirkpatrick, and Rude (2007) found that self-compassion was significantly and positively related to self-report measures of happiness, optimism, and positive affect. Self-compassion has also been positively related to life satisfaction and social connectedness (Neff, 2003). These findings suggest that self-compassion not only promotes a kinder, more gentle approach towards the self but



that it also promotes a greater sense of connection to others. Gilbert (2005) suggests that self-compassion enhances well-being because it assists individuals in feeling cared for, emotionally calm, and socially connected. While these studies suggest that self-compassion promotes psychological well-being, limited conceptual models have been developed and examined to explore the pathway from self-compassion to psychological well-being. Furthermore, there is scope to further develop and evaluate the use of interventions designed to cultivate self-compassion.

The correlational studies discussed above provide initial evidence that interventions aimed at increasing self-compassion may also promote improvements in these specific domains in addition to broader psychological well-being. An additional benefit in self-compassion interventions is that, even when brief, they have demonstrated their capacity to produce sustainable mental health changes, including significant reductions in depression three months post-intervention (Shapira & Mongrain, 2010). Hence, self-compassion interventions appear relevant for acute settings show promise as interventions promoting recovery following the experience of acute mental health problems. To date, only one self-compassion intervention has been evaluated on an acute mental health ward (Heriot-Maitland et al., 2014). This study found that compassionate based approaches are feasible on acute mental health wards and found significant decreases in distress ratings and significant increases in calmness ratings after compassion-based therapy sessions. Further research is needed to develop the feasibility and empirical support for recovery-oriented psychological interventions aimed at increasing self-compassion in acute mental health settings.

## **The Relationship between Self-Compassion and Mindfulness**

Mindfulness involves being aware of present moment experience in a clear and balanced manner (Brown and Ryan, 2003). Mindfulness involves an openness to thoughts, emotions, and sensations that arise in awareness with an attitude of non-judgement and non-resistance (Bishop et al., 2004). Kabat-Zinn (2003) has indicated that mindfulness practice involves attention without judgment and has an “affectionate and compassionate quality” (p. 145).

The constructs are similar in that mindfulness and self-compassion are both important concepts in Buddhist writings regarding alleviating human suffering (Kornfield, 1993). Both constructs involve turning toward painful experiences with acceptance so that the destructive processes of reactivity are lessened (Neff & Dahm, in press). While overlap appears to exist between the mindfulness and self-compassion construct, Birne, Speca, and Carlson (2010) make distinction between the two. These authors indicate that mindfulness is more general in that it applies to increased awareness of all experience, whereas self-compassion focuses on the experience of suffering. In a sense, mindfulness appears to be a prerequisite for self-compassion in that individuals need to be mindfully aware of their own suffering to be able to extend compassion towards themselves. Unlike mindfulness, by definition self-compassion includes the additional elements of self-kindness and common humanity. In other words, when painful experiences arise, self-compassion involves comforting oneself and remembering that these experiences are part of being human, while mindfulness does not. While mindfulness is a way of relating to internal experience, self-compassion is a way of relating to the experiencer who is suffering (Germer, 2009).

Some researchers have proposed that self-compassion is a key mechanism by which mindfulness-based interventions improve well-being (Baer, 2010). In developing the Five Facet Mindfulness Questionnaire, Baer, Smith, Hopkins, Krietemeyer, and Toney (2006) used factor analytic methods to deconstruct mindfulness into five facets: observing internal and external phenomena, describing internal and external phenomena, acting with awareness, remaining non-judgmental of internal experience, and non-reactivity to internal experience. Utilising university student samples, Baer et al. (2006) found that the non-judgmental facet of the Five Facet Mindfulness Questionnaire was the most highly correlated with psychological symptomatology, neuroticism, experiential avoidance, and emotional regulation difficulties. Using a sample of 504 online participants seeking assistance for anxiety related issues, Van Dam et al. (2011) found that self-compassion was a better predictor of depressive and anxious symptomatology than mindfulness, suggesting that self-compassion can play an important role in psychological well-being. Baer, Lykins, and Peters (2012) found similar results when comparing the predictive utility of self-compassion and mindfulness for psychological well-being. Their findings indicated that self-compassion was almost twice as strong a predictor of psychological well-being than mindfulness, though both were significant predictors. These findings suggest that the soothing qualities of self-kindness and the emotional safety provided by feelings of common humanity are important influences on psychological well-being.

These above findings should not be interpreted as suggesting that self-compassion is “better” or more advantageous than mindfulness. Conversely, self-compassion cannot exist without mindfulness and vice versa. In Buddhist writings, mindfulness and self-compassion are considered to be two wings of a bird, with both wings required to take flight (Kraus & Sears, 2009).

## **Importance of Social Connectedness and Mental Health**

Humans have a fundamental desire and perhaps an innate need for social connection and meaningful relationships (Harvey & Brophy, 2011; Walton Cohen, Cuir, & Spencer, 2013). Social connectedness refers broadly to the relationships that people have with others (Walton et al., 2013). Harris (2008) theorises that social connectedness was essential to human survival in prehistoric times, when survival depended upon social cohesion and cooperation. During this prehistoric period, alienation from the group could result in threats to survival, including starvation, exposure to the elements, and less protection from predators. Harris (2008) believes this link between survival and social connectedness remains engrained with psychological well-being strongly influenced by sense of social connectedness.

Consistent with Harris' theory, McCorkle and colleagues (2008) found that mental health service consumers who perceived themselves as having adequate social support reported better self-esteem, feelings of empowerment, better quality of life and functioning. Mental health consumers who perceived themselves as lacking social support reported more psychiatric symptoms, poorer perception of overall health, and reduced capacity for community integration. While some mental health consumers appear socially withdrawn (e.g., due to negative symptoms of schizophrenia), the Australian National Survey of Mental Health and Well-being found that nearly 45% of participants with psychosis felt that they were in need of good friends (Jablensky et al., 2000). In research with non-mental health consumers, young adults reporting poor social connectedness have been found to be two to three times more likely to experience depressive symptoms compared with peers reporting more social connectedness (Glover, Burns, Butler, & Patton, 1998). A meta-analysis of data collected with young adults found that lower levels

of reported social connectedness were related to higher levels of reported anxiety (Twenge, 2000).

Mental health consumers can experience a number of barriers to social well-being. The experience of mental health conditions and the experience of treatment in mental health services can disrupt an individual's life course, achievements, developmental milestones, and social roles (Hunt & Stein, 2012). For young adults, this might include attending school or university, employment, and forming relationships. Mental health symptoms (e.g., delusions, emotional dysregulation) can directly impact on an individual's ability to engage with others (Stein, Aguirre, & Hung, 2013; Valmaggia et al., 2013). Symptoms may also impact upon the willingness of others to engage socially with the individual affected by a mental health condition, with loss of friendships and relationships an indirect effect of the condition (Stein et al., 2013). The experience of a mental health condition can also negatively impact upon an individual's self-concept and willingness to engage in society. Mental health consumers can develop an internalised stigma, which has been associated with social avoidance, low self-esteem, decreased hope, and decreased self-efficacy (Stein et al., 2013). This can lead to a downward spiral for psychological well-being, with social isolation exacerbating mental health symptoms and increasing the risk of suicide (Social Exclusion Unit, 2004). These findings suggest that interventions promoting a sense of social connectedness may have an important role in disrupting this process and promoting recovery and community integration.

### **Positive Emotions and the Broaden and Build Theory**

As indicated above, the broaden and build theory posits that experiences of positive emotions, albeit brief, broadens people's perspectives and thought-action repertoires, which in turn serves to build their enduring personal resources, ranging from physical,

social, emotional, and psychological. In line with the developments in the positive psychology field, central to this theory is that cultivating positive emotions is beneficial in achieving psychological growth and improved well-being, with the aim of human flourishing. Rather than focusing on problems or symptoms, positive psychology focuses on what allows individuals, communities, and societies to flourish (Seligman & Csikszentmihalyi, 2000).

In contemplating an individual's internal experience, emotions are thought to arise with an individual's assessment of the personal meaning to an antecedent event. This appraisal may be conscious or unconscious and triggers a range of response tendencies, including subjective experience, facial expression, cognitive processing, and physiological changes (Diener, 1999). It is well established that negative emotions narrow the scope of an individual's attention and thinking (Schmitz, De Rosa, & Anderson, 2009). It is believed that this narrowing of cognition and attention, along with specific urge actions (e.g., fight or flight) is an evolved adaptation that has aided the survival of the human species in life threatening situations (Frijda, 1988). In an actual life-threatening situation or a perceived life-threatening situation, a narrowed focus and thought-action repertoire can provide quick, decisive action. However, this narrowed focus can be unhelpful in the context of mental health challenges. For example, this narrowed focus may result in a sense of feeling stuck for an individual with severe anxiety or for an individual experiencing suicidal ideation and accompanying "tunnel vision", or cognitive constriction. Cognitive constriction is a narrowing effect where it is difficult to see beyond the current circumstances and there does not appear to be another way, other than suicide, out of the crisis. While this effect is not permanent, it can increase the risk of an individual acting on suicidal thoughts in that moment. In working as the clinical psychologist on an acute mental health unit, the researcher has seen the lessening of this cognitive constriction

on a regular basis over the course of an admission. Upon arrival and admission after a suicide attempt or an escalation in thoughts about suicide, the individual struggles to see a way out of their crisis; however, after intervention from the various professionals on the unit, connecting with other patients, and a broadened or widened perspective, options other than suicide become apparent with an increased hope that change might be possible.

This is consistent with the undoing hypothesis as developed by Fredrickson and Levenson (1998). The undoing hypothesis is based on the idea that positive emotions are somehow incompatible with negative emotions. In other words, the affective system cannot be narrowed (self-protecting) and broadened (self-expanding) at the same time. It is hypothesised that positive emotions may loosen the hold of negative emotions on the individual's mind and body by broadening the individual's perspective. To test this hypothesis, Fredrickson and Levenson conducted experiments and found that those who experienced positive emotions after a high activation negative emotion (e.g., an experience that heightened anxiety) showed faster cardiovascular recovery than those in a neutral control condition. In this light, positive emotions are able to undo the lingering aftereffects of negative emotions.

A downward spiral, as occurring in depression for instance, might include an initial sadness and increased rumination, along with isolation/withdrawal and fatigue. This isolation and increased time by self can result in further rumination, sadness, sense of being alone, negative beliefs about self, and so on. This may be accompanied and amplified by emotion consistent appraisal tendencies and cognitive biases that confirm these negative views of self, others, and the future.

The experience of positive emotions, on the other hand, promotes a wider perspective and broadened thought-action repertoires, increasing the array of thoughts and

actions that are thought to be possible and leading to the development of greater personal resources. Isen and colleagues provided foundational support for this theory through a series of experiments in the 1980's and 1990's. They found that people experiencing positive affect show patterns of thought that are flexible (Isen & Daubman, 1985), creative (Isen, Daubman, & Nowicki, 1987), integrative (Isen, Rosenzweig, & Young, 1991) and open to information (Estrada, Isen, & Young, 1997). Isen suggested that positive affect results in a "broad, flexible cognitive organization and ability to integrate diverse material" (Isen, 1990, p. 89).

In a variation of the broaden and build theory, Losada (1999) postulates that a 3-to-1 ratio of positive to negative emotions is needed to experience the broaden and build effect characterised by personal growth, resilience, and connectedness. This is due to the negativity bias, which states that, due to the potency of negative emotions, positive emotions would need to outnumber them. In other words, an affective balance that exceeds a 3-to-1 positivity ratio will build resilience to stressful life events. Hence, any intervention with the intention of increasing positive emotions, particularly in mental health settings, needs to cultivate the regular experience of positive emotions to produce the broaden and build effect. Garland and colleagues (2010) suggest that LKM and mindfulness are two interventions that can increase the experience of positive emotions and increase positive affective balance. In Chapter 6, the brief recovery-oriented psychological intervention considered this and included a multi-modal intervention, with participants provided with the opportunity to engage in the intervention daily. Participants were also be provided with a bracelet which prompts them to engage in an abbreviated version of the intervention hourly. Learning to generate positive emotions through LKM can lead to a more positive affective balance, pushing an individual towards the 3-to-1 positivity ratio, with higher



positivity ratios potentially overriding transient negative emotions and buffering against stressful life events (Garland et al., 2010).

In both community and acute mental health settings, interventions aiming to increase positive emotions appear to be of great utility. For example, patients who are admitted to acute mental health units are often experiencing heightened distress due to mental health conditions like psychosis, and negative emotions, such as severe anxiety or depression. Interventions aimed at generating positive emotions may play a role in broadening perspective and thought-action repertoires and may serve to undo or lessen the lingering aftereffects of negative emotions. In addition to broadening perspective and lessening the impact of negative emotions, according to the broaden and build theory, positive emotions, while fleeting, can have long lasting consequences by building individual growth, resilience, and social connectedness, thereby promoting psychological and emotional well-being and overall recovery from mental health conditions. The ability to generate positive emotions appears to promote resilient coping. Block and Kremen (1996) found that individuals scoring high on ego-resilience experience more positive emotions than individuals reporting less ego-resilience, even though both groups reported comparable negative emotions. This difference in positive emotions appears to account for resilient individuals' ability to rebound from adversity and to continue to grow (Fredrickson et al., 2003). Positive emotions can lead to cognitive reappraisal, allowing individuals to find positive meaning in negative circumstances (Tugade & Fredrickson, 2004). This evidence that positive emotions build resilience supports the postulation that interventions intending to develop and increase positive emotions are likely to benefit those facing adversity and recovery from a mental health hospital admission.

A number of studies provide further evidence that the experience of positive emotions builds durable personal resources (Fredrickson et al., 2008; Kok et al., 2013). This is consistent with the positive psychology movement, which has argued that it is necessary to consider well-being not only in terms of the absence of psychopathology, but also in terms of human strengths and potentials (Seligman & Csikszentmihalyi, 2000). Using a non-clinical sample of computer software employees ( $n = 139$ ) recruited through their workplace, Fredrickson et al. (2008) conducted a randomised control trial (intervention vs control group) to examine whether a LKM intervention would result in the increased experience of positive emotions and the subsequent development of personal resources, including resilience and mindfulness. This study was designed to test Fredrickson's (1998) broaden and build theory of positive emotions outlined above. The authors chose to utilise LKM because of its affective focus and its emphasis on creating warmth and compassion for the self and others. This meditation training included six weekly 60-minute sessions.

In the above-described randomised control trial, Fredrickson and colleagues (2008) used structural equation modelling to test the build component of this theory by attempting to ascertain whether the experience of positive emotions led to an increase in personal resources. The authors found that, consistent with the broaden and build theory, the LKM intervention led to increases in a range of positive emotions, which were in turn related to increases in a variety of personal resources, including positive relationships with others, good physical health, hope, self-acceptance, and mindfulness. Fifteen months later, Cohn and Fredrickson (2010) conducted a follow up study to determine the long-term effectiveness of the LKM intervention. With a retention rate of 70 percent, 95 participants ( $n = 45$  for the intervention group;  $n = 50$  for the control group), from the original study agreed to participate in this follow up. In addition to measuring all variables, including

resilience and mindfulness, the authors asked participants about their frequency of meditative practice. Within the intervention group, they found that all participants, regardless of whether or not they continued meditating, maintained the gains in personal resources (e.g., positive relationships with other, hope, mindfulness) gained in the initial intervention.

Similar to Frederickson et al. (2008) and consistent with the broaden and build theory of positive emotions, Kok and colleagues found that the experience of positive emotions prompted individuals to experience greater social connectedness and improve physical health, as measured by cardiac vagal tone, in an upward spiral dynamic. They suggest that the experience of recurrent momentary positive emotions increases feelings of social belonging, which in turn opens people to more experiences of positive emotional and social experiences. Over time, this appears to benefit health. Kok et al. suggest that this upward spiral dynamic has the potential to project individuals onto self-sustaining pathways of growth and development. Such an upward spiral dynamic may also be useful in promoting recovery from mental health problems or other adversity.

### **PERC<sup>2</sup> Up: A Model of Mental Health Recovery Incorporating Positive Emotions, Positive Reappraisal, Compassion, and Connectedness**

The recovery model of mental health has been developed to guide mental health care in response to what is perceived as an overly narrow traditional biomedical model (Clarke & Wilson, 2008). The recovery model provides a holistic view of people experiencing mental health conditions that focuses on the person, not just the symptoms. Rather than focusing exclusively on symptom resolution, the recovery focus emphasises the recognition of strengths and the development of resilience and autonomy in people experiencing mental health conditions. Rather than an avoidance of the negative aspects of

pathology and mental health symptoms, recovery is characterised as a positive goal of health and wellness. The recovery approach emphasises hope and a strong belief that it is possible for people with mental health conditions to regain and maintain a meaningful life, despite the experience of symptoms. While consumers may not have complete control of their symptoms, they can have control over their lives. The recovery approach aims to help assist people with mental health conditions and distress look beyond mere survival and existence and encourages them to move forward to set new goals.

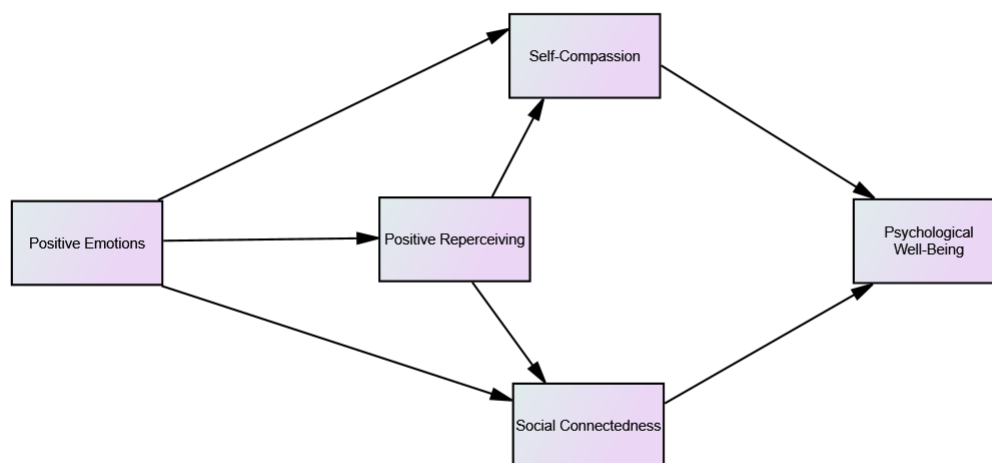
In systematically reviewing and synthesising the literature on mental health recovery frameworks, Leamy and colleagues (2011) identified the following processes as promoting recovery: connectedness, hope and optimism about the future, identity, meaning in life, and empowerment (or CHIME framework). These processes were identified as most relevant to clinical research and practice, with the authors suggesting that future research evaluate interventions aimed at addressing these processes. Conceptual similarities and overlap can be seen in the integrated model developed by Davidson et al. (2008). In integrating models of addiction and mental health recovery, Davidson et al. (2008) identified the following principles as cornerstones: establishing and maintaining relationships, renewing hope, confidence and commitment, understanding, accepting and redefining self, community involvement, incorporating illness and maintaining recovery, overcoming stigma and promoting positive views of recovery, and becoming an empowered citizen.

The current study built upon these models by identifying and exploring specific constructs that show promise in promoting mental health recovery. Referred to as PERC<sup>2</sup> Up, this model (see Figure 1 above) incorporates positive emotions, positive reappraisal, self-compassion, and social connectedness and applies the broaden and build theory of

positive emotions (Frederickson, 1998) to mental health recovery in the acute mental health inpatient setting. Similar to the above models, the PERC<sup>2</sup> Up model focuses on the mental health recovery process. Conceptually, similarities will be seen in that they are both strengths based, resource and identity building, focused on social connection and compassion for the self and others, and involve a healthy, hopeful view of the future and recovery process.

As depicted in Figure 1, consistent with the broaden and build theory, the hypothesised model suggests that the experience of positive emotions leads to a broadened perspective (positive reappraisal) and the subsequent development of personal resources, such as self-compassion and social connectedness, resulting in increased psychological well-being. This process is believed to propel an upward spiral of mental health recovery, with increased psychological well-being leading to more positive emotions, more positive reappraisal, and the development of further personal resources, and so forth. This perspective on change can be contrasted with that of CBT, where traditional CBT addressed emotional dysfunction by utilising the link between thought and feeling and working on the thought. Traditional CBT is difficult to apply in the acute mental health settings as it is very structured in terms of number of sessions and diagnostic specificity. Moreover, as individuals are generally admitted to acute mental health settings, CBT and DBT, in their traditional form, are delivered over a period of weeks and extend beyond the average length of stay. Emotion tends to lie at the cause of the admission into an acute mental health inpatient unit (Durrant et al., 2007). For example, an individual admitted is likely to be overwhelmed by emotion, acted in a risky manner in response to uncomfortable emotion, or has entered a mental state divorced from reality as a means of escape from it (e.g., psychosis) (Durrant et al., 2007). While some therapies, such as DBT, are well suited to the acute mental health inpatient setting due to their emotion centred

approach, the focus tends to be on reducing the experience of unwanted or undesirable emotions. In the PERC<sup>2</sup> Up model, on the other hand, the focus is on generating positive emotions as a mechanism for change, rather than reducing unwanted emotional experiences. Positive emotions are a means of creating positive reappraisals, which is in contrast to cognitive theories of mental health, where cognitive interventions are seen to drive shifts in perspective and emotional state. This approach in the PERC<sup>2</sup> Up model is in line with the recovery model, where recovery is considered more broadly and is more than simply addressing symptomatology.



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*Figure 2. Hypothesised relationships between positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being.*

## Research Questions

The overall aim of this program of research was to make valuable contributions to recovery-oriented psychological interventions in the acute mental health inpatient setting. This was accomplished by systematically reviewing the literature regarding recovery-oriented psychological interventions on acute mental health units and by developing and evaluating a model of mental health recovery to increase knowledge regarding pathways of mental health recovery. These studies informed the development and evaluation of a recovery-oriented psychological intervention targeting young adults in acute mental health settings. Specific research questions are detailed below:

1. (a) What is the empirical evidence for recovery-oriented psychological interventions in acute mental health settings? (b) What is the nature of these interventions and are they beneficial?
2. (a) What is the role of positive emotions, positive reappraisal, self-compassion, and social connectedness in promoting psychological well-being in a young adult population? (including university and acute mental health samples) (b) Will the data collected validate the hypothesised PERC<sup>2</sup> Up model of mental health recovery?
3. (a) Do young adults in university settings have comparable levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being to young adults in acute mental health inpatient settings? (b) How do these groups compare? (c) Do young adults in university settings need the same support and recovery-oriented psychological interventions as their peers in acute mental health inpatient settings?

4. (a) Does the proposed brief recovery-oriented psychological intervention, incorporating the LKM, significantly increase reported levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being, compared to treatment as usual? (b) Do the participants in the LKM intervention have lower readmission rates than their control counterparts? (c) Does the intervention have an immediate impact on participant levels of distress, calmness, connection to others, and hope for future? (d) Were the participants satisfied with the intervention and was it feasible?

### **Research Predictions**

The following predictions have been proposed:

#### **Study One**

1. Limited studies exploring the effectiveness of recovery oriented psychological interventions on acute mental health inpatient units will be identified; however, these studies will be found to be beneficial for mental health recovery for acute mental health patients.

#### **Studies Two and Three**

1. Using path analysis, the PERC<sup>2</sup> Up model of mental health recovery will be validated and found to be a good fit for the data.
2. Standardised path coefficients will indicate significant direct effects:
  - a. From positive emotions to positive reappraisal, self-compassion, and social connectedness.
  - b. From positive reappraisal to self-compassion and social connectedness.



- c. From self-compassion to psychological well-being.
  - d. From social connectedness to psychological well-being.
3. Standardised path coefficients will indicate significant indirect effects from both positive emotions to psychological well-being and from positive reappraisal and psychological well-being.
  4. The variables comprising the PERC<sup>2</sup> Up model of mental health recovery variables will predict significant variance in the model.
  5. Psychological well-being will significantly predict positive emotions, suggesting a reciprocal relationship between these variables.
  6. The university young adult sample will report comparable, or not significantly different, levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being to the acute mental health sample.

#### Study Four

1. After the intervention, the LKM intervention group will report significantly higher levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being compared to the TAU group.
2. These changes will be maintained at one month follow-up.
3. The TAU group will not have significant improvements in positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being.
4. In the intervention satisfaction survey, participants will report satisfaction with the intervention via a questionnaire developed for this study.

5. Participants in the recovery-oriented psychological intervention, incorporating LKM group, compared to the TAU group, will have lower readmission rates over a 6-month period.
6. This recovery-oriented psychological intervention, incorporating LKM will be found to be a feasible and beneficial intervention for use in the acute mental health inpatient setting with young adults.

## **Method**

### **Methodological Approach**

This project will utilise a sequential, mixed methods approach to initially systematically review the empirical support for recovery-oriented psychological interventions on acute mental health units. This is followed by, in developing a model of recovery and examining the effectiveness of a recovery-oriented psychological intervention in an acute mental health setting, an exploration of the role of positive emotions, positive reappraisal, self-compassion, and social connection in promoting psychological well-being and recovery from adversity, such as mental health conditions, in young adults. Mixed methods design studies incorporate the use of quantitative and qualitative methods as a part of the research process, which includes generating research questions, developing hypotheses, collecting data, analysing data, and interpreting results (Creswell & Clark, 2007; Teddlie & Tashakkori, 2009). Mixed methods research has been demonstrated to be useful approach for developing theoretical perspectives, as is the aim in this program of research (Johnson & Onuegbuzie, 2004).

### **Research Design**

This program of research is designed as a multiphase sequential study. Study one will utilise a process of quantitative systematic review, as developed by Pickering and

Byrne (2013), to analyse the existing literature on the evaluation of recovery oriented psychological intervention studies in acute mental health settings. Study two will explore the role of positive emotions, positive reappraisal, self-compassion, and social connectedness in promoting psychological well-being in young adults by developing and validating the proposed PERC<sup>2</sup> Up model of mental health recovery. Studies two and three will include young adult participants from both university and acute mental health settings, with study three making comparisons between these two populations (e.g., do young adults in university settings have comparable self-compassion and social connectedness than young adults in acute mental health settings?). These comparisons will explore the applicability of the PERC<sup>2</sup> Up model and the subsequent recovery oriented psychological intervention incorporating LKM for young adults in other settings, such as university. If young adults in university settings have comparable mental health to their acute mental health inpatient peers, additional recovery-oriented psychological interventions in the university context appear warranted. Study four will examine the feasibility and benefits of a recovery-oriented psychological intervention, based on the PERC<sup>2</sup> Up model of recovery and incorporating LKM on an acute mental health inpatient unit for young adults. The impact of this intervention on readmission rates will be collected. In acute settings, psychological interventions will ideally have an immediate impact or benefit, so each daily LKM session will incorporate pre and post session ratings. Qualitative feedback will be sought from participants regarding their experience of the intervention and their satisfaction.

## **Chapter 3 – Systematic Quantitative Literature Review: Psychological Interventions in Acute Mental Health Inpatient Settings**

### **Chapter Overview, Rationale, and Objectives**

The current study used a systematic quantitative literature review methodology as utilized in other published reviews (Steven et al., 2011; Guitart et al., 2012; Dunton et al., 2007) to review the literature on recovery-oriented psychological interventions in the acute mental health inpatient setting in a systematic manner, incorporating the PRISMA guidelines for systematic reviews. The aim of this study is to systematically review and quantitatively summarise literature in this under-researched area as such reviews are non-existent to date, with the intention of identifying gaps within the research. As indicated in the literature review in Chapter 2, this tends to be an area where research is not conducted due to various challenges, including patient acuity and lack of environmental control.

By using systematic methods to search and categorise the literature, this type of review provides reliable assessments of the current status of a field of research. The ways in which papers are found and selected are clearly articulated, minimising potential biases that occur in some narrative style reviews (Collins and Fauser, 2005). By conducting an analysis in this manner, more reliable conclusions can be drawn, and future research agendas can be mobilised to fill the identified knowledge gaps. This study served to inform the subsequent studies in this program of research, particularly Chapter 6, a feasibility study involving the evaluation of a recovery oriented psychological intervention incorporating LKM on an acute mental health inpatient unit for young adults. The results from this systematic quantitative literature review informed this study by identifying gaps and deficits in earlier research, also highlighting how the psychological intervention in this program of research can best contribute to the broader body of research in this area.

For this study, based on a review of the literature it was hypothesised that while limited studies exploring the effectiveness of recovery oriented psychological interventions will be identified, the interventions in these studies will be found to be generally beneficial for acute mental health inpatients. It was also hypothesised that the process of completing a systematic quantitative literature review would be helpful in summarising the literature to date, while also identifying gaps, thereby informing future research.

### **Method**

This initial study will involve a quantitative systematic review of the literature on psychological interventions in acute mental health settings. The quantitative systematic review, as developed by Pickering and Byrne (2013), allows researchers to systematically analyse existing academic literature to produce a structured quantitative summary of the field. This method can complement the traditional “narrative approach” to literature reviews (Pickering & Byrne, 2013). Narrative reviews on their own are highly subjective and open to a range of potential biases (Petticrew, 2001).

This approach is referred to as a quantitative review because it quantifies where there is research, but also where there are gaps. The review is comprehensive in that it assesses which different combinations of locations, methods, subjects, variables, and outcome measures have been used by researchers, and what they have found. This is a structured approach, with the 15 steps to quantitative systematic review briefly summarized below.

1. Define the topic of literature review.
2. Formulate research questions to be answered by the literature review (e.g., what categories will be explored – such as where and when the research was published,

the types of methods used, the subjects included, the variables measured, and the patterns in results identified).

3. Select search key words.
4. Select appropriate search databases.
5. Assess each publication for inclusion with a set criterion.
6. Develop a personal database (e.g., an Excel data file), including each study and the selected categories.
7. Enter 10 percent of the papers into the database to test the selected categories.
8. Modify the categories as needed.
9. Enter the remaining papers into the database.
10. Use the completed database to summarise each category (e.g., using percentages).
11. Draft methods section for publication.
12. Assess categories and determine which categories are the most important and why – this forms the basis of the review conclusions.

Steps 13, 14, and 15 relate to drafting the manuscript, including the results and discussion (13), the conclusions, introduction, abstract, and references (14), and revising the paper (15).

Original research papers in English language journals about psychological interventions on acute mental health units were obtained from searches of electronic databases including PsychINFO, Scopus, Web of Science, and EBSCO. Keywords used in the searches were: “psychological intervention”, “psychological trial”, “psychological therapy”, “cognitive behavioural therapy”, “CBT”, “acceptance and commitment therapy”, “ACT”, “compassion”, or “mindfulness” in combination with “acute mental health”, “mental health ward”, “mental health unit”, “psychiatric unit” and “acute psychiatric unit”.

These searches were conducted in April 2022. Only papers describing the results of original research and published in academic journals were included. Other recent reviews of psychological interventions on acute mental health units were also used to find additional papers. As the focus of this review was acute inpatient mental health wards, papers including outpatients were excluded (e.g., started treatment as an inpatient and continued as an outpatient; Bechdolf et al., 2004; Bechdolf et al., 2005). Papers involving specialist forensic inpatient wards or non-acute mental health wards (e.g., long-term rehabilitation wards; Bickerdike & Matias, 2001; McInnish et al., 2006) were also excluded. Because there are few publications in this area, the decision was made to minimise the exclusion criteria so as many studies as possible could be included.

For each research paper, the following information was recorded in a database (see Table 1 on page 53 for a summary – the database is a large Excel document and can be available upon request): year of publication, author, title, journal, country where research was conducted, type of intervention and length of treatment, participant age and diagnosis, number of participants, method/design, type of analysis utilised, variables measured, overall result, whether the research was a pilot or feasibility study, and whether particular challenges were noted in conducting the research. Some of the categories chosen were deliberately broad to encompass the diversity within the psychological intervention in acute mental health inpatient unit literature.

The papers were not assessed or weighted as more or less reliable based on their methodology. The database of papers was analysed to detect patterns, themes, and gaps in the literature. This literature mapping approach is useful in emerging and diverse areas of research such as that for psychological interventions on acute mental health inpatient units.

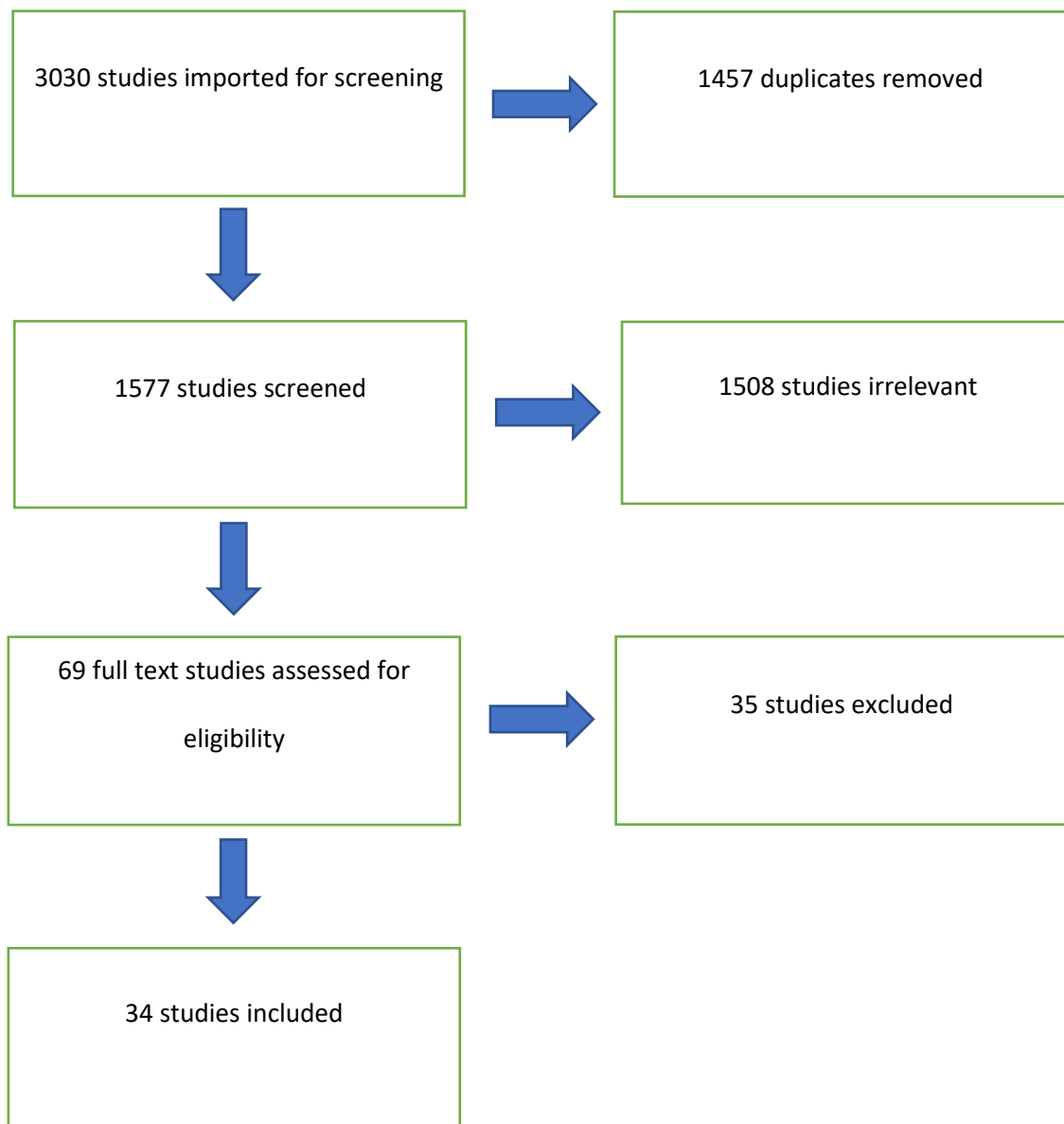
Such an approach allows for generalisations to be made in a systematic manner while also providing direction for future research.

PRISMA guidelines were used to transparently demonstrate the systematic review search process. PRISMA is an evidence-based set of items for reporting systematic reviews. The PRISMA flow diagram depicts the flow of information through the different phases of the systematic review. The PRISMA flow diagram for the current study is depicted below (Figure 3).

## **Results**

After database searches and locating studies via other recent reviews of psychological interventions on acute mental health units, 3030 studies were imported for screening. Of these studies, 3011 were located via the database searches, while 19 were imported separately after identification. After 1453 studies were removed due to duplication in the searches, 1577 studies were screened by title and abstract. After 1508 studies were identified as not relevant for this systematic review, 69 studies were assessed for eligibility via full text review. Of these studies, 35 were excluded, with the most common reasons for exclusion being wrong study design (e.g., not interventions) (11), wrong setting (e.g., not solely in the acute setting) (9), and wrong discipline (e.g., not psychologists) (8). After the systematic screening process was completed, 34 journal articles were identified that examined recovery oriented psychological interventions on acute mental health inpatient units. See Table 1 for a condensed summary of the 34 papers; the full database can be made available upon request. The PRISMA diagram in Figure 3 highlights the systematic screening process.





*Figure 3. PRISMA flow diagram.*

All of the papers were published between 1999 and 2022, with 15 papers published since 2015. These papers were published in a wide range of journals, with 2 published in each of the following: Behaviour Research and Therapy, British Journal of Clinical Psychology, Behavioural and Cognitive Psychotherapy, Clinical Psychology and

Psychotherapy, and Psychological Medicine. Fifteen of the 34 papers were produced in the United Kingdom (44 percent), while 7 were produced in the United States (21 percent), with the remainder conducted in European countries (Sweden, Switzerland, Italy, Turkey, Belgium, Germany), Australia, India or Canada. Of note, the one Australian study was conducted with adolescents aged 11 to 17, with the intervention an intensive trauma focused CBT.

*Table 1: Summary of Publications on Psychological Interventions in Acute Mental Health Inpatient Settings.*

Author (Year)	Country	Type of Intervention
Haddock et al. (1999)	UK	CBT for psychosis
Kerr et al. (2001)	UK	CAT for mania/psychosis
Bach & Hayes (2002)	USA	ACT for psychosis
Hall & Tarrier (2003)	UK	CBT for self-esteem
Katz et al. (2004)	Canada	DBT for suicidal adolescents
Startup et al. (2004)	Wales	CBT for psychosis
Guadiano & Bach (2006)	USA	ACT for psychosis
Veltro et al. (2006)	Italy	CBT
Durrant et al. (2007)	UK	CBT
Schramm et al. (2007)	Germany	Psychotherapy for depression
Aghotor et al. (2010)	Germany	MCT for psychosis
Kumar et al. (2010)	Indian	MCT for psychosis

Moritz et al. (2011)	Germany	MCT for psychosis
Raune & Daddi (2011)	UK	CBT
Vancampfort et al. (2011)	Belgium	Progressive muscle relaxation
Mortan et al. (2011)	Turkey	CBT for psychosis
Clarke et al. (2013)	USA	CBT
Heriot-Maitland (2014)	UK	Compassionate focused
Knight et al. (2014)	USA	Mindfulness
Owen et al. (2015)	UK	CBT for psychosis
Boden et al. (2016)	USA	ACT for trauma
Graham et al. (2014)	UK	Brief MI
Tyrberg et al. (2016)	Sweden	ACT for psychosis
de Roten et al. (2017)	Switzerland	Psychodynamic for depression
Wolff et al. (2018)	USA	CBT/psychosocial
Wood et al. (2018)	UK	CBT for psychosis
Haddock et al. (2019)	UK	CBT for suicide prevention
Paterson et al. (2019)	UK	CBT
Cabrera et al. (2020)	Australia	CBT for trauma/adolescents
Jacobsen et al. (2020)	UK	Mindfulness for psychosis
Saito et al. (2020)	USA	DBT for adolescents

Raphael et al. (2021)	UK	Clinical psychology input
Stroud et al. (2021)	UK	Compassion focused
Boynton & Sanderson (2022)	UK	CBT

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In terms of type of intervention offered, the majority of papers studied CBT, with 17 papers studying this type of intervention (50 percent). ACT was studied in 4 papers (12 percent) and Metacognitive (MCT) therapy was studied in 3 papers, with the remaining research studying cognitive analytic therapy, motivational interviewing, psychodynamic, interpersonal therapy, mindfulness-based interventions (2), compassion-based therapy (2), and DBT (2). Most of these interventions were delivered only individually (47 percent), while 32 percent were delivered only in group format, and 21 percent of interventions included both group and individual components. The lengths of these interventions varied considerably, with some interventions clearly aimed to be brief, some fairly long and intensive, and some falling somewhere in the middle. For those interventions falling in the middle range in terms of length, there was some variability in the length of intervention dependent upon participant circumstances (i.e., varying from 2 to 25 intervention sessions). The brief interventions (approximately 4 or less sessions) comprised 41 percent of the studies, while long and intensive studies (interventions 2 or more weeks in length or comprising many sessions and intensive input) comprised 29 percent of studies. The studies with interventions varying in length or an “open group” comprised 30 percent of studies. One study measured information about groups (e.g., attendance, re-attendance), rather than participants.

In terms of the participants involved in these studies, they tended to be aged in their 30's and 40's (47 percent). Four studies included participants under age 18, and the remaining 30 studies included adults aged 18 to 65. Approximately 44 percent of studies included only participants with a psychotic symptoms/diagnosis, while 38 percent were diagnosis non-specific. About 18 percent of papers studied participants with a depression or PTSD diagnosis.

All of the studies but one included a quantitative component of analysis and 11 (32 percent) included a qualitative component. This qualitative component was a satisfaction survey, a follow up interview about the intervention, or other feasibility data. Seventy-one percent of studies used within or between groups design with pre and post intervention measurements to determine effectiveness. The remaining studies measured change pre/post intervention session, participant data to historical data, group attendance and re-attendance, historical data via retrospective chart reviews, and feasibility data (e.g., satisfaction, helpfulness, and safety data, such as critical events). The most common variable measured was depression (32 percent). Aside from this variable, there was considerable variation in variables measured, with 44 variables measured in total between all 34 studies. The most common constructs measured were rehospitalisation after intervention (29 percent), psychosis (29 percent), and anxiety (18 percent).

In examining sample size, 47 percent included samples of less than 40 participants, 62 percent with less than 60 participants, and 74 percent with 80 or less participants. Only 6 studies (18 percent) had more than 100 participants. These sample sizes are likely reflective of the fact that 71 percent of the studies were self-identified as pilot or feasibility studies. Twenty studies (59 percent) explicitly discussed challenges with conducting research in this environment, including challenges with data collection, recruitment, the

nature of the acute mental health environment, patient acuity, difficulties with standardisation (a need for flexibility), and lack of engagement or limited uptake in the actual intervention. Despite the small sample sizes, all studies found results that reflected positive impact for the participants or that the interventions were deemed feasible in the acute setting. For instance, participants who engaged in interventions were less likely to be admitted back into hospital and had reduced distress or psychotic symptoms after the intervention. That said, a common theme in the research was that caution needed to be exercised due to the small sample sizes, with recommendations that further replication and research is required.

There were a number of methodological limitations impacting upon the quality of these studies. As indicated above, many (71 percent) of the studies were feasibility in nature and had small sample sizes (i.e., 47 percent of the studies with less than 40 participants), which limits statistical power and the generalisability of the findings. Similarly, many of these studies lacked control groups and internal validity. Only 9 (26 percent) of the studies were randomised controlled trials. Some of the studies used treatment as usual as the control group, so they did not control for non-specific therapy factors such as time and attention from a therapist. There are a number of methodological limitations inherent in the nature of research in acute mental health inpatient settings. For example, self-selection bias was evident, with participants deciding whether or not they would participate. Attrition bias was also a methodological limitation in many studies, with the possibility of those “dropping out” of the studies systematically differing from those who remain. The risk of bias attributable to lack of blinding of participants and clinicians was high given the nature of the interventions being studied.

## Discussion

The aims of this systematic quantitative literature review were to document where research has been conducted, with whom, using what methods, and what was found. By using this approach generalisations about the literature can be identified, while also identifying gaps and potential areas for future research.

In conducting this systematic quantitative literature review, the lack of research in this area is surprising. Despite this being an area of high mental health care expenditure, few papers have been published in this area, highlighting a need for future research in this area. In systematically examining the area of psychological interventions in acute mental health settings, only 34 papers were identified. That said, 11, or nearly a third of all papers identified, were published in the last 5 years, highlighting perhaps an increased willingness to conduct research in this setting and an increased acknowledgement of the importance of research in this space. The overall shortage is likely due to the many challenges associated with conducting research in this area, which was highlighted by many of the identified studies and will be discussed further below. While the earliest study in this area was from 1999, subsequent research has been intermittent and varied as reflected in the multitude of feasibility and pilot studies (71 percent).

Much of the research in this area reviewed above has been conducted in the UK (44 percent). It is noteworthy that only one of the studies identified was from Australia. This study (Cabrera et al., 2020) examined the effectiveness of an CBT based PTSD intervention for adolescents. In reviewing the research coming from a range of countries, it became apparent that each has their own differences and approaches to management in the acute mental health setting. This suggests a need for research in the Australian context to develop interventions and ways of evaluating the interventions suitable to this setting.

This review demonstrated that CBT and ACT were the primary interventions utilised in the identified studies, comprising 62 percent of all studies, with CBT the modality of treatment in 50 percent of studies. While further CBT and ACT studies in acute mental health settings are warranted, future research may wish to expand this focus to include other approaches to provide service users with more choices for treatment. A compassion-based approach, which is transdiagnostic in nature, appears a relevant and appropriate option, with increasing evidence that people with various mental health complexities experience a number of transdiagnostic commonalities, such as low self-worth, limited ability to self-soothe, and high levels of self-criticism (Gilbert & Irons, 2005; Heriot-Maitland et al., 2014). Such an approach was adopted in 2 feasibility studies identified above, with both finding that this approach is feasible and beneficial in this setting (Heriot-Maitland et al., 2014; Stroud et al., 2021).

The majority of the studies reviewed focused on interventions to treat psychosis. This seems a logical place to start research as many patients admitted to acute mental health units have psychotic disorders. However, future research may wish to expand this to include other disorders or to take a more transdiagnostic approach. Patients experiencing eating disorders, severe depression, suicide attempts, or personality disorders may also benefit from psychological interventions in acute mental health settings. On a unit with many different presentations, a transdiagnostic approach that allows all to participate, once well enough, may be the most equitable research approach. A transdiagnostic approach may also improve participant recruitment, as more participants meet study inclusion criteria.

There was considerable variation in the length of intervention in the studies. Just over 41 percent of the studies included interventions that are brief in nature and consisted



of 4 or less sessions. While such interventions are brief, they are likely the type of intervention most suited to acute mental health inpatient units in the Australian context. Some studies (e.g., Schramm et al. 2007; Startup et al., 2004) involved longer, more intensive interventions. For example, in the Schramm et al study, participants were offered 15 individual sessions and 8 group sessions. This research occurred on an acute inpatient unit in Germany, where longer admissions and therefore longer interventions are more feasible. In the Startup et al study, participants were asked to commit to 12 sessions, and up to 25 sessions were offered (though some only engaged in 2 or 3). Offering such interventions would not be possible in the Australian context given the day-to-day bed pressures and the emphasis on brief inpatient stays and community treatment.

A challenge that researchers will experience in the acute mental health context is finding a balance between internal and external validity. For instance, in Italy Veltro et al conducted a very rigorous study, where a group CBT intervention was fully integrated into the day-to-day care on the ward with substantial infrastructure to support this process. In this study, it was reported that 90 percent of inpatients engaged in the group intervention program. This is considerably higher than in other studies where this is reported. While an impressive study, this is not likely the norm on other acute mental health inpatient units so, while informative, the generalisability may be limited. The Schramm et al and Startup et al studies also offered lengthy interventions. The researcher has worked on an Australian acute mental health inpatient unit as clinical psychologist for approximately 7 years, and such interventions would not be possible in this health service, where the average length of stay varies between 7 and 10 days. While successful in their own context, the clinical and practical utility of these studies may be limited elsewhere as the average duration of inpatient psychiatric hospitalisation is less than one week in the United States (Agency for Healthcare Research and Quality, 2016) and around 15.3 days in Australia (Australian

Institute of Health and Welfare, 2022). On the other end of the spectrum, researchers may wish to pursue more “real world” or “practice based” evidence, as did over 40 percent of the studies in this review. Given the overall shortage of research in this area and the variation of systems and practices across different countries, perhaps the most pragmatic approach is for researchers to conduct studies that suit their practice context, acknowledging the limitations as needed. This will provide psychologists working in acute mental health settings with a broader understanding about what is effective psychological practice in this complex setting. These complexities and challenges in conducting research in this setting is likely a deterrent to researchers, which undoubtedly contributes to the shortage of research.

Similar to other recent reviews of research in the acute mental health inpatient setting (e.g., Jacobsen et al., 2008; Paterson et al., 2008), methodological limitations and issues around the quality of the research are evident in many studies. This was likely reflective of the methodological challenges in evaluating interventions in inpatient settings. The nature of the environment, the participants, and presentations makes implementation of more controlled trials, such as single blind randomised controlled trials, challenging. Because of these methodological challenges internal validity was lacking and the likelihood of bias was high (e.g., self-selection, attribution, lack of blinding). It is not possible, or ethical, to control for all elements of treatment each person is receiving (e.g., medication, time with other professionals). Attributing change to any single component of treatment is therefore very difficult. Non-randomised studies allow for more flexibility in conducting research in this complex setting. While these studies lack internal validity, they have an advantage in terms of external validity. The general shortage and overall quality of the research makes it difficult to draw definitive conclusions about what interventions are most effective in this mental health setting. While much of the research to date has been

feasibility in nature, future research needs to maximise both internal and external validity with adequately powered trials to overcome the limitations of the current evidence. That stated, the progression from promising pilot studies, to larger, well-designed randomised control trials may be a challenging one.

The majority of research reviewed has included participants aged 30 to 40 years. Future research may wish to expand this to include a younger population, such as under 18s, young adults, or an older population, such as 65 years and over. In considering human development and the life cycle, individuals are likely going to benefit from different intervention approaches, depending on age and stage of life. This supports an expansion of research in this area and a consideration of how interventions can be tailored to age and developmental stage.

There was some consistency in terms of methodology used in many of the studies reviewed. The majority of studies used a pre/post design, with a follow up measurement. This follow up measurement was either via file review (e.g., if the participant was readmitted into hospital) or by asking participants to complete another set of measures after a designated period of time (e.g., 4 months). Eight of the studies, feasibility in nature, incorporated a satisfaction survey into their analysis of the intervention, and two studies measured the impact of individual sessions (pre/post). Future research may wish to incorporate all three of these elements into an intervention. Feedback from participants about the nature of the intervention appears essential given the challenges observed in recruitment and data collection. Given the acuity of concerns on the unit as well as the brief length of stay, an evaluation of individual session impact is also likely to be beneficial.

In summary, there have been a number of areas for further research identified in this review. These include:

- A need for further research overall in this area given the relative shortage and lack of publications.
- A need for research in the Australian context.
- A need to expand the range of interventions offered in research.
- A need to focus on interventions that offer a transdiagnostic approach, rather than a focus on a specific diagnosis.
- A need to expand the data that is collected, incorporating pre/post/follow up measures, a satisfaction survey, and an evaluation of session impact.
- A need to include evaluate interventions on participants with a range of ages.
- A need for more methodological vigour.

In many countries, including Australia, psychologists are uniquely trained in conducting independent research as part of their clinical training as scientist practitioners. Psychologists can make valuable contributions to the acute mental health setting as evidenced by the aforementioned studies reviewed here. That said, conducting research in an environment where the medical model is dominant can be a challenge. Moreover, there are challenges in conducting research in the acute mental health environment, such as lack of environmental control, the acuity of symptoms, capacity issues, recruitment, and non-engagement with the intervention. The purpose of this study was to review the research in acute mental health settings and to identifying gaps within the existing research. Some of these identified gaps are addressed in the studies that follow within the current program of research. While a difficult environment to conduct research, psychologists have the potential to contribute and add value to the acute mental health inpatient setting while

assisting their fellow psychologists by providing additional insights into what is effective practice in this environment.

## **Chapter 4 - PERC<sup>2</sup> Up Model of Mental Health Recovery**

### **Chapter Overview, Rationale, and Objectives**

The literature review in Chapter 2 highlighted that there is a lack of validated models to elucidate the pathway to mental health recovery. The recovery model in mental health provides a holistic view of people experiencing a mental health condition that focuses on the person, not just the symptoms. Rather than focusing exclusively on symptom resolution, the recovery focus emphasises the recognition of strengths and the development of resilience and autonomy in people experiencing a mental health condition. Rather than an avoidance of the negative aspects of pathology and illness, recovery is characterised as a positive goal of health and wellness. The recovery approach emphasises hope and a strong belief that it is possible for people with mental health conditions to regain and maintain a meaningful life, despite the experience of symptoms. While consumers may not have complete control of their symptoms, they can have control over their lives. The recovery approach aims to help assist people with mental health conditions and distress look beyond mere survival and existence and encourages them to move forward to set new goals.

In developing the CHIME framework, Leamy and colleagues (2011) identified connectedness, hope and optimism about the future, identity, meaning in life, and empowerment as important mental health recovery processes. These processes were identified as most relevant to clinical research and practice, with the authors suggesting that future research evaluate interventions aimed at addressing these processes. The current study aimed to develop and validate a model of mental health recovery to provide tangible variables to target to improve psychological well-being.

The purpose of this study was to evaluate the PERC<sup>2</sup> Up model of recovery in a young adult sample, via path analysis. The variables chosen in the PERC<sup>2</sup> Up model of recovery were based upon several factors: pre-existing models of mental health recovery, experience in working in this setting and noticing what is relevant and effective, and a review of the literature. The broaden and build theory was chosen as a basis or starting point for the PERC<sup>2</sup> Up model of recovery as it is theoretically and clinically in keeping with the overall model of mental health recovery. The PERC<sup>2</sup> Up model is the application of the broaden and build theory to mental health recovery in the acute setting. As discussed in Chapter 2, the recovery model provides a holistic view of people experiencing mental illness that focuses on the person, not just the symptoms. Rather than focusing exclusively on symptom resolution, the recovery focus emphasises the recognition of strengths and the development of resilience and autonomy in people experiencing mental health conditions.

As described in Chapter 2, the broaden and build theory posits that experiences of positive emotions, albeit brief, broaden people's perspectives and thought-action repertoires, which in turn serve to build their enduring personal resources, ranging from physical, social, emotional, and psychological. In line with the developments in the positive psychology field, central to this theory is that cultivating positive emotions is beneficial in achieving psychological growth and improved well-being, with the aim of human flourishing. Rather than focusing on problems or symptoms, positive psychology focuses on what allows individuals, communities, and societies to flourish (Seligman & Csikszentmihalyi, 2000). While it is well established that negative emotions narrow the scope of an individual's attention and thinking (Schmitz, De Rosa, & Anderson, 2009), the experience of positive emotions, on the other hand, promotes a wider perspective and broadened thought-action repertoires, increasing the array of thoughts and actions that are thought to be possible and leading to the development of greater personal resources.

Individuals experiencing positive emotions show patterns of thought that are flexible (Isen & Daubman, 1985), creative (Isen, Daubman, & Nowicki, 1987), integrative (Isen, Rosenzweig, & Young, 1991) and open to information (Estrada, Isen, & Young, 1997). Positive emotions also appear to be incompatible with negative emotions, as stated in the undoing hypothesis developed by Fredrickson and Levenson (1998). In other words, the affective system cannot be narrowed (self-protecting) and broadened (self-expanding) at the same time. It is hypothesised that positive emotions may loosen the hold of negative emotions on the individual's mind and body by broadening the individual's perspective. In addition to broadening perspective and lessening the impact of negative emotions, according to the broaden and build theory, positive emotions, while fleeting, can have long lasting consequences by building individual growth, resilience, and social connectedness, thereby promoting psychological and emotional well-being and overall recovery from mental health conditions. Theoretically and clinically, it is evident how such a theory is applicable to acute mental health inpatients presenting with heightened distress, acute mental health concerns, and likely high levels of negative emotions.

As discussed in Chapter 2, the variables chosen for inclusion in the PERC<sup>2</sup> Up model of mental health recovery are positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. The PERC<sup>2</sup> Up model suggests that the experience of positive emotions leads to a broadened perspective (positive reappraisal) and the subsequent development of personal resources, such as self-compassion and social connectedness, resulting in increased psychological well-being. This process is believed to propel an upward spiral of mental health recovery, with increased psychological well-being leading to more positive emotions, more positive reappraisal, and the development of further personal resources, and so forth. This is depicted above in Figure 1.



Based on the above presented research and theories, the following predictions were developed:

1. Using path analysis, the PERC<sup>2</sup> Up model of mental health recovery will be validated and found to be a good fit for the data.
2. Standardised path coefficients will indicate significant direct effects:
  - a. From positive emotions to positive reappraisal, self-compassion, and social connectedness.
  - b. From positive reappraisal to self-compassion and social connectedness.
  - c. From self-compassion to psychological well-being.
  - d. From social connectedness to psychological well-being.
3. Standardised path coefficients will indicate significant indirect effects from both positive emotions to psychological well-being and from positive reappraisal and psychological well-being.
4. The variables comprising the PERC<sup>2</sup> Up model of mental health recovery variables will predict significant variance in the model.
5. Psychological well-being will significantly predict positive emotions, suggesting a reciprocal relationship between these variables.

## Method

**Participants.** The final combined sample included 281 participants, with 211 participants from the university sample and 70 from the acute mental health inpatient sample. The university sample was comprised of students aged 18-30. The university sample was collected by a fellow researcher who used a slightly different age range (i.e., 18-30 instead of 18-25). Convenience sampling was utilised for university participant recruitment. Of the university participants, 51 (24 percent) were aged between 18 and 20, while 160 (76 percent) were aged between 21 and 30. In terms of gender, 46 (22 percent) identified as males and 165 (78 percent) identified as females. In terms of year of university study, 47 (22 percent) were in their first year, 36 (17 percent) in the second year, 40 (19 percent) in their third year, 52 (25 percent) in their fourth year, and 36 (17 percent) in their fifth or sixth year of study.

For the acute mental health inpatient sample, ethics approval was gained from the Gold Coast Hospital and Health Service Human Research Ethics Committee (HREC/16/QGC/28). Participant ages ranged from 18 to 25 years of age ( $M = 21.23$ ,  $SD = 1.91$ ). The sample was comprised of 32 (45.7 percent) females and 38 (54.3 percent) males. Diagnostically, the sample was diverse as is customarily the case on acute mental health units. In terms of primary diagnoses, the sample was comprised of 35 participants with a psychotic disorder (including schizophrenia, drug induced psychosis, schizoaffective disorder, amongst others), 10 with bipolar affective disorder (BPAD), 9 with borderline personality disorder (BPD), 8 with anorexia nervosa, 5 with depression or dysthymia, and 3 with adjustment disorder (admitted after a crisis and either suicide attempt or increased suicidal ideation).

The data collected from acute mental health inpatients and utilised to evaluate the PERC<sup>2</sup> Up model of recovery was the baseline, or PRE data, for participants from both the intervention and TAU groups from intervention study to follow (Chapter 6). To account for the potential heterogeneity within the combined sample (i.e., university students vs acute mental health inpatients) the goodness of fit of the acute mental health inpatient sample data was explored after initial validation of the model in the larger sample.

**Materials.** Participants completed questionnaires detailing demographic information and self-report measures of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. The following scales were used: the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) measuring positive and negative mood states; the Positive Reappraisal subscale of the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2001) measuring positive reappraisal cognitive coping; the Self-Compassion Scale (SCS; Neff, 2003) measuring self-compassion; the Social Connectedness Scale-Revised (Lee & Robbins, 1995) measuring connectedness to the social world; and the General Health Questionnaire-12 (GHQ-12; Goldberg, 1978) measuring psychological well-being. While the GHQ is a brief, validated measure of psychological well-being, it is often utilised in community settings as a screening tool. As such, it should be noted that this measure may be elevated, or at its ceiling, when used in acute settings. As a point of comparison, Donath (2001) reported that in a sample of 10614 Australians in the general population, the mean score on the GHQ-12 was 8.74 (95% CI = 8.63 – 8.85), and in a sample of 1814 United Kingdom participants, who presented to their local General Practitioner, the mean GHQ-12 score was 12 (*SD* = 5.9) (McCabe et al., 2001).

These questionnaires were chosen for their clinical utility, psychometric properties, but also their brevity. Attempts were made to minimise the number of items that acute mental health inpatients needed to respond to, due to the likely impact of an acute mental health presentation and admission on cognitive processes, such as attention and concentration, in addition to increased likelihood of life stressors and social crises. These questionnaires were utilised in each study that follows and will be described in detail below.

### **Self-Compassion Scale (SCS)**

The Self-Compassion Scale (SCS; Neff, 2003) was developed to measure the construct of self-compassion. According to Neff (2003), self-compassion includes being kind towards oneself in instances of pain or failure, perceiving one's experiences as a part of the larger human experience, and holding painful thoughts and feelings in balanced awareness. The SCS includes six subscales: Self-kindness, Self-judgment, Common Humanity, Isolation, Mindfulness, and Over-identification. Items include "I try to be loving towards myself when I'm feeling emotional pain" (Self-kindness) and "When times are really difficult, I tend to be tough on myself" (Self-judgment). Each statement is scored on a five-point Likert scale ranging from "almost never" to "almost always." Only the total SCS score was utilised in the current study. The SCS has demonstrated good internal consistency and test-retest reliability over a three-week interval (Neff, 2003). The mean value of Cronbach's alpha in the present study was .94. The SCS has demonstrated negative relationships with self-criticism, depression, anxiety, and rumination, while demonstrating positive relationships with social connectedness, emotional intelligence, and psychological well-being. The factor structure of the SCS has been supported by confirmatory factor analysis (Neff, 2003, 2009).

### **Positive and Negative Affect Schedule (PANAS)**

The PANAS is a widely used self-report measure to assess two broad domains of affect, termed positive affect and negative affect (Watson, Clark, & Tellegen, 1988). Both positive affect and negative affect represent largely independent constructs ranging from low to high levels of emotional experience (Tellegen et al., 1999). The PANAS is widely recognized as a tool that can measure variation in affect in clinical and community settings, which has been widely used in theoretical work on emotion. The PANAS contains 20 items that yield two subscales (positive affect and negative affect) of 10 adjectives each. For each adjective, participants respond with regards to how they felt “during the past week” on a 5-point scale from very slightly to very much. In the current study, the primary interest was that of positive affect, or positive emotion. Positive affect reflects the extent to which a person feels enthusiastic, excited, and active. Increased levels of positive affect indicate a state of concentration, pleasurable engagement, and high energy. Adjectives measuring positive affect include: interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, and active. PANAS scores have demonstrated adequate internal consistency reliability, test-retest reliability, and convergent and discriminant validity (Watson et al., 1988).

### **Cognitive Emotion Regulation Questionnaire (CERQ)**

The CERQ is a 36-item measure developed to assess the cognitive components of emotional regulation in adolescents and adults (Garnefski et al., 2001). This questionnaire is comprised of 9 cognitive emotion regulation strategies, with each referring to what someone thinks after the experience of threatening or stressful events. Each of these cognitive emotion regulation strategies is a separate subscale. In the current study, only the positive reappraisal subscale was administered. Positive reappraisal refers to thoughts of

creating a positive meaning to the threatening or stressful event in terms of personal growth. This was viewed as particularly pertinent to an inpatient admission experience or event. A cognitive strategy such as positive reappraisal may enable people to more easily tolerate or navigate negative life events (Garnefski & Kraaij, 2006). In the CERQ, cognitive emotion regulation strategies are measured on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). Individual subscale scores are summed rendering a score ranging from 4 to 20, with higher scores reflecting higher levels of that cognitive emotion strategy. For the positive reappraisal subscale, items include “I think I can learn something from the situation”, “I think I can become a stronger person because of what has happened”, “I think that the situation also has its positive sides”, and “I look for the positive sides of the matter”. In terms of the scale’s psychometric properties, the factor structure has been supported by principal component analysis and confirmatory factor analysis. Cronbach’s alphas have been found to be good with test-retest reliability moderately stable, even after follow up of a year (Garnefski et al., 2001; Garnefski & Kraaij, 2007).

### **Social Connectedness Scale**

The Social Connectedness Scale (Lee et al., 2001) was developed to measure an individual’s psychological sense of belonging – how people cognitively construe interpersonal closeness with others in their social world. The Social Connectedness Scale contains 20 items (10 positive, 10 negative) and uses a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree), with higher scores reflecting a greater sense of connectedness. Item examples include “I am able to relate to my peers”, “I am able to connect with other people”, and “My friends feel like my family”. The Social Connectedness Scale has demonstrated predictive validity for perceived stress in young adults (Lee, Keough, & Sexton, 2002). The Social Connectedness Scale has shown

convergent and discriminant validity, with a positive relationship to collective self-esteem and negative relationship to depression, hostility, loneliness, and social distress and avoidance. The scale has also demonstrated good internal consistency (Lee, Draper, & Lee, 2001).

### **General Health Questionnaire (GHQ-12)**

The General Health Questionnaire (GHQ; Goldberg, 1978) was developed as a screening tool to detect those likely to have or be at risk of developing psychiatric disorders. The GHQ is the most widely used measurement of psychological health worldwide (Werneke, Goldberg, Yalcin, & Ustun, 2000). The GHQ is available in a number of versions, including 12, 28, 30, and 60 items. The GHQ-12 (Goldberg & Hillier, 1979), which was utilised in the current study, was chosen due to its brevity and wide usage. Each item has four response options, which vary item to item. Items include: “Have you recently lost much sleep over worry?; “Have you recently felt constantly under strain?; “Have you recently felt capable of making decisions about things?; and “Have you recently been thinking of yourself as a worthless person?”. Participants are instructed to consider the “past few weeks” when considering their response. Item scores range from 0 to 3 (total scores ranging from 0 to 36), with higher scores indicating poorer psychological health.

In terms of validation, significant correlations have also been observed with the Hospital Depression and Anxiety Scale (Sakakibara, Miller, Orenczuk, & Wolfe, 2009). In reviewing studies that utilised different versions of the GHQ, Goldberg and Williams (1988) have reported that the mean value of Cronbach’s alpha in these studies was .85 for the GHQ-12, .87 for the GHQ-30, and .93 for the GHQ-60. Test-retest reliability over a

six-month period has been reported as .90 (McDowell, 2006). The GHQ-12 has good specificity, reliability, and reasonably high sensitivity (El-Metwally et al., 2018).

**Procedure.** For the university sample, participants were directed via an electronic link to the study's Sona or PsychData page. Participants were provided with an explanatory statement describing the nature of the research, data storage policies, and benefits/risks associated with the current research. Participants were required to indicate electronic consent using a checkbox option. Upon providing consent, participants were provided with the series of questionnaires listed above. Participants received a half credit point to reimburse them for their time in participating in the study. After participants completed questionnaires, they were assigned a participant number for data entry purposes and identifying details were destroyed. Data will be securely stored at Bond University for at least five years.

For the acute mental health inpatient sample, the participants were admitted to an inpatient unit for young adults in the Gold Coast Mental Health Service catchment area. The inpatient unit is a 12-bed acute unit with 4 additional psychiatric intensive care unit beds. Inclusion criteria included: patients aged 18 to 25 and admitted to an acute mental health unit for young adults, likely to be admitted for at least 3 days. Exclusion criteria included: floridly psychotic patients (i.e., actively experiencing hallucinations or delusions, thought disorder, disorganized speech, or profound negative symptoms); patients assessed as not having an adequate understanding of the English language; and patients assessed as not having the capacity to provide informed consent. Formalised assessments for capacity were not utilised, but a patient was thought to have capacity when deemed able to make decisions for themselves – for example, understanding the study and communicating this understanding and choice. Patients who were initially excluded due to mental state were



invited to participate upon improvement, as long as they were likely to be on the unit for at least 3 days with capacity.

After arrival and orientation to the young adult acute mental health inpatient unit, patients were informed about the project by a staff member and asked if they would like to participate, pending capacity assessment by the medical and multidisciplinary team. If the patient met the inclusion criteria, the researcher and also the unit clinical psychologist, obtained written informed consent. In gaining informed consent, potential participants were informed of the following:

- Purpose and nature of the research.
- Participation is voluntary.
- Information provided in the study is confidential and will be de-identified.
- Participants can withdraw at any time.
- Potential risks.
- Patient care will in no way be impacted by a decision to not participate.

The researcher asked patients to complete initial assessment measures at this time. While patients not having capacity at time of admission were initially excluded from the study, these patients were given the opportunity to participate if their capacity status changed.

### **Design and Analyses**

A path analytic approach was used to test the hypothesised causal paths between variables. As suggested by Kline (2011) regarding path analysis, a minimum of 200 participants was included in the initial analysis. This sample included both acute inpatients

and university participants, with 281 participants in total. Because the initial model utilizing the mixed sample was validated, the acute mental health inpatient sample data was subsequently analysed on its own to test the fit of the model on this sample in isolation. The Maximum Likelihood (ML) estimation method was used to estimate path coefficients and model fit. While multiple regression analysis also estimates path coefficients, the estimation of all model parameters is simultaneous and iterative (Kline, 1998). ML is among the most widely used model-fitting estimation methods. The full path model was evaluated for goodness of fit based on its degree of explained variance as reflected by the  $R^2$  statistics for each endogenous variable as well as for the overall model. Goodness of fit is an indication of the total variance explained in the dependent variables by the independent, moderating, and mediating variables. Absolute fit indices and incremental fit indices were both utilised. The following conventions were following in determining model fit. Chi-square is the traditional method for evaluating overall model fit, with a good fitting model providing an insignificant result at  $p < .05$  (Barrett, 2007). A Root Mean Square Error of Approximation (RMSEA) of .06 or below is suggestive of a good fitting model as is a Comparative Fit Index (CFI) of above .95 (Hu and Bentler, 1999).

In this analysis, a structural model, based on the PERC<sup>2</sup> Up model of mental health recovery, was used to depict the hypothesised relationships between positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. See Figure 4 for a summary.

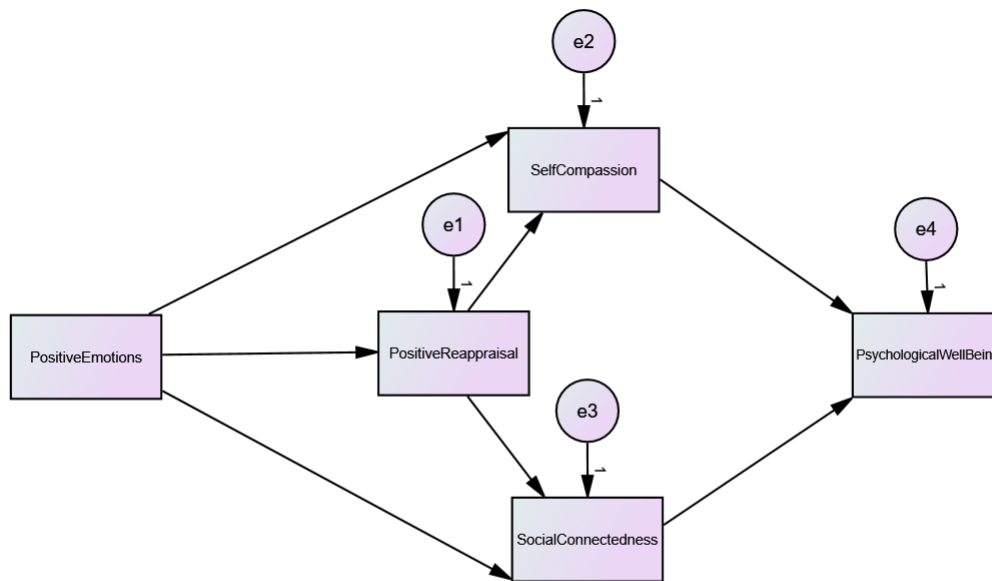


Figure 4. Proposed PERC<sup>2</sup> Up Model of Mental Health Recovery. Note. e1-e4 are the error terms for each variable.

## Results

All analyses were planned a priori before the commencement of data collection. To test the above hypotheses, the hypothesised, theoretical path model was drawn and estimated using AMOS Version 26.

### Full Path Model Description

The lines, or paths, within the path model represent hypothesised relationships between the variables. Path model analysis takes into account the criteria for causality and represents a holistic view of the relationship between variables. The relationships represented by paths in the model take into account the variance shared between the variables and account for the contribution other variables may have on the relationship.

### **Goodness of Fit of the Estimated Full Path Model**

The original hypothesised model is above in Figure 4. In this model, it was hypothesised that the experience of positive emotions would lead to a broadening of perspective (positive reappraisal) and the development of personal resources (self-compassion and social connectedness) and subsequently, psychological well-being.

The assumptions were evaluated through SPSS and the dataset included 281 participants from a university sample and 70 participants from an acute mental health inpatient sample. The acute mental health inpatient sample was a combination of intervention and control participants (Chapter 6). Some participants ( $n = 70$ ) from the university sample only completed some of the questionnaires, so they were not included in the analysis. A total of 281 participants were included in the analysis, with 211 from the university sample and 70 from the acute mental health inpatient sample. The Kolmogorov-Smirnov statistic suggested violations of normality for positive emotions, positive reappraisal, and psychological well-being. Histograms were used to explore these violations. Both positive emotions and psychological well-being were positively skewed, as might be theoretically expected with such constructs. With reasonably large samples (e.g., above 200 participants), skewness will not make a substantive difference in the analysis (Tabachnick and Fidell, 2013). Using SPSS generated box plots, nil univariate outliers were identified. Moreover, mean scores were nearly identical to 5% trimmed mean scores, suggesting that any extreme scores are not having a significant impact upon means. Multivariate outliers were explored using Mahalanobis Distances. One multivariate outlier was identified with a Mahalanobis Distance of 23.06, which is above the 20.52 critical value for five DVs as suggested by Tabachnick and Fidell (2013). This participants' scores were examined and were theoretically consistent (e.g., positive scores on all variables), so

this participant was retained in the analysis. Means and standard deviations for both university and inpatient samples are displayed below in Table 2.

*Table 2: Means and Standard Deviations for University and Acute Inpatient Samples*

Variable	University ( $n = 211$ )	Acute Inpatient ( $n = 70$ )
Self-Compassion	73.20 ( $SD = 19.78$ )	64.99 ( $SD = 19.18$ )*
Positive Emotion	23.94 ( $SD = 8.49$ )	27.16 ( $SD = 10.23$ )**
Positive Reappraisal	12.59 ( $SD = 4.09$ )	12.79 ( $SD = 4.64$ )
Social Connectedness	76.80 ( $SD = 19.25$ )	70.79 ( $SD = 19.95$ )
Psychological Well-Being	16.36 ( $SD = 7.42$ )	17.67 ( $SD = 8.74$ )

\* $p = .003$ , \*\* $p = .01$

The initial hypothesised model was not found to be a good fit for the data,  $X^2 = 86.05$ ,  $p < .001$ . This finding of a poor fitting model was also suggested by  $CFI = .859$  and  $RMSEA = .314$ . However, modification indices suggested that two covariances be added to the model to correlate the residuals of these two sets of variables: positive emotions/psychological well-being and self-compassion/social connectedness. This new modified model is depicted in Figure 5.

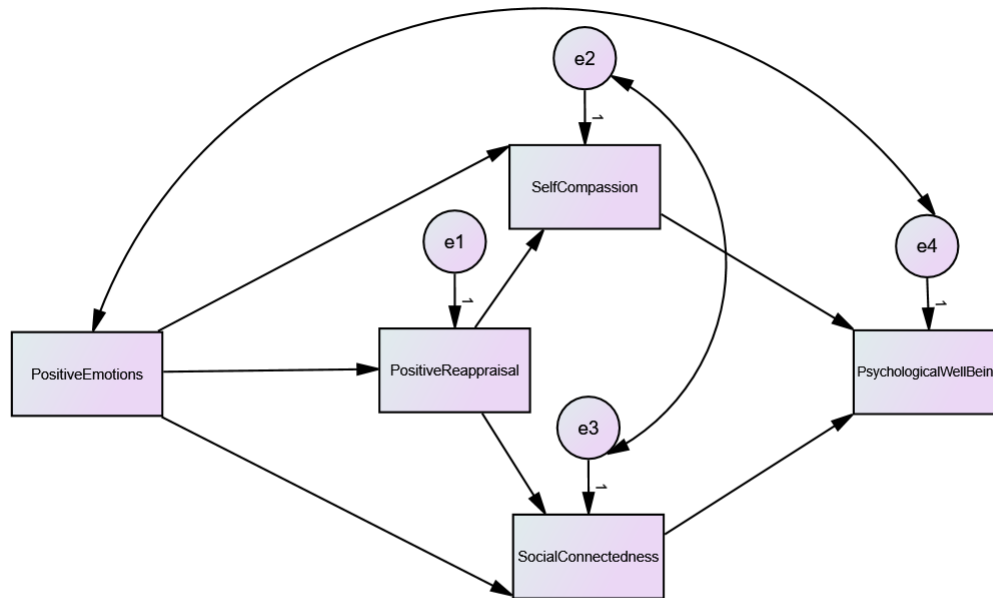


Figure 5. Modified PERC<sup>2</sup> Up Model of Mental Health Recovery. Note. e1-e4 are the error terms for each variable.

These suggestions were theoretically consistent with the research literature on the variables, with high correlations expected between such constructs. It seems reasonable to conclude that there is shared variance between these variables not captured in the initial model. These suggestions were subsequently adopted in an attempt to develop a better fitting model. These changes significantly improved the fit of the model, with  $X^2 = 1.01$ ,  $p < .315$  and RMSEA = .006. The incremental fit indices supported a good fitting model, with CFI = 1. The Akaike's Information Criterion (AIC) is a modification of the standard goodness of fit chi-square statistic that includes a penalty for complexity. This statistic is useful when comparing models and determining which is the best fit, with the model with

lowest AIC value considered having the best fit. For the initial hypothesised model, the AIC was 110.05. After modifications, the new model yielded an AIC of 29.01, consistent with the above findings that the new modified model, incorporating two covariances, was the better fitting model. The final model, with standardised path coefficients, is displayed below in Figure 6.

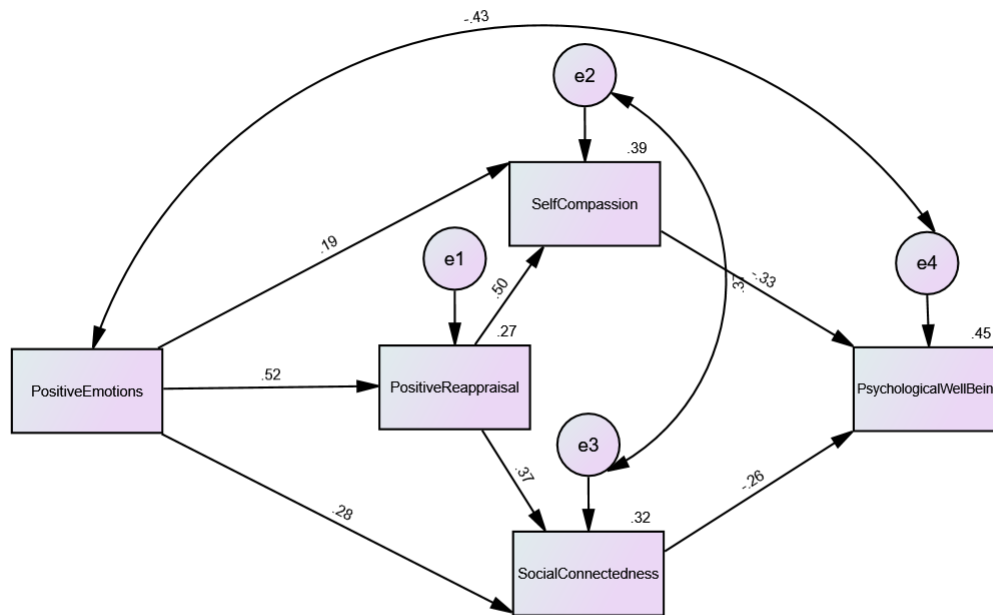


Figure 6. PERC<sup>2</sup> Up Model of Mental Health Recovery, with Standardised Path Coefficients.

### Direct and Indirect Effects

Standardised path coefficients indicated strong and statistically significant direct effects from positive emotion to positive reappraisal ( $B = .52, p = .005$ ) and from positive reappraisal to self-compassion ( $B = .50, p = .004$ ). Both are considered large effect sizes. Medium size effects were observed from positive emotion to social connectedness ( $B$

=.28,  $p = .002$ ), from positive reappraisal to social connectedness ( $B = .37$ ,  $p = .006$ ), from self-compassion to psychological well-being ( $B = .33$ ,  $p = .002$ ), and from social connectedness to psychological well-being ( $B = .26$ ,  $p = .005$ ). The direct effect between positive emotion and self-compassion was also significant ( $B = .19$ ,  $p = .011$ ) with a small to medium effect size. These significance tests reflect the absolute magnitude of the path coefficients, the sample size, and inter-correlations among the variables.

Significant indirect effects were observed from both positive emotion ( $p = .004$ ) and positive reappraisal ( $p = .003$ ) to psychological well-being, with positive emotion also having a significant indirect effect on social connectedness ( $p = .004$ ) and self-compassion ( $p = .002$ ).

### Squared Multiple Correlations

All endogenous variables predicted significant variance in the model, with psychological well-being predicting the most variance at 45 percent. Results are in Table 3.

*Table 3: Squared Multiple Correlations in the Final Model*

Variable	$R^2$	Lower	Upper	$p$
Positive Reperceiving	.27	.18	.38	.003
Self-Compassion	.39	.28	.47	.008
Social Connectedness	.32	.23	.40	.008
Psychological Well-Being	.45	.34	.53	.007



A separate regression analysis was conducted to ascertain whether psychological well-being significantly predicted positive emotions, suggesting a reciprocal relationship and an upward spiral of recovery. Psychological well-being significantly predicted positive emotions, explaining 35 percent of the variance,  $F(1, 279) = 149.83, p < .001, R^2 = .35$ .

### **Estimated Full Path Model – Acute Mental Health Inpatient Sample**

After initially validating the PERC<sup>2</sup> Up model in the larger data sample, comprised of young adults from university and acute mental health inpatient settings, the model was tested using only the acute mental health inpatient data. Acknowledging the potential heterogeneity of the mixed sample, this further analysis provided insight into whether the model fits the data of the acute mental health inpatients, albeit with a smaller sample size and less power.

Using the same conventions as described above, the model was also a good fit for the acute mental health inpatient data, with  $X^2 = .01, p < .918$  and  $RMSEA < .001$ . The incremental fit indices also supported a good fitting model, with  $CFI = 1$ . As mentioned above, the AIC is useful when comparing models and determining which is the best fit, with the model with lowest AIC value considered having the best fit. For the initial validated model, tested on a sample of university students and acute mental health inpatients, the AIC was 29.01. For the only acute mental health inpatient sample, the AIC suggested a slightly improved fit, with an AIC of 28.01.

## **Discussion**

Using path analysis, this study evaluated the PERC<sup>2</sup> Up model, a model of mental health recovery applying the broaden and build theory of positive emotions to mental health recovery in the acute setting. The recovery model for mental health has been developed to guide mental health care in response to what is perceived as an overly narrow

traditional biomedical model. The recovery model provides a holistic view of people experiencing mental health conditions that focuses on the person, not just the symptoms. While this is the aim of mental health recovery, there are few statistically validated models that identify specific pathways to recovery. Promoting a recovery-oriented approach to mental health care is central to Australia's national mental health strategy. The majority of people who are diagnosed with mental health conditions recover, but the course and extent of recovery can be difficult to predict. Having models of mental health recovery can guide this process and provide reassurance in what can be a highly distressing time for patients and their families. While admission to hospital for mental health reasons is rare and occurs in less than one percent of the Australian population (Australian Bureau of Statistics, 2007), recovery-oriented principles and practices are important in this context with patients often in crisis and in an acute phase of a mental health condition. This is particularly important for young adults, with individuals aged 18 to 24 have the highest prevalence of any age group with 26 percent of young adults experiencing mental disorders (Australian Bureau of Statistics, 2007).

The first prediction of this study, that the PERC<sup>2</sup> Up model of mental health recovery be found to be a good fit for the data, was supported, validating this model. This model was validated in both the combined sample, with university students and acute mental health inpatients, and in a sample comprised of only acute mental health inpatients. As displayed above in Figure 6 path model, this finding indicates that the experience of positive emotions results in positive reappraisal and the experience of increased self-compassion and social connectedness, thereby increasing psychological well-being. This finding is in keeping with other research that has supported the broaden and build theory of positive emotions (Frederickson et al., 2008; Kok et al., 2013). This theory posits that the experience of positive emotions, albeit brief, leads to the broadening of perspective and

thought-action repertoires, which in turn leads to the development of personal resources, such as self-compassion and social connectedness. These personal resources result in improved psychological well-being and the further experience of positive emotions, resulting in an upward spiral of mental health recovery. For example, if an individual engages in an intervention that increases the experience of positive emotion, such as LKM or mindfulness, this might broaden their perspective and widen the behavioural range of options available to them, leading to increased engagement and felt connection with peers (e.g., social connectedness). This social engagement and feelings of connection with others is likely to result in increased experience of positive emotions, and might widen their behavioural repertoire further (e.g., attending a social gathering that they would have otherwise avoided/not attended), propelling the upward cycle of recovery. The broaden and build theory predicts a reciprocal relationship between positive emotions, broadened thinking and behaviours, and the development of personal resources, leading to appreciable increases in psychological well-being over time. This reciprocal relationship is reflected in the results of the current study, with added covariances between positive emotions and psychological well-being and between self-compassion and social connectedness significantly improving the fit of the model. The added covariance between self-compassion and social connection suggests that as individuals feel more connected to others, their sense of common humanity and self-kindness (self-compassion) also increases. Theoretically, this relationship between self-compassion and social connectedness makes sense, where such a dynamic can also be observed in the acute mental health inpatient setting (e.g., individuals feel less alone and perhaps less self-critical after meeting and interacting with individuals having similar struggles).

It is noteworthy that the mean psychological well-being scores (GHQ-12) were 16.36 ( $SD = 7.42$ ) in the university sample and 17.67 ( $SD = 8.74$ ) in the inpatient sample,

with lower scores reflecting higher psychological well-being. These scores were elevated in both sample when compared to a large, community samples (Donath, 2001; McCabe et al., 2018). While this might be expected in the acute mental health inpatient sample, this is less expected in the university sample. Further comparisons between the acute mental health inpatient sample and university sample are made in the following chapter.

The validation of this model suggests that interventions aimed at increasing the experience of positive emotions is an effective means of improving psychological well-being for those experiencing mental health challenges. Similarly, Garland and colleagues (2010) suggest that positive emotions can be cultivated intentionally and that this can promote psychological well-being. This is consistent with the research of Johnson et al. (2011), where LKM was used with outpatient participants with schizophrenia and other psychotic symptoms. This intervention was associated with, compared to baseline, significantly decreased negative symptoms of schizophrenia and increased positive emotions and psychological recovery. In a pilot study Kearney et al. (2013) found that a 12-week LKM course significantly reduced depression and post-traumatic stress disorder (PTSD) symptoms, compared to baseline measures, among veterans diagnosed with PTSD. These studies, which show the benefits of LKM with patients with psychotic and trauma-based conditions are particularly relevant to acute mental health wards, where such presentations are common.

This finding is also consistent with studies that have found that LKM can enhance social connectedness and can benefit relationships via increasing positive emotions. Kok et al. (2013) found that LKM participants who reported experiencing more positive emotions also reported more gains in perceived social connection. Consistent with the earlier results of Frederickson et al. (2008) and with the broaden and build theory of positive emotions,

Kok and colleagues found that the experience of positive emotions prompted individuals to experience greater social connectedness and improve physical health, as measured by cardiac vagal tone, in an upward spiral dynamic. They suggest that the experience of recurrent momentary positive emotions increases feelings of social belonging, which in turn opens people to more experiences of positive emotional and social experiences. Over time, this appears to benefit health. Kok et al. suggest that this upward spiral dynamic has the potential to project individuals onto self-sustaining pathways of growth and development. Such an upward spiral dynamic may also be useful in promoting recovery from health problems or other adversity, such as admission to an acute mental health inpatient facility. To date, such interventions have not been trialed in acute mental health ward settings. An initial pilot and feasibility trial of such an intervention can be seen in Chapter 6 in this research. The validation of the PERC<sup>2</sup> Up model of mental health recovery supports such an intervention.

The second prediction was also supported with standardised path coefficients indicating the predicted significant direct effects:

- a. From positive emotions to positive reappraisal, self-compassion, and social connectedness.
- b. From positive reappraisal to self-compassion and social connectedness.
- c. From self-compassion to psychological well-being.
- d. From social connectedness to psychological well-being.

These findings are consistent with prior research demonstrating the importance of self-compassion, social connectedness, and positive reappraisal are in promoting psychological well-being. It is well-established that self-compassion is an important predictor of psychological well-being (Barnard & Curry, 2011; MacBeth & Gumley,

2012). Numerous studies have found that treating oneself compassionately when confronting personal suffering promotes psychological well-being. Neff (2003) found that self-compassion was negatively associated with markers of maladjustment including self-criticism, depression, anxiety, and rumination. In a meta-analysis that included community, university student, and therapist samples, MacBeth and Gumley (2012) found a large effect size when examining the link between self-compassion and psychopathology across 20 studies, with self-compassion related to lower anxiety and depression. Self-compassion interventions appear relevant in both acute and non-acute mental health settings with high levels of self-criticism across mental health diagnostic presentations, including depression, personality disorders, eating disorders, anxiety, and substance abuse (Blatt, 1995; MacBeth & Gumley, 2012). The current results support such findings and provide a framework for mental health recovery.

Self-compassion has also been associated with the experience of positive emotional states, including positive emotions (Neff, Kirkpatrick, & Rude, 2007). Self-compassion has also been positively related to life satisfaction and social connectedness (Neff, 2003). These findings suggest that self-compassion not only promotes a kinder, more gentle approach towards the self but that it also promotes a greater sense of connection to others. Gilbert (2005) suggests that self-compassion enhances well-being because it assists individuals in feeling cared for, emotionally calm, and socially connected. While these studies suggest that self-compassion, social connectedness, and positive reappraisal promote psychological well-being, limited conceptual models have been developed and examined to explore the pathways and relationships to psychological well-being. The results from the current study, along with these correlational studies, provide evidence and support that interventions aimed at increasing positive reappraisal, self-compassion, and

social connectedness may also promote improvements in these specific domains in addition to broader psychological well-being.

Significant correlations were observed between self-compassion and social connectedness within the PERC<sup>2</sup> Up model, with an added covariance between these variables significantly improving the fit of the model. In Neff's (2003) conceptualization of self-compassion, the concept of common humanity vs isolation is pivotal. Common humanity involves recognising or acknowledging that all humans fail and make mistakes. When individuals feel isolated, alone, and removed from others when considering their struggles and failures, suffering can be increased (Neff, 2011). Conversely, when humans feel that they have commonalities with others and that they are not alone in their struggles, they are more likely to engage and foster connections with others. It logically follows that these two related concepts could feasibly foster an upward spiral of psychological well-being. The researcher has observed the interaction of these concepts in the acute mental health setting. For instance, an individual who may have been struggling for a lengthy period of time is finally admitted to an acute mental health unit when their mental health deteriorates to a very concerning level. In the community, the individual may have felt alone and isolated and perhaps that they are the only ones experiencing such challenges – which leads to further critical self-talk (e.g., “What’s wrong with me?”, “Why can’t I be like the others and do what the others do?”) and a downward spiral. However, once admitted, the individual sees first-hand that there are others with similar challenges and that they are not alone in their adversity. The open nature of the unit (e.g., common areas, game rooms/activities, group activities, gym) provide spaces to facilitate increased social connection. This increased social connection can lead to an increased sense of common humanity and self-compassion, improving recovery trajectory and psychological well-being, along with the experience of further positive emotions. One can also see how an

acute mental health admission might be seen in a more positive light if an admitted individual has such an experience (i.e., positive reappraisal). While this example likely represents an ideal situation, such an occurrence, or a version of this, is regularly observed on the ward, with some patients exchanging contact details, social media information, and keeping in touch after admission. This type of upward spiral of mental health recovery is also supported by the results from the current study, with standardised path coefficients indicated significant indirect effects from both positive emotions to psychological well-being and from positive reappraisal and psychological well-being. This finding, supporting the third hypothesis, suggests that both positive emotions and positive reappraisal significantly impact psychological well-being, through both self-compassion and social connectedness.

In the CHIME framework, Leamy and colleagues (2011) identified connectedness, hope and optimism about the future, identity, meaning in life, and empowerment as promoting mental health recovery. Conceptual similarities and overlap can be seen in the integrated model developed by Davidson et al. (2008). In integrating models of addiction and mental health recovery, Davidson et al. (2008) identified the following principles as cornerstones: establishing and maintaining relationships, renewing hope, confidence and commitment, understanding, accepting and redefining self, community involvement, incorporating illness and maintaining recovery, overcoming stigma and promoting positive views of recovery, and becoming an empowered citizen.

Theoretically, there are similarities between the above synthesised models and the PERC<sup>2</sup> Up model of mental health recovery. The current study builds upon these models by identifying and exploring specific constructs and pathways that show promise in promoting mental health recovery, specifically positive emotions, positive reappraisal,



self-compassion, and social connectedness. Moreover, the current study and PERC<sup>2</sup> Up model is based upon observed interactions in the acute mental health setting, which have now been supported by quantitative data analysis. The above listed synthesised models are based on literature review, rather than quantitative data analysis. Similar to the above models, the PERC<sup>2</sup> Up model focuses on the recovery process. Conceptually, similarities will be seen in that they are both strengths based, resource and identity building, focused on social connection and compassion for the self and others, and involve a healthy, hopeful view of the future and recovery process. The results from this study support the PERC<sup>2</sup> Up model in the mental health recovery context, along with interventions based on this model. The recovery-oriented psychological intervention incorporating LKM delivered in Study 4 and described in Chapter 6 is such an intervention, with the focus on deliberately cultivating positive emotions, as suggested by Garland and colleagues (2010), with the intention of improving trajectory of mental health recovery and by promoting an upward spiral. Such an intervention would complement the traditional biomedical model in the acute mental health setting, with a focus on promoting the experience of positive emotions, rather than a focus on symptom management. The findings from this pilot intervention, the first recovery-oriented psychological intervention in acute mental health inpatient setting, are described in Chapter 6.

## **Chapter 5 – A Comparison of University and Acute Mental Health Inpatient Young Adult Samples.**

### **Chapter Overview, Rationale, and Objectives**

As discussed in the literature review in Chapter 2, the constructs in the PERC<sup>2</sup> Up model of mental health recovery were chosen based on observations and experience in the acute mental health inpatient setting as well as the literature about constructs promoting psychological well-being. There are a number of recent surveys regarding university student mental health in Australia and in the United Kingdom, described in Chapter 2, that suggest that university students are also facing their own mental health struggles.

Chapter 5 provides comparisons between young adults in the university setting and young adults in the acute mental health inpatient setting. In reviewing the literature, this is the first study to compare acute mental health inpatients to a university sample on a set of variables. As the clinical psychologist on an acute mental health inpatient unit, this presented a unique opportunity to collect such data and to make comparisons to a university group. This exercise would have been otherwise logistically not possible. In the current study, between group analyses includes positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. With young adults in university settings experiencing their own mental health struggles as outlined in Chapter 2, it was predicted that young adults in the university setting will report comparable, or not significantly different, levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being to young adults in acute mental health inpatient settings. If this prediction was supported, then the need to provide recovery-oriented psychological interventions for young adults in the university setting as well as the acute mental health inpatient setting would be highlighted. It would also demonstrate

that the PERC<sup>2</sup> Up model of mental health recovery described in Chapter 4 and the subsequent recovery-oriented psychological intervention incorporating LKM would appear to have wider applicability with relevance for young adults in settings other than acute mental health inpatient, such as university. Given the recent surveys described in Chapter 2 regarding the mental health of university students, identifying pathways for mental health recovery and relevant psychological interventions is essential.

### **Method**

**Participants.** The data was collected from university students aged 18-30 at Bond University and from inpatients on an acute mental health inpatient unit for young adults (PRE data from both intervention and control groups in Study 4). The sample size was 281, with 70 acute young adult inpatients included in the sample.

**Materials.** The questionnaires gathered demographic information in addition to self-reported levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being using the questionnaires as described in Chapter 4.

**Procedure.** Please see Chapter 4 for a full summary of how this data was collected.

### **Design and Analyses**

A one way between groups MANOVA was utilised to examine group differences on the above indicated PERC<sup>2</sup> Up variables.

Given the above research and theories, the following prediction was formulated for this study:

1. The university young adult sample will report comparable levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being to the acute mental health inpatient sample.

## Results

### MANOVA Assumption Testing

The assumptions were evaluated through SPSS and the dataset included 281 participants from a university sample and 70 participants from an acute mental health inpatient sample. Some participants ( $n = 70$ ) from the university sample only completed some of the questionnaires, so they were not included in the analysis. A total of 281 participants were included in the analysis. The Kolmogorov-Smirnov statistic suggested violations of normality for positive emotions, positive re-perceiving, and psychological well-being. Histograms were used to explore these violations. Both positive emotions and psychological well-being were positively skewed, as might be theoretically expected with such constructs. With reasonably large samples (e.g., above 200 participants), skewness will not make a substantive difference in the analysis (Tabachnick & Fidell, 2013). Using SPSS generated box plots, no univariate outliers were identified. Moreover, mean scores were nearly identical to 5% trimmed mean scores, suggesting that any extreme scores are not having a significant impact upon means. Multivariate outliers were explored using Mahalanobis Distances. One multivariate outlier was identified with a Mahalanobis Distance of 23.06, which is above the 20.52 critical value for five DVs as suggested by Tabachnick and Fidell (2013). This participant's scores were examined and were theoretically consistent (e.g., positive scores on all variables), so this participant was retained in the analysis. Scatterplots were generated in SPSS and utilised to assess the assumption of linearity, with no violations identified. The assumption of singularity and multicollinearity was assessed by examining correlations between the variables. All variables were significantly and moderately correlated, indicating that these assumptions are not violated. Box's M Test of Equality of Covariance Matrices was utilised to assess the homogeneity of variance-covariance matrices assumption. In determining whether a

violation has occurred, Tabachnick and Fidell (2013) suggest a Box's M cut off significance level of  $p < .001$  with larger sample sizes. A Box's M  $p$  value of .05 suggested that this assumption was not violated. Levene's Test of Equality of Error Variances indicated that two variables, positive emotions and psychological well-being, violated the assumption of equality of variance. When this violation occurs a more conservative alpha level of .01 is suggested when considering significance for these variables to protect against Type 1 error (Tabachnick & Fidell, 2013).

## MANOVA

With assumptions tested and violations accounted for, a one way between groups MANOVA was utilised to investigate differences between university and acute mental health inpatient samples. Five DVs were included (positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being, with group the IV (university sample vs acute mental health inpatient sample). There was a statistically significant difference between groups on the combined DVs,  $F(5,275) = 7.80$ ,  $p < .001$ , Pillai's Trace = .12, partial eta squared = .12. When the results for the DVs were considered separately, positive emotions,  $F(1,279) = 6.76$ ,  $p = .01$ , partial eta squared = .02, and self-compassion,  $F(1,279) = 9.21$ ,  $p = .003$ , partial eta squared = .03, were statistically significant between groups, using a Bonferroni adjusted alpha of .01 (.05/5 DVs) to reduce the likelihood of Type 1 error, with small effect sizes observed. The acute mental health inpatient sample reported significantly higher levels of positive emotions than the university sample while the university sample reported significantly higher levels of self-compassion than the acute mental health inpatient sample. Means and standard deviations are displayed above in Table 2.

## Exploratory Analyses

Exploratory analyses were conducted after an unexpected finding, whereby the acute mental health inpatient sample reported the experience of more positive emotion than university students. To explore whether residual manic or hypomanic symptoms were influencing this finding, participants with BPAD were removed from the analysis. When participants with BPAD were removed from the analysis, no significant difference was found between the inpatient and university samples. The negative affect component of the PANAS was also subsequently calculated, and an independent samples t-test was utilised to explore means differences between university and acute mental health inpatient samples. The acute mental health inpatient sample ( $M = 26.72$ ,  $SD = 9.43$ ) also reported more negative emotion than the university sample ( $M = 20.30$ ,  $SD = 9.55$ ),  $t(279) = -4.88$ ,  $p < .001$ .

The subscales of the Self-Compassion Scale were computed to determine which ones were significantly different between the university and acute mental health inpatient samples. Independent samples t-tests were utilised to explore means differences between university and acute mental health inpatient samples. These subscales include self-kindness vs self-judgement, common humanity vs isolation, and mindfulness vs overidentification. Only the self-judgement subscale was significantly different between the groups,  $t(279) = -2.08$ ,  $p = .039$ , with the acute mental health inpatient sample reporting significantly more self-judgement ( $M = 17.05$ ,  $SD = 4.94$ ) than the university sample ( $M = 16.08$ ,  $SD = 4.98$ ).

## Discussion

This study examined the differences between a young adult university student sample and an acute mental health inpatient sample on the PERC<sup>2</sup> Up model of mental

health recovery variables, positive emotion, positive reappraisal, self-compassion, social connectedness, and psychological well-being. While the mental health struggles of university students are documented in surveys as discussed in Chapter 2, no published studies to date have compared university students to acute mental health inpatients. This unique opportunity to make these comparisons was possible as the researcher was the clinical psychologist on an acute mental health inpatient unit (otherwise this is not likely possible). This comparison was thought to be informative in terms of highlighting the mental health struggles of university students, while also suggesting that increased mental health support and recovery-oriented psychological interventions would also be beneficial for university students.

It was predicted that the university young adult sample would report comparable levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being to the acute inpatient mental health sample. This hypothesis was partially supported. The university student young adult sample was found to have comparable levels of psychological well-being to the acute mental health inpatients. Moreover, the reported levels of social connectedness and positive reappraisal, both usually linked to healthy psychological functioning, were not significantly different in these two groups. This finding is in keeping with the surveys of university student mental health described in Chapter 2. The results highlight the mental health struggles of university students and suggest that the development of pathways of mental health recovery, such as the PERC<sup>2</sup> Up model, and recovery-oriented psychological interventions is also crucial for university students, as well as acute mental health inpatients.

The current study also found that the university young adult sample reported significantly higher levels of self-compassion than the acute inpatient mental health

sample. Because acute mental health inpatients struggle to be compassionate towards themselves self-compassion interventions appear to be of particular benefit in this setting. Numerous studies have found that treating oneself compassionately when confronting personal suffering promotes psychological well-being. In her initial explorations of the self-compassion construct in an undergraduate population, Neff (2003) found that self-compassion was negatively associated with markers of maladjustment including self-criticism, depression, anxiety, and rumination. In a meta-analysis that included community, university student, and therapist samples, MacBeth and Gumley (2012) found a large effect size when examining the link between self-compassion and psychopathology across 20 studies, with self-compassion related to lower anxiety and depression. Similarly, in a sample of undergraduates ( $n = 40$ ), self-compassion has been found to be negatively correlated with thought suppression and avoidance coping strategies (Neff et al., 2005).

In the current study, the acute mental health inpatients were found to have significantly more self-judgment than the university sample. This result is consistent with earlier findings whereby high levels of self-criticism has been found across mental health diagnostic presentations, including depression, personality disorders, eating disorders, anxiety, and substance abuse (Blatt, 1995; MacBeth & Gumley, 2012). Self-criticism, which overlaps conceptually considerably with self-judgment, has been found to be a transdiagnostic risk factor for diverse forms of psychopathology (Kannan & Levitt, 2013). Self-critical individuals experience feelings of unworthiness, inferiority, failure, and guilt. They engage in harsh self-scrutiny and evaluation, and fear being disapproved and criticized, thereby losing the acceptance and approval of others (Blatt & Zuroff, 1992). In addition to being related to a number of mental health disorders, self-criticism has been found to be related to have negative effects on interpersonal relationships throughout life. For example, self-criticism at age 12 predicted social maladjustment and less involvement



in activities in high school and adulthood (Zuroff, Koestner, & Powers, 1994). Self-criticism was also associated with loneliness and lack of intimacy in young adulthood (Wiseman, 1997), as well as marital dissatisfaction (Whiffen & Aube, 1999).

While it is possible that the inpatient group reported higher self-judgment due to being admitted into an acute mental health inpatient unit, this seems unlikely given the above-mentioned links between self-criticism and a number of mental health conditions. Studies have found that early relationships with parents are important contributors to the development of self-criticism, with parental overcontrol and criticism and lack of warmth important contributors (Campos, Besser, & Blatt, 2010). These early life interactions likely lead to the internalisation of unhealthy and unhelpful beliefs about the self (e.g., “I’m not good enough” or “I’m unworthy” and a self-critical and harsh inner dialogue. Psychological interventions based on self-compassion can be utilised to shift this self-critical dialogue.

Self-compassion interventions appear relevant in both acute and non-acute mental health settings with high levels of self-criticism across mental health diagnostic presentations, including depression, personality disorders, eating disorders, anxiety, and substance abuse (Blatt, 1995; MacBeth & Gumley, 2012). The current study further reinforces the use of self-compassion-based interventions in acute mental health inpatient settings. Self-compassion interventions can promote resilience in that self-compassionate people have less fear of failure, and when they do experience failure, they are more likely to try again (Neff et al., 2005). Feelings of self-compassion for personal weaknesses, failures, and past transgressions has been shown to result in more motivation to change and more motivation to learn to avoid repeating past mistakes (Breines & Chen, 2012). These

shifts in perspective and promotion of resilience can be helpful in promoting recovery from an acute mental health episode and admission.

To date, few self-compassion interventions has been evaluated on an acute mental health unit (Heriot-Maitland et al., 2014). The Heriot-Maitland et al study found that compassionate based approaches are feasible on acute mental health wards and found significant decreases in distress ratings and significant increases in calmness ratings after compassion-based therapy sessions. Further research is needed to develop the feasibility and empirical support for recovery-oriented psychological interventions aimed at increasing self-compassion in acute mental health settings. Chapter 6 describes the evaluation of a new recovery-oriented psychological intervention incorporating LKM, aimed at increasing self-compassion (amongst other variables) in acute mental health inpatients.

It was initially surprising to find that the acute mental health inpatients reported significantly higher levels of positive emotion than the university students. In interpreting this finding, it is worth noting that 10 participants from the acute mental health inpatient group have diagnoses of BPAD, with admissions subsequent to an elevation in mood, whether manic or hypomanic. While participants were invited to participate in the study only when they were deemed able to provide consent by the multidisciplinary team (e.g., no longer manic or hypomanic), it is possible that residual symptoms of elevated mood may have impacted upon their responses. When the analysis was completed with the participants with BPAD removed, the difference in positive emotions between mental health inpatient and university samples was not significant, suggesting that residual symptoms of mania or hypomania may be influencing this result. That stated, when validated, the PANAS was found to have a mean positive affect score of 33.3 ( $SD = 7.2$ )

(Watson, Clark, & Tellegen, 1988). In the current study, both acute inpatient and university student groups reported lower levels, with even the higher scoring acute inpatient group reporting a SD below the mean score at validation. This suggests that the higher levels of positive emotion reported by the acute inpatient group was not driven by symptoms of elevated mood in some participants, as this score is lower than previously reported mean scores. This finding seems to make more sense when considering that the acute mental health inpatients also reported significantly higher levels of negative affect, compared to the university students. In the acute mental health setting, one might expect a greater range of emotion, and this is commonly observed within the acute setting

In terms of limitations of the study, self-report measures are prone to response biases and the effects of social desirability, which may have influenced participant responses. The data collected from the acute mental health inpatients was part of a larger intervention trial, described in Chapter 6. As described in the following chapter, there were considerable challenges in recruiting participants to this study. While this challenge with recruitment was expected given the nature of the environment, this likely impacted upon between group comparisons. For instance, those who agreed to participate may have been closer their baseline functioning than those patients who declined to participate. Therefore, the acute mental health participants could have been non-representative of the general acute mental health population. This study focused on the young adult population, so this limits the generalisability of the findings. In making comparisons between these samples, it is important to note that the university sample was comprised of 18-30 year olds, rather than 18-25. As the university sample included individuals exiting the young adult developmental stage, making direct comparisons between the groups is more difficult, so this is a limitation of the current study.

Despite these limitations, these findings are both concerning and intriguing. Upon initial consideration one might think that university students would have significantly better mental health than those admitted to an acute mental health inpatient unit. However, more information is coming to light regarding the mental health struggles of university students. The findings from the current student were largely consistent with the mental health surveys of university students described above, with acute mental health inpatients and university students reporting similar levels of psychological well-being, social connection, and positive reappraisal. The finding that acute mental health inpatients report higher levels of positive emotions than university students was surprising, but less so, when exploratory analyses indicated that acute mental health inpatients also reported higher levels of negative emotions. This finding that acute mental health inpatients show more extremes in emotions made more theoretical sense. University students reported significantly higher self-compassion than the acute mental health inpatients, supporting the use of self-compassion-based interventions in the acute mental health setting. LKM is an evidence-based intervention which has been demonstrated to increase self-compassion, as well as positive emotions, social connectedness, and psychological well-being. The pilot study described in the following chapter, where a recovery-oriented psychological intervention incorporating LKM is trialed and evaluated on an acute mental health inpatient unit, is the first of its kind. As indicated in Chapter 3, only one Australian published study of recovery-oriented psychological interventions on acute mental health units was identified, with a sample of adolescents with PTSD. The first Australian feasibility study with adults is described below in Chapter 6.

## **Chapter 6 – Examining the Feasibility of a Brief Recovery-Oriented Psychological Intervention on an Acute Mental Health Inpatient Unit for Young Adults**

### **Chapter Overview, Rationale, and Objectives**

This final study is a feasibility study examining a brief recovery-oriented psychological intervention, incorporating LKM, on an acute mental health inpatient unit for young adults. This is an acute mental health inpatient unit specifically for young adults aged 18 to 25 years. Upon admission patients are in the acute phase of a mental health condition, with common diagnoses and presentations of schizophrenia and other psychotic disorders, personality disorders, bipolar disorder, eating disorders, polysubstance abuse, and suicidal ideation or attempt. This study is the culmination of the early research described in the program of research.

As described in the literature review in Chapter 2 and the quantitative systematic literature review in Chapter 3, there is a scarcity of research on recovery-oriented psychological interventions in the acute mental health inpatient setting. This is a complex clinical environment, with patients acutely unwell, length of stay uncertain, and a mix of diagnoses present on the ward at any time. There are also a number of professionals from a multi-disciplinary team involved, all with varying degrees of input. In terms of conducting research in this environment, this is a challenging proposition where little experimental control is often possible. It is for these reasons that there is likely a shortage of research in this area. That stated, there is a need for such research to shed light on what factors promote mental health recovery.

To address this gap in the research, the current study involves the evaluation of a LKM intervention in the acute mental health inpatient setting. While LKM has been shown beneficial in other mental health contexts, it has never been evaluated on an acute mental

health unit. Moreover, from reviewing the literature, this appears to be the first recovery-oriented psychological intervention to be evaluated in the acute mental health setting within the Australian context with adults. In addition to a general need for further research in this area, Chapter 3 identified specific areas for further attention and research in the acute mental health inpatient context.

- A need for research in the Australian context.
- A need to expand the range of interventions offered in research.
- A need to focus on interventions that offer a transdiagnostic approach, rather than a focus on a specific diagnosis.
- A need to expand the data that is collected, incorporating pre/post/follow up measures, a satisfaction survey, and an evaluation of session impact.
- A need to evaluate interventions on participants with a range of ages.

The current study addresses a number of these gaps, including: conducting research in the Australian context, broadening the scope of interventions offered in the acute mental health context, utilising a transdiagnostic approach given the mix of presentations on the unit, expanding the data that is collected to include a satisfaction study and evaluation of session impact, and targeting a younger demographic.

This recovery-oriented psychological intervention, incorporating LKM is informed by the validated PERC<sup>2</sup> Up model of recovery as discussed in Chapter 4. Building upon the broaden and build theory of positive emotions, this model posits that the experience of positive emotions, albeit brief, leads to the broadening of perspective and thought-action repertoires, which in turn leads to the development of self-compassion and social connectedness (personal resources). These personal resources result in improved psychological well-being and the further experience of positive emotions, resulting in an

upward spiral of mental health recovery. With its focus on developing the experience of positive emotions, LKM was viewed as a suitable intervention for this purpose. It was predicted that the experience of positive emotions may loosen the hold of negative emotions on the individual's mind by broadening the individual's perspective. The deliberate cultivation of positive emotions by LKM was thought to complement the traditional biomedical model in the acute mental health setting, with a focus on promoting the experience of positive emotions and promoting an upward trajectory of recovery, rather than a focus on symptom management. For example, if an individual engages in an intervention, such as LKM, that increases the experience of positive emotion, this might broaden their perspective and widen the behavioural range of options available to them, leading to increased engagement and felt connection with peers (e.g., social connectedness). This social engagement and feelings of connection with others are likely to result in increased experience of positive emotions, and might widen their behavioural repertoire further (e.g., attending a social gathering that they would have otherwise avoided/not attended), propelling the upward cycle of recovery. As indicated here, the broaden and build theory predicts a reciprocal relationship between positive emotions, broadened thinking and behaviours, and the development of personal resources, leading to appreciable increases in psychological well-being over time. The validation of the PERC<sup>2</sup> Up model suggests that interventions aimed at increasing the experience of positive emotions is an effective means of improving psychological well-being for those experiencing mental health challenges. This proposition was tested in the current study.

The current study measured change in self-reported positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being over time (PRE, POST) in both an intervention group and a TAU group. Qualitative data was also obtained via satisfaction survey, and the impact of individual LKM sessions was

measured to explore the immediate impact of the intervention. This was thought to be crucial in the acute setting as patients are often highly distressed and seeking immediate benefit in the acute phase of mental health symptomatology.

Based on the research presented in earlier chapters, the following predictions and research aims were formulated:

- I. The participants engaging in the recovery oriented psychological intervention, incorporating LKM will report significantly higher levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being compared to the TAU participants at the POST measurement.
- II. The participants engaging in the recovery-oriented psychological intervention, incorporating LKM will report significantly higher levels of self-compassion, positive emotions, positive reappraisal, social connectedness, and psychological well-being from PRE to POST measurements, following the intervention.
- III. The recovery-oriented psychological intervention participants will demonstrate significant improvements in stress, calmness, view of the future, and social connectedness ratings after meditation sessions, as indicated by pre and post LKM session measurements.
- IV. The recovery-oriented psychological intervention participants will have significantly lower rates of readmission than the TAU group.
- V. The recovery-oriented psychological intervention will be found to be helpful in the acute mental health setting, with participants reporting satisfaction with the intervention.
- VI. The recovery-oriented psychological intervention will be feasible to be delivered on an acute mental health inpatient unit.



## Method

**Participants.** The study sample was recruited from an acute mental health inpatient unit for young adults, which includes patients 18 to 25 years old requiring admission to an acute mental health setting in Southeast Queensland. Billingham et al. (2016) suggest that, for pilot and feasibility studies, 30 to 36 per group is an appropriate sample size, while Lewis et al. (2021) suggest 30 to 40 per group. In the current study, the aim was for approximately 50 participants per group, factoring in the likelihood of unusable or incomplete data due to the nature of the acute research environment. Inclusion criteria included: patients aged 18 to 25 and admitted to the acute mental health inpatient unit for young adults, likely to be admitted for at least 3 days. Exclusion criteria included: floridly psychotic patients; patients assessed as not having an adequate understanding of the English language; and patients assessed as not having the capacity to provide informed consent. Patients who were initially excluded due to mental state were invited upon improvement, as long as they were likely to be on the unit for at least 3 days with capacity. In total, 88 participants were recruited for this study. However, not all participants completed both sets of questionnaires. This often occurred when discharge plans changed (e.g., discharged earlier than expected) and at times, when participants decided that they would not continue. Seventy participants completed both sets of questionnaires and were included in the subsequent data analysis, with 23 participants in the LKM intervention group and 47 participants in the TAU group. Due to the open nature of the ward and regular interactions between patients, it was deemed not possible to have both TAU and intervention participants on the ward at the same time (e.g., the recovery-oriented psychological intervention group could speak to the TAU group about the intervention, thereby causing contamination). It was also deemed ethically problematic to withhold a group intervention from certain individuals admitted to the unit, while offering and

delivering to others. Therefore, the TAU group was recruited first, followed by the recovery-oriented psychological intervention group. The initial plan was to have equal or near equal numbers of participants in each group. However, as indicated above, the onset of the COVID-19 health crisis occurred while the intervention group was being recruited. This resulted in dramatic changes to the ward functioning and would have impacted on the nature of the intervention. For example, patients were encouraged to isolate and keep distance from other patients, loved ones could not visit the ward, leave was cancelled, and some patients were seen via videoconference rather than face-to-face. Given all these changes, participants recruited during this period would not have experienced an intervention or acute mental health unit experience comparable to those before them. Recruitment was therefore ceased with uneven group sizes, with the intention make the best use of the data that had been already collected.

The participants ranged from 18 to 25 years of age ( $M = 21.23$ ,  $SD = 1.91$ ). The sample was comprised of 32 (45.7 percent) females and 38 (54.3 percent) males. Diagnostically, the sample was comprised of 35 participants with a psychotic disorder (including schizophrenia, drug induced psychosis, schizoaffective disorder, amongst others), 10 with bipolar affective disorder (BPAD), 9 with borderline personality disorder (BPD), 8 with anorexia nervosa, 5 with depression or dysthymia, and 3 with adjustment disorder (admitted after a crisis and either suicide attempt or increased suicidal ideation). Diagnosis was not utilised to exclude patients from participating (i.e., all were eligible for participation as long as they met the above-described inclusion and exclusion criteria).

**Materials.** Demographic details were gathered from the mental health service information system as these are routinely gathered at the time of admission. The following questionnaires were administered to participants. These measures were chosen with the acuity of the patients in mind, with attempts made to reduce the number of questionnaires and items with an acknowledgement that they are likely facing challenges and not at their usual baseline functioning. The measures utilised are the same as those used in Chapter 4 and described in detail there. This included the Self-Compassion Scale (Neff, 2003), Positive and Negative Affect Scale (Watson et al., 1988), Cognitive Emotion Regulation Questionnaire (Garnefski et al., 2001) the Social Connectedness Scale (Lee et al., 2001), and the General Health Questionnaire-12 (Goldberg, 1978). The new measures specific to this intervention are described below.

### **Stress Bubbles**

This instrument was developed to measure change within meditation sessions (e.g., pre and post) (Jacobsen, Peters, & Chadwick, 2016). The authors of this assessment used this measure to measure change in a brief mindfulness-based intervention delivered on an acute mental health ward. Stress bubbles are a visual analogue scale with six bubbles gradually increasing in size from “not at all” (1) to “extremely” (6). A slightly modified version of this measure was utilised to measure within session change before and after the LKM meditation was delivered by the researcher. The items that they rated before and after session related to stress, calmness, positive view of the future, and social connectedness. This measure is helpful in determining the immediate impact of the intervention and whether it has the potential to reduce stress and increase levels of calmness, both of significant importance, in the acute setting.

### **Readmission Rates**

Readmission rates were calculated by reviewing the participant's file on the mental health service information system 6 months after the cessation of the intervention or treatment as usual. This information system is used by all the mental health services in the state of Queensland. Admissions locally or in other areas of the state were included.

### **Satisfaction Survey**

Participants in the LKM intervention were asked to complete a satisfaction survey at the completion of the intervention. This survey was developed for the purposes of this study. Participants were asked to rate both overall satisfaction and overall helpfulness on a 1 (not satisfied) to 10 (very satisfied) scale. Participants were also asked to report their usage of the intervention (e.g., not at all, once a day, a few times a day, or many times a day). Participants were asked to indicate towards whom they most often sent their loving kindness and compassion (e.g., myself, a loved one, others on the ward, or all of the above). Participants were also provided space to provide written responses regarding their favourite part of the intervention, least favourite part of the intervention, whether they wanted to apply this in their everyday life, and whether they would do this activity if on the unit again.

### **Procedure and Recovery-Oriented Psychological Intervention, Incorporating LKM**

After arrival and orientation to the acute mental health inpatient unit for young adults, patients were informed about the project by a staff member and asked if they would like to participate, pending capacity assessment by the medical and multidisciplinary team. If the patient met the inclusion criteria, the researcher and unit clinical psychologist, obtained written informed consent. In gaining informed consent, potential participants were informed of the following:

- Purpose and nature of the research.
- Participation is voluntary.
- Information provided in the study is confidential and will be de-identified.
- Participants can withdraw at any time.
- Potential risks.
- Patient care will in no way be impacted by a decision to not participate.

Those who were interested and met the inclusion criteria were introduced to the researcher, who delivered the intervention. The researcher was the clinical psychologist on the ward who has approximately 6 years experience working in the acute mental health inpatient setting. The researcher has previously conducted mindfulness and self-compassion-based research and regularly uses such interventions in the acute setting. At this initial meeting, the researcher asked participants to complete initial assessment measures. While patients not having capacity at time of admission were initially excluded from the study, these patients were given the opportunity to participate if their capacity status change. As an incentive, participants were offered a \$30 voucher after completing the post, or second set of questionnaires.

It should be noted that the acute mental health inpatient unit for young adults is an open ward where patients regularly engage with each other. To limit potential bias and confounding factors, the intervention and TAU participants were not on the ward at the same time. While the TAU participants received the usual or standard treatment on the unit, the recovery-oriented psychological intervention participants engaged in the intervention incorporating LKM. See the Appendix for the intervention protocol. For both groups, the aim was to administer pre and post questionnaires 7 days apart. In some instances, due to early discharge, this was not possible. This data was still included, as this is the nature of the acute mental health inpatient unit environment. At a minimum,

participants needed to have remained on the unit or participated in the intervention for 3 days. In the LKM intervention, the researcher met with participants individually where the nature of the intervention, including concepts of self-compassion and social connection and current applicability were explained. Participants were informed about the guided LKM as well as the “Meaning to Pause Bracelets”. Meaning to Pause Bracelets were developed as an innovative tool to enhance mindfulness. The Meaning to Pause Bracelets, worn around the wrist of the intervention participants, were programmed to deliver a gentle vibration every 60 minutes. Participants were invited to complete a brief LKM when their bracelet vibrates. The bracelets were chosen to compliment the guided LKM to provide repetition for learning purposes and to increase the positive to negative emotion ratio, as per Losada (1999). As discussed in Chapter 2, Losada postulates that a 3-to-1 ratio of positive to negative emotions is needed to experience the broaden and build effect characterised by personal growth, resilience, and connectedness. This is due to the negativity bias, which states that, due to the potency of negative emotions, positive emotions would need to outnumber them. Hence, it was believed that this recovery-oriented psychological intervention needed to cultivate the regular experience of positive emotions to produce the broaden and build effect.

Specifically, upon the vibration of their bracelet, participants were invited to contemplate a loved one or another living being that makes them naturally smile and say to themselves “May you be safe. May you be peaceful. May you be healthy. May you be free of suffering.” They were then invited to intimate the same compassion towards themselves. “May I be safe. May I be peaceful. May I be healthy. May I be free of suffering.” Finally, patients were invited to send compassion to themselves and their fellow patients on the ward: “May we be safe. May we be peaceful. May we be healthy. May we be free of suffering.” This was printed on a small, laminated card for easy

reference. Participants were advised that they can also utilise this brief intervention when they become distressed on the ward (they will self-monitor this usage).

Participants in the LKM intervention group were asked to wear their bracelets from 10 am until 4 pm each day, but they were able to wear them whenever they pleased. The duration of the intervention was one week, and upon completion, participants were asked to complete post-intervention questionnaires. In some instances, participants were discharged prior to one week but never less than 3 days. Participants were also invited each weekday to participate in a researcher led LKM. Due to the nature of the acute setting, there were times that this daily meditation did not occur due to a range of reasons, including participant being on leave, participant sleeping when researcher available, or due to urgent matters that arose for the researcher to attend to (e.g., urgent discharge related activities, urgent patient reviews, or urgent, unscheduled family meetings). As expected, this intervention needed to be delivered with flexibility.

When designing this study, the intention was to ask participants, both control and intervention, to complete a set of questionnaires, sent and returned via post, one month after the last set of questionnaires were completed. However, upon implementation of this process, return rates were much lower than expected (15-20 percent). This process was subsequently ceased and was viewed as informative for future studies. While participants were aware that a follow-up measure would be sent and returned via post, this process was not successful with the young adult age group. It is noteworthy that many patients were admitted with a number of social stressors, including homelessness or unstable housing. Often these patients move on a fairly regular basis, so sending a questionnaire via post is problematic.

It is important to note that patients were often commenced on medication and may be receiving input from a number of professionals (e.g., psychiatric, social work, occupational therapy, nursing, other psychological input) while on the ward. Hence, both groups were expected to demonstrate improved psychological well-being over the course of their admission; however, it was expected that the participants engaging in the intervention would demonstrate greater improvements in positive emotions, positive reappraisal, self-compassion, social connectedness, and overall psychological well-being.

Participants engaging in the intervention had the opportunity to complete a satisfaction survey, where they provided feedback regarding the intervention: satisfaction, helpfulness, what was liked, what was not liked, whether they plan to implement in daily life, and whether they would engage in the intervention again. The formal intervention ceased after 7 days or at the time of patient discharge.

### **Design and Analyses: Some Challenges.**

This study was a non-randomised controlled feasibility study, with preliminary data analyses, that employed both a within subjects and between subjects design. The between subjects design included one independent variable (intervention vs TAU) and five dependent variables. The dependent variables were positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. The initial plan and aim was to collect >30 for each arm consistent with other feasibility studies. It was envisaged that this would allow an examination of feasibility but would also allow for preliminary analysis of data and helpfulness of the intervention. Consistent with other studies on acute mental health inpatient units, significant challenges were encountered in relation to recruitment, despite offering a \$30 inducement. The researcher found that potential participants were willing to engage in TAU (1<sup>st</sup> participants recruited) and



completing the above-described questionnaires; however, there was more hesitation to engage in the intervention. Subsequently, recruitment for the intervention group took much longer than expected. The original intention and plan was to collect data for a 1 month follow up. This plan was abandoned due to logistical challenges and very low questionnaire return rates. Less participants were included in the study than planned due to significant challenges in recruitment. These challenges were consistent with those identified in the literature to date (Paterson et al, 2019; Raphael et al., 2021). While the researcher intended to collect more than 23 sets of data for the intervention arm of the study, the onset of the COVID-19 health crisis resulted in significant changes to the ward environment. For example, participants were encouraged to isolate, rather than connect. How leave, family contact, and discharge was managed changed, and some clinical interventions were occurring via video, rather than face-to-face contact. At this time, the decision was made to cease data collection as the participant experience would have been considerably different to that of the previous participants. As described below, this resulted in a pivot with regards to analyses due to lower participant numbers and less statistical power.

The study was feasibility in nature, while also utilising a between subjects design in making preliminary comparisons between the LKM and TAU participants on the DVs after the intervention or TAU. The study also employed a within subjects, repeated measures design with the LKM based intervention group. The IV was time (pre-intervention, post-intervention) and the DVs were the above listed variables. LKM participant means were examined at these measurement points to evaluate the changes in the DVs over time. For the LKM participants, data was collected on the immediate impact of the meditation in terms of stress, calmness, positivity about the future, and connectedness to others. They were also given the opportunity to provide feedback about

their overall satisfaction and helpfulness of the intervention. The study also examined whether there was a significant difference in readmission rates between the TAU and intervention participants.

## Results

All analyses were planned a priori before the commencement of data collection. Prior to analyses, the data was screened, and assumptions were met or accounted for. Preliminary analyses were conducted to determine whether the dependent variables and independent variables varied as a function of demographics. To determine whether there were significant differences on the measured variables between the intervention and TAU participants before and after the intervention, independent samples *t*-tests were conducted.

While the initial intention was to utilise a MANOVA to compare intervention and TAU groups, this was not possible due to the small sample size and subsequent low statistical power. The data analysis plan was subsequently adjusted to suit the data that was available. An Independent Samples *T*-Test was utilised to make comparisons between the recovery oriented psychological intervention and TAU participants. A separate repeated measures ANOVA was also conducted for each dependent measure to explore the changes within the intervention participants over time. To decrease the likelihood of Type I error, a Bonferroni correction was utilised. All tests in these analyses were considered significant at the Bonferroni adjusted  $\alpha = .01$  ( $.05/5 = .01$ ). Raw data was entered and analysed using SPSS version 26. Missing values comprised less than 1 percent of the data set, so item mean scores were calculated and substituted for these missing values. Total scores were subsequently calculated. Eighteen participants (14 from control and 4 from the intervention) were not included in the analysis as they did not complete measures post-intervention. This usually occurred when participants were discharged suddenly. Baseline

data for both groups is displayed below in Table 4. No significant differences between groups were noted at baseline.

*Table 4: Baseline Means and Standard Deviations for Treatment as Usual and Recovery-Oriented Psychological Intervention Participants*

Variable	Intervention ( $n = 23$ )	TAU ( $n = 47$ )
Age	21.78 ( $SD = 2.0$ )	20.96 ( $SD = 1.84$ )
Self-Compassion	66.09 ( $SD = 19.53$ )	62.74 ( $SD = 18.67$ )
Positive Emotions	27.35 ( $SD = 9.83$ )	27.06 ( $SD = 10.52$ )
Positive Reappraisal	13.57 ( $SD = 4.77$ )	12.40 ( $SD = 4.58$ )
Social Connectedness	69.04 ( $SD = 19.93$ )	71.64 ( $SD = 20.11$ )
Psychological Well-Being	20.13 ( $SD = 8.07$ )	16.46 ( $SD = 8.88$ )

*Note.* Lower scores on the psychological well-being variable are indicative of higher levels of psychological well-being.

### **Between Group Analyses: Independent Samples T-Tests**

Independent samples  $t$ -tests were utilised to test the hypothesis that the LKM participants ( $n = 23$ ) would report significantly higher levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being than the control participants ( $n = 47$ ) following the intervention and TAU. Because of the small sample size, the Shapiro-Wilk statistic was utilised to test the assumption of normality. The Shapiro-Wilk statistic was significant for positive emotions, positive reappraisal, and psychological well-being variables in the pre intervention measures and again in positive reappraisal and psychological well-being in the post intervention measures, indicating that that the assumption of normality was violated. Upon histogram inspection of these

variables, the violation of normality was not severe, so transformation of these variables was not pursued.

Levine's Test of Equality of Error Variances indicated that no variables were significant at  $p < .05$ , suggesting that this assumption had not been violated. As a result, equal variances were assumed in statistical interpretation for all variables. No significant differences between the LKM and control participants on the dependent measures of self-compassion,  $t(70) = -.64, p = .52$ , positive affect,  $t(70) = -1.56, p = .12$ , social connection,  $t(70) = -1.08, p = .28$ , and psychological well-being  $t(70) = .63, p = .53$  were observed following the intervention and TAU. The positive reappraisal variable was significantly different,  $t(70) = -2.18, p = .03$ , with recovery-oriented psychological intervention, incorporating LKM participants ( $M = 15.61, SD = 4.06$ ) reporting significantly higher levels of positive reappraisal than the TAU group ( $M = 13.09, SD = 4.77$ ).

### **Within Group Analyses: Repeated Measures ANOVAs**

To examine the hypothesis that recovery oriented psychological intervention, incorporating LKM participants would demonstrate significant improvements in positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being following the intervention, a separate repeated measures ANOVA was conducted for each dependent measure. Twenty-three participants were included in each of these analyses.

Intervention participants improved significantly on all variables from pre to post measurements. Results indicated that reported levels of self-compassion significantly changed over time,  $F(1,22) = 50.00, p < .001$ , partial  $\eta^2 = .46$ . Mean scores and standard deviations for each variable are displayed in Table 5. Findings indicated that reported levels of positive emotions also significantly increased following the intervention,  $F(1,22)$

= 10.73,  $p = .003$ , partial  $\eta^2 = .33$ . Significant changes in reported levels of positive reappraisal could be observed over time,  $F(1,22) = 12.36$ ,  $p = .002$ , partial  $\eta^2 = .36$ . The Recovery-oriented psychological intervention, incorporating LKM participants also showed significant changes over time on social connectedness,  $F(1,22) = 10.21$ ,  $p = .004$ , partial  $\eta^2 = .32$ . Significant change in psychological well-being were also reported,  $F(1,22) = 18.36$ ,  $p < .001$ , partial  $\eta^2 = .46$ . All observed effect sizes were very large (Cohen, 1988).

*Table 5: Means and Standard Deviations for Recovery-Oriented Psychological Intervention Participants, Pre and Post Intervention*

Variable	Pre	Post
Self-Compassion	62.74 ( $SD = 18.67$ )	80.17 ( $SD = 19.08$ )*
Positive Emotions	27.35 ( $SD = 9.83$ )	33.48 ( $SD = 9.09$ )***
Positive Reappraisal	13.57 ( $SD = 4.77$ )	15.61 ( $SD = 4.06$ )**
Social Connectedness	69.04 ( $SD = 19.93$ )	80.52 ( $SD = 16.94$ )****
Psychological Well-Being	20.13 ( $SD = 8.07$ )	12.59 ( $SD = 6.96$ )*

\* $p < .001$ , \*\* $p = .002$ , \*\*\* $p = .003$ , \*\*\*\* $p = .004$

*Note.* Lower scores on the psychological well-being variable are indicative of higher levels of psychological well-being.

As the TAU participants were receiving input from psychiatrists, nurses, and the full multi-disciplinary team as indicated, it was expected that this group would also show improvements over time and the course of the admission. As a point of comparison, a separate repeated measures ANOVA was conducted for each dependent measure for control participant pre and post measurements. Only the self-compassion variable

significantly improved over time,  $F(1,46) = 32.10, p < .001$ , partial  $\eta^2 = .41$ , while no significant changes were noted for positive emotions, positive reappraisal, social connectedness, and psychological well-being. Pre and post means and standard deviations for the TAU participants are displayed below.

*Table 6: Means and Standard Deviations for TAU Participants, Pre and Post*

Variable	Pre	Post
Self-Compassion	62.74 ( $SD = 18.67$ )	77.02 ( $SD = 19.46$ )*
Positive Emotions	27.06 ( $SD = 10.52$ )	29.87 ( $SD = 9.07$ )
Positive Reappraisal	12.40 ( $SD = 4.58$ )	13.09 ( $SD = 4.72$ )
Social Connectedness	71.64 ( $SD = 20.11$ )	75.04 ( $SD = 21.12$ )
Psychological Well-Being	16.46 ( $SD = 8.88$ )	13.95 ( $SD = 9.36$ )

\* $p < .001$

*Note.* Lower scores on the psychological well-being variable are indicative of higher levels of psychological well-being.

### **Within Session Change: Stress Bubbles and Repeated Measures T-Tests**

Sixty-three sets of pre and post data were obtained over the course of the intervention, whereby participants were asked to rate their stress, calmness, positivity about the future, and connection to others using a visual analog scale. Statistically significant improvements were observed for stress,  $t(61) = 9.36, p < .001$ , calmness,  $t(61) = -9.75, p < .001$ , positivity about the future,  $t(61) = -5.54, p < .001$ , and connection to others,  $t(61) = -9.34, p < .001$ . Means and standard deviations are displayed in Table 7.

Table 7: Means and Standard Deviations, Pre and Post Session

Variable	Pre	Post
Stress	3.35 ( <i>SD</i> = 1.28)	2.13 ( <i>SD</i> = 1.05)*
Calmness	3.79 ( <i>SD</i> = 1.19)	5.11 ( <i>SD</i> = .96)*
Positivity about Future	4.02 ( <i>SD</i> = 1.30)	4.58 ( <i>SD</i> = 1.08)*
Connection to Others	3.32 ( <i>SD</i> = 1.08)	4.60 ( <i>SD</i> = .95)*

\* $p < .001$

*Note.* Lower scores on the stress variable are indicative of lower levels of stress.

### Readmission Rates

The chi-square test for independence was utilised to ascertain if the recovery-oriented psychological intervention, incorporating LKM participants were less likely to be readmitted than the TAU participants 6 months after admission. This data was gathered by observing clinical notes. This test with Yates' Continuity Correction indicated that there was not a significant difference in readmission rates between the TAU and intervention participants,  $X^2(1, n = 70) = .00, p = 1.00, phi = -.02$ , with 23.4 percent of control group participants ( $n = 11$ ) and 21.7 percent of the intervention participants ( $n = 5$ ) readmitted.

### Satisfaction Survey

The recovery-oriented psychological intervention, incorporating LKM participants were asked to complete a satisfaction survey at the completion of the intervention.

Nineteen participants completed this survey. On a scale of 1 (not satisfied) to 10 (very satisfied), the median score was 9, indicating that the participants were satisfied with the LKM based intervention. On a scale of 1 (not helpful) to 10 (very helpful), the median score was 8, indicating that the participants also found the intervention helpful.

Participants were also asked if they were interested in applying this intervention to their everyday life; 100 percent indicated that they were interested. All but one participant indicated that they would engage in this intervention if on the unit again. The participant who did not wish to engage in this intervention again indicated that the rationale for this decision was that they did not plan to be admitted again and felt they already had a sound understanding of the intervention.

When asked about frequency of practice on the ward, most participants indicated that they utilised the LKM 3 or more times a day ( $n = 9$ ), with 7 participants indicating that they used the LKM 2 to 3 times a day, and 3 participants indicating that they used the LKM once daily. Participants reported that they most often directed their LKM at both themselves and others ( $n = 12$ ), while 6 participants indicated that they primarily directed LKM towards a loved one and 1 participant indicated that they directed LKM primarily towards themselves.

Participants were provided space to provide qualitative feedback, with questions asking about their favourite and least favourite parts of the intervention. Some of the favourite parts of the intervention are mentioned below as written by participants:

- I liked becoming more compassionate to my peers and myself. The vibration was a helpful reminder to be mindful and kind. I believe the exercise helped me become more aware of myself and the thoughts of others. Being nicer to people has proven to be beneficial in my mental health pathway.
- I really enjoyed being able to take some time to dedicate specifically to mindfulness! I also love the bracelet as it acted as a “reminder” for me to see the positive moments in my life.
- To send love and compassion.



- Learning how to be conscious of my breathing again. All parts were helpful in teaching me to be present.
- I loved how calm I instantly felt.
- I liked sending the kindness and compassion to loved ones as it helped me feel more connected to them.
- Allowed me to stop and calm down. Relax my mind.
- Challenging myself to have compassion for people I don't really like.
- I loved the fact that I could stop and get into the moment so quickly and think of myself and others in a loving and caring way. Also, it decreased worry about others and things I can't control. So beneficial to be able to do this while in hospital and not being able to control your external environment.
- Having the opportunity to experience and learn alternative methods of managing stress and emotions. Whilst I don't intend on returning to the ward, this activity and the impact it has made on my self-image and confidence has been profound given such a short timeframe. I thoroughly enjoyed being a part of this study and would definitely participate again.
- Being able to stop and relax for a short period of time.
- Pausing to stop and connect.

Some of the least favourite parts of the intervention:

- It was a little hard to stay focused in some meditations due to the noise on the ward.
- The buzzing bracelet (though this participant also said the bracelet was their favourite part of the intervention).
- Tight fit (referring to bracelet).

- I find concentration difficult as well as showing the kindness to myself.
- When the bracelet would vibrate during times I didn't feel like being self-compassionate...I focused on negative things not self-compassion.
- Only really not being able to stop all the time as I am quite busy and feeling a little disappointed in myself about the ones I had missed and didn't catch up.
- Having to make sure the bracelet didn't get wet.
- Sometimes when not in the mood to meditate I felt I had to.

### **Discussion**

The purpose of the current study was to explore the feasibility of a recovery-oriented psychological intervention, incorporating LKM on an acute mental health inpatient unit for young adults with the aim of increasing reported levels of positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. To the author's knowledge, this is the first study evaluating the feasibility and impact of a recovery-oriented psychological intervention on an acute mental health inpatient unit for adults in Australia. This is also the first trial of the effectiveness of LKM in an acute mental health inpatient setting. There is a significant shortage of research in this area, so this study aimed to contribute to growth in this area. This study included a TAU group and collected a range of data, including pre and post measures to allow for between and within group comparisons, pre and post LKM session measures to explore the immediate impact of the LKM, a satisfaction survey about the recovery-oriented psychological intervention, incorporating LKM, and rehospitalisation rates to allow for comparisons between TAU and LKM based intervention participants.

The first prediction was that the LKM participants would report significantly higher levels of self-compassion, positive emotion, positive reappraisal, social

connectedness, and psychological well-being than the TAU participants, following the intervention and TAU. This hypothesis was partially supported as a significant difference between the recovery-oriented psychological intervention, incorporating LKM and TAU participants was observed on the positive reappraisal variable but not the others. This finding can be viewed in light of the Lazarus and Folkman (1984) transactional theory of stress, where reappraisal is a central concept. This theory posits that stress is the result of an imbalance between demands and resources, where an individual continuously appraises an ongoing situation and analyses whether a threat exists. While the initial appraisal involves threat perception and considerations for well-being, the secondary appraisal, or reappraisal, involves a cognitive-evaluative process whereby an individual considers whether they have the resources to cope with the stressful situation.

Building upon this theory, it is possible that the LKM, by promoting self-kindness, common humanity, and social connection, is resource building and resulted in a shift in perspective and more positive reappraisal of the situation (e.g., mental health deterioration and admission). Instead of viewing this situation as threatening, the admission was potentially re-constructed as benign, valuable, or beneficial. This result suggests that the recovery-oriented psychological intervention, incorporating LKM may have encouraged a more adaptive response or perception by encouraging participants to view this situation as an opportunity for growth and improvement through adversity. This is similar to the LKM origins, where the meditation was prescribed to those who were fearful about a threatening situation. It is also well established that negative emotions narrow the scope of an individual's attention and thinking (Schmitz, De Rosa, & Anderson, 2009). It is believed that this narrowing of cognition and attention, along with specific urge actions (e.g., fight or flight) is an evolved adaptation that has aided the survival of the human species in life threatening situations (Frijda, 1988). In an actual life-threatening situation or a perceived

life-threatening situation, a narrowed focus and thought-action repertoire can provide quick, decisive action. However, this narrowed focus can be unhelpful in the context of mental health challenges. For example, this narrowed focus may result in a sense of feeling stuck for an individual with severe anxiety or for an individual experiencing suicidal ideation and accompanying “tunnel vision”, or cognitive constriction. Cognitive constriction is a narrowing effect where it is difficult to see beyond the current circumstances and there does not appear to be another way, other than suicide, out of the crisis. While this effect is not permanent, it can increase the risk of an individual acting on suicidal thoughts in that moment. It is possible that the recovery-oriented psychological intervention, incorporating LKM served to promote positive reappraisal by reducing this cognitive constriction and broadening perspective. This broadening or widening of perspective may promote recovery by highlighting that change is possible – for example, that it is possible to experience positive emotions, or to feel compassion for the self, or to connect with others. Such an adaptive shift in perspective could be helpful in promoting recovery in acute mental health inpatient unit, as this is often the beginning of the recovery process for the patient. While the intention was to gather follow up data to observe such changes over time, this proved logistically challenging. It is worth noting that both groups received input from a full multi-disciplinary team and showed expected improvements over time. At times, improvement in mental state and crisis stabilisation can occur rapidly upon admission to an acute mental health inpatient unit. This tendency may have made group differences difficult to detect.

The second prediction was that, based on within group comparisons, the recovery-oriented psychological intervention, incorporating LKM participants would demonstrate significant improvements in positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being following the intervention. This

hypothesis was supported with all variables showing significant improvements across the pre and post variable measurements. This finding is consistent with previous research which has demonstrated that LKM increases self-compassion and social connectedness (Gilbert, 2005; Neff & Germer, 2013; Richards & Martin, 2012) and positive emotions (Frederickson et al., 2008; Hofmann et al., 2011; Kok et al., 2013). This finding is also in line with previous studies demonstrating that LKM can be used in clinical settings with patients with schizophrenia and trauma related disorders (Johnson et al, 2011; Kearney et al., 2013). Similar to Hutcherson et al (2008), LKM in the current study was taught to participants in a short amount of time. The current study is unique in that this is the first application of LKM in the acute mental health inpatient setting. These preliminary findings suggest that LKM is beneficial for patients in the acute mental health setting.

This finding is consistent with the broaden and build theory of positive emotions (Fredrickson, 1998), which states that the experience of positive emotions can broaden momentary awareness in ways that build personal resources. With phrases and intentions designed to create compassion for self and others as well as increasing a sense of connection, LKM seems well-suited to the acute mental health inpatient environment as patients often feel isolated and distressed, with high levels of self-blame and self-criticism. By generating authentic, warm-hearted emotions, feelings of connectedness to others, self-compassion, and a more positive reappraisal of the situation, LKM may serve to propel the patient's recovery process.

As a comparison point, the same analysis was conducted with the control group, with only self-compassion showing significant improvements over time. This is an interesting finding in itself, as one might expect a measure of psychological well-being to significantly improve, but not necessarily self-compassion. This effect may be due to an increased sense of common humanity on the ward, which may decrease the patient's sense

of isolation, or the sense that they are the only ones struggling with a severe mental health condition. This acute mental health inpatient unit utilises Safeward practices, which promote healthy peer to peer support and interaction. The unit has a number of communal spaces where patients are able to interact, share their stories, or engage in an organised or impromptu activity together. The unit holds a morning mutual help meeting where introductions are made daily, and patients are able to offer support or to ask for support from staff or other patients. Such practices may provide a framework that such interactions are appropriate and encouraged so then occur organically during the admission.

The third prediction was that the recovery-oriented psychological intervention, incorporating LKM participants would demonstrate significant improvements in stress, calmness, future positivity, and connectedness to others ratings after meditation sessions, as indicated by pre and post LKM session measurements. This prediction was supported with all variables showing significant within session improvements. This finding is important as this supports the immediate utility of LKM in the acute mental health inpatient setting, where patient levels of stress and distress are often high. In an environment where PRN medications are common (and essential) for acute inpatients, finding other solutions and ways of reducing distress and agitation are highly desired. The “Stress Bubbles” measure, as developed by Jacobson et al (2011) was a simple, brief, but effective tool in this research, which was well suited to environment and purpose and could be implemented as a measure of within session change in future studies. Future studies may wish to expand upon the current study by incorporating unit staff into this intervention, allowing patients and staff to engage in a guided LKM together. Given the high levels of stress in this environment for all parties, it would be interesting to see whether such an intervention would have an impact on unit dynamics, patient-staff interactions, and even staff absenteeism.

The fourth prediction was that the recovery-oriented psychological intervention, incorporating LKM participants would have significantly lower rates of readmission than the control participants at 6 months post-intervention. No significant differences were noted when readmission rates were examined (by examining clinical notes), with 23.4 percent of control participants and 21.7 percent of LKM participants readmitted. It is worth noting that, in other studies that examined readmissions rates to acute mental health units after psychological intervention, control, or treatment as usual, groups had much higher readmission rates than the control participants in the current study. In the Bach and Hayes (2002) and Gaudiano and Herbert (2006) studies, control participants were readmitted 40 percent and 45 percent of the time respectively. Readmission rates for the intervention groups (both Acceptance and Commitment Therapy based interventions) for these two studies were 20 percent and 28 percent, which are comparable to the rates of the intervention participants in the current study (21.7 percent). This finding suggests that the TAU participants are receiving a high-quality inpatient and community service when compared to other TAU groups internationally.

Recovery-oriented psychological intervention, incorporating LKM participants also completed a satisfaction survey, and the results indicated that participants were satisfied (*Median* = 9 with 10 very satisfied) with the intervention and found it to be helpful (*Median* = 8 with 10 being very helpful). All participants who completed the survey indicated that they were interested in using this practice in their day-to-day lives, and all but one participant indicated they would engage in the intervention if on the ward again. Qualitative feedback was also favourable with participants appreciating opportunities to send compassion to themselves and others, learning new coping skills, noticing positive emotions, being present, and becoming calm. The least favourite aspects of the intervention mentioned were the noise levels on the ward, finding hard to show

compassion at times, and feeling an obligation to meditate when the bracelet vibrated even if they did not feel like it. While the majority of the feedback regarding the bracelet was positive (e.g., participants liked the physical reminder of the intervention), future studies incorporating such an intervention may wish to give participants an option between a phone app or the physical bracelet.

Taken together, these findings suggest that the recovery-oriented psychological intervention, incorporating LKM was feasible in the acute mental health inpatient setting and that this intervention was helpful for participants. There were some limitations to this study. The design of the study was a non-randomised controlled feasibility study, so the observed effect of the intervention needs to be interpreted with caution. While randomised experimental designs are most effective in analysing the effect of an intervention, this design is very challenging in terms of implementation in an acute mental health inpatient setting. That said, without the use of a randomised controlled design, causality cannot be attributed to the intervention. Significant challenges were encountered with regards to recruitment. This was expected and consistent with other researcher experiences in acute mental health settings. While data was not collected regarding why the intervention was declined, based on observations this was due to the acuity of the patients and the social challenges (e.g., relationship break down, homelessness) that often accompany severe mental health deterioration. In some cases, it seemed as though patients declined because they were overwhelmed with their current circumstances and did not feel able to participate in a new experience at that time. It is possible that the high rate of potential participants declining to participate in the intervention created a biased sample. Future studies should adopt the CONSORT (for interventions trials) and TIDIER (for reporting the intervention results) guidelines so that more information can be obtained, in a systematic manner, regarding the progress of all participants through the trial (i.e., how



many and who declined to participate and why). Future studies may also wish to use open science practices to increase transparency within the research process. Future studies should also consider involving acute mental health inpatients in the development of the trial. Their input may be beneficial in a consideration of factors that may improve patient uptake in the trial. Recruitment of participants for the intervention was ceased earlier than expected due to the escalating COVID-19 situation which resulted in significant changes to ward functioning. The resultant small sample size and subsequent low statistical power limited the type of analyses that could be conducted. The small sample size also limits the generalisability of the findings and requires the therapeutic gains to be viewed as preliminary and requiring replication. That stated, significant findings with a small sample size suggests that the recovery-oriented psychological intervention, incorporating LKM shows promise as an intervention in clinical and acute mental health environments. Self-report measures are prone to response biases and the effects of social desirability, which may have influenced participant responses. With limited budgets and high expenditure in the acute mental health inpatient setting, future studies may wish to consider cost benefit analysis as a means of increasing health service interest and involvement in the project. Moreover, the primary researcher was also the primary data collector and LKM facilitator. Ideally, multiple clinicians would be involved, and staff would be blind to treatment condition. Future studies would benefit from a more coordinated approach, with perhaps more involvement from other members of the multidisciplinary team. A more integrated approach, also involving community case managers, would have allowed for more follow up data collection (e.g., community case managers could encourage completion of questionnaires) as this would allow for examination of the effects over a longer period of time. Future studies may also wish to consider an active comparison group, rather than a TAU group.

It was not possible to randomise participants due to pragmatic and ethical issues. When delivering a group intervention on an acute mental health inpatient, it is difficult to ethically justify the exclusion of certain service users from such a unit intervention. Moreover, as the patients regularly interact with each other on the ward, it is not possible to have both control and intervention participants on the ward at the same time due to potential contamination. It was also not possible to control for contact time or impact of interventions from other professionals. As can be seen here, it is difficult to maintain internal validity in the acute mental health inpatient setting, which is further complicated by its often-chaotic nature, mix of patients with different diagnoses, and unpredictable lengths of stay. That said, ecological validity is high as this is very much “real life” research in that this study occurred in a true to life setting. In this sense it is practice based evidence, which may complement the more rigorous evidence-based practice, which is extremely difficult to achieve in such a setting (which would subsequently limit ecological validity and generalisability if achieved). The procedure used in the current study is an example of how clinical research can be implemented in an existing treatment structure without extensive funding.

A great deal of flexibility was required in delivering this intervention and conducting research in the acute mental health inpatient setting. Because the primary researcher was conducting this research along with usual day-to-day duties, there were times when daily meditations had to be rescheduled or rearranged due to other urgent matters, lack of available therapeutic space on the ward, or participants being out on leave or asleep when the researcher was available. This did not happen often, but it is something to bear in mind when conducting research in this setting. While environmental control is desirable in research, this is challenging to achieve in the acute mental health setting, which likely contributes to the shortage of research in this area. This was anticipated to an

extent, with the Meaning to Pause bracelet envisaged as assisting in this area. This intervention could be perceived as repetitive; however, this was by design as repetition may assist in consolidation and learning given the likely elevated levels of distress of the participants. It was anticipated that most participants would have diagnoses of a psychotic disorder, BPAD, and BPD and that residual symptomatology and distress may impact upon participant cognition. Through repetition and increased learning of one meditation, it was believed that participants would feel more comfortable after discharge when applying in their daily lives. This approach is also consistent with the work of Losada (1999) who postulates that a 3-to-1 ratio of positive to negative emotions is needed to experience the broaden and build effect characterised by personal growth, resilience, and connectedness. This is due to the negativity bias, which states that, due to the potency of negative emotions, positive emotions would need to outnumber them. In other words, an affective balance that exceeds a 3-to-1 positivity ratio will build resilience to stressful life events. Hence, any intervention with the intention of increasing positive emotions, particularly in mental health settings, needs to cultivate the regular experience of positive emotions to produce the broaden and build effect.

The results of this study support the feasibility and potential effectiveness of this recovery-oriented psychological intervention, based on the PERC<sup>2</sup> Up model and incorporating LKM, in acute mental health settings for increasing self-compassion, positive emotions, positive reappraisal, social connectedness, and psychological well-being. While the onset of COVID-19 was a significant confound and disrupted the recruitment of the intervention group, the final results, albeit with less participants than anticipated, are believed to be an accurate reflection of the benefit of the intervention in the acute mental health inpatient setting as the intervention and data collection was ceased when the impact of COVID-19 was felt on the ward, with increased restrictions. The

intervention was delivered under the usual, or “normal” conditions on the ward and found that intervention participants demonstrated significant improvements in positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. The intervention was well received as indicated by the satisfaction survey and also demonstrated significant improvements in stress, calmness, future positivity, and connectedness, immediately after meditation sessions. The findings also suggest that such an intervention does not need to be lengthy to have a positive effect. This study adds to the literature on psychological interventions in acute mental health inpatient units. While further research is needed in this area given the above listed limitations, this PERC<sup>2</sup> Up model-based intervention, incorporating LKM appears well-suited and of great utility in this area.

## Chapter 7 – General Discussion

### Chapter Overview

This program of research has made an important contribution to the literature on recovery-oriented psychological interventions in acute mental health inpatient settings, with a focus on young adults, in a number of ways. This research systematically reviewed the literature on psychological interventions on acute mental health units, providing an updated review to the literature, identifying gaps for future research. This program of research also developed and validated the PERC<sup>2</sup> Up model of acute mental health recovery, which provides a recovery framework and specific points of intervention to promote mental health recovery, an area that has been lacking in the literature. This research provided a unique comparison of young adults in university and acute mental health inpatient settings to highlight the mental health challenges of university students and the need for more recovery-oriented psychological interventions in this context. Finally, this research provided an evaluation of a recovery-oriented psychological intervention, based on the PERC<sup>2</sup> Up model and incorporating LKM in an acute mental health inpatient unit. As highlighted in the preceding chapters, this is a complex setting to conduct research, with only 34 published studies identified in total via the systematic literature review. Moreover, this is this first recovery-based psychological intervention evaluated in the Australian acute mental health context with an adult sample.

Within this program of research, a number of gaps in the literature have been addressed:

- Provided an updated review of the research literature of psychological interventions on acute mental health units, including gaps in this research. This

highlighted the need for further research in this area given the relative shortage and lack of publications.

- Provided a validated model of mental recovery, the PERC<sup>2</sup> Up model, which applied the broaden and build theory to mental health recovery in the acute mental health setting. This can provide clinicians working in this complex area of practice with a pathway for improvement and recovery with a framework to guide interventions in this space.
- Provided a unique comparison of young adults in the university and acute mental health settings, highlighting the struggles of young adults in the university setting and suggesting that further recovery-oriented psychological interventions are essential and should be developed in this setting.
- Provided an evaluation of an original recovery-oriented psychological intervention, based on the PERC<sup>2</sup> Up model and incorporating LKM, in the acute mental health inpatient setting. This was the first evaluation of a recovery-oriented psychological intervention in the Australian context with an adult sample, and the first evaluation of an intervention using LKM as a primary intervention in the acute mental health inpatient environment.
- Expanded the range of recovery-oriented psychological interventions in the acute mental health inpatient setting beyond that of the more commonly published CBT and ACT and applied a transdiagnostic approach, rather than diagnosis specific interventions.
- Expanded the data that is collected in evaluating recovery-oriented psychological interventions in the acute mental health inpatient setting by incorporating pre/post questionnaires, an evaluation of session impact, a satisfaction survey and readmission rates.

- Provided a recovery-oriented psychological intervention for young adults promoting early intervention, consistent with Australia's mental health policy.

This final chapter begins with a discussion of the research and clinical implications of this research, follow by a consideration of the main strengths and limitations of the research project, with suggestions for future research provided.

### **Conclusions, Implications, and Recommendations**

In terms of implications for future research, it is clear that further research of effective psychological interventions is required in the area of acute inpatient mental health. This is a complex area of practice where we are still learning what is effective practice. It is hoped that the systematic quantitative literature review will provide some guidance and suggestions about potential areas where this research can occur. In reviewing the literature, it was apparent that each country has differences in acute mental health inpatient management. It is therefore important that more research be conducted in the Australian context, as it is believed that this evaluation of a recovery-oriented psychological intervention, incorporating LKM in the acute mental health inpatient setting was only the second of its kind in Australia and the first with an adult sample. As a clinical psychologist who has worked in the acute inpatient setting for nearly 7 years, there is considerable value in "real life" research, with efforts made to control what is pragmatically possible. The lack of opportunities for experimental control is likely a deterrent to conducting research in this area, but it is hoped that this current program of research demonstrates that it is possible and worthwhile. The current study in Chapter 6 was found to be feasible, with high levels of satisfaction (9/10) and helpfulness (8/10), supporting the benefits of such interventions in the acute environment. Moreover, as noted in the systematic literature review in Chapter 3, 11 of the 34 studies identified were

published in the last 5 years, showing an increased willingness to conduct research in this setting. Methodological limitations in the research to date were highlighted in Chapter 3 (e.g., lack of randomisation and blinding, small sample sizes, attrition and self-selection biases). A challenge for future research will be in finding creative solutions to achieve the balance between internal and external validity so that a better understanding can be gained regarding what types of therapy and interventions are most effective in the acute mental health inpatient setting.

Future research should consider a team-based approach to delivering and evaluating an intervention. In the current program of research, the writer incorporated research responsibilities and tasks into day-to-day functioning on the acute unit. While this allowed for this current program of research to occur, this comes with certain challenges with regards to workload and clinical prioritisation. For example, at times, a scheduled LKM with a research participant was rescheduled due to an urgent matter arising as occurs in acute mental health. Perhaps if other allied health staff or the medical team were trained in the intervention, they could have assisted in delivering the intervention and reducing the impact of urgent matters. While the other members of the multidisciplinary team were aware and supportive of the intervention and research trial, this was largely an intervention delivered by the writer. This could have been further developed by presenting to nursing staff on several occasions, taking into account the roster changes and structure (e.g., some not aware as they were working on night shift when trial discussed).

As highlighted above, there are considerable challenges to research in this area. These challenges were predicted but were more pronounced than anticipated. Recruitment was perhaps the most significant challenge with many participants deciding not to participate due to a sense of being overwhelmed and perhaps not in a headspace to be



learning and implementing something new. As is well established, heightened levels of distress and chaos impact cognitive functioning and the ability to learn new information. For instance, if a patient had just broken up with a girlfriend, or needed to find a new place to live, or had just experienced their first psychotic episode, it is understandable that they may need time to process this information and might not be ready to engage and to implement a new psychological intervention. Because these situations are common in acute mental health settings, conducting research here can be disheartening, so it does require a degree of gumption, flexibility, understanding, and self-compassion on the part of the researcher. There were a number of patients interested in the study, but for practical or logistical purposes unable to participate. For instance, some individuals were admitted onto the ward for a period too short (e.g., 48 hours) to engage in the researched intervention. The inducement (\$30 voucher) was helpful in encouraging participation for some; however, many declined despite the inducement, and many indicated that they would engage without an inducement. As noted above, this program of research intended to recruit more research participants for the acute inpatient psychological intervention study; however, the onset of COVID-19 resulted in significant changes to unit functioning. There were fewer therapeutic spaces available, families unable to visit, patients unable to access leave, fewer face to face interactions, encouraged isolation for patients and staff, increased anxiety about long-term pandemic impact, and interventions delivered via videoconference, just to name a few. Because of the significant changes to unit functioning, recruitment was ceased, and the decision made to use the data that had been collected to that point. The researcher was of the opinion that this was too large a confounding factor that would impact on the ability to make comparisons between patients and experimental groups. Hopefully future research does not have to contend with the onset of another pandemic anytime in the near future.

When this research was commenced on this acute mental health inpatient unit for young adults, patients were not allowed to have their mobile phones on their person. This policy influenced the use of the Meaning to Pause Bracelet as a prompt to engage in the LKM intervention. However, this policy changed over the course of the research, enabling patients to access their phones at all times (unless assessed by the multi-disciplinary team to be a risk). Future research may wish to incorporate technology into interventions. For instance, this could include LKM delivered via recorded audio or video.

Future studies should adopt the CONSORT (for interventions trials) and TIDIER (for reporting the intervention results) guidelines so that more information can be obtained, in a systematic manner, regarding the progress of all participants through the trial (i.e., how many and who declined to participate and why). Future studies may also wish to use open science practices to increase transparency within the research process. The involvement of acute mental health inpatients in the development of future trials should be considered and may improve patient uptake in the trial.

The current program of research developed the PERC<sup>2</sup> Up model of mental health recovery, applying the broaden and build theory to mental health recovery in the acute mental health setting. Future research may also wish to consider the further development of models of mental health recovery. The development of further models, or building upon the PERC<sup>2</sup> Up model, can assist in the development of future psychological interventions and provide useful information about targets for intervention. Models of acute mental health recovery can also assist those working in this area in understanding the process of recovery, while providing a framework and clear points for intervention and therapeutic pathways in promoting mental health recovery. This is an area where clinicians and researchers are still learning given the shortage of research in the acute inpatient mental

health area. This program of research attempted to address this by developing and initially validating the PERC<sup>2</sup> Up model of mental health recovery and by using this model as a basis for a recovery-oriented psychological intervention, with LKM the mechanism by which positive emotions were experienced and change initiated.

As mentioned in Chapter 6, future research may wish to focus on replicating the results with a LKM intervention in other acute mental health settings. This would assist in increasing the generalisability of the findings. This research may be expanded by including unit staff in the intervention. Because the LKM intervention involves the development of social connection and compassion for self and others, this has the potential to improve staff-patient relations and interactions. Engaging in such an intervention together may assist in encouraging participation but also in developing a sense of common humanity for both staff and patients.

The results of this program of research also have implications for clinical practice. The PERC<sup>2</sup> Up model of recovery provides specific areas for intervention, including positive emotions, positive reappraisal, self-compassion, and social connectedness. In working in the acute inpatient setting, the writer observed that interventions targeting these variables showed promise. The validation of the PERC<sup>2</sup> Up model of recovery supports these observations. One such intervention, which targets all these variables, is LKM as used and discussed in Chapter 6. In this study, the recovery-oriented psychological intervention, incorporating LKM was found to significantly improve positive emotions, positive reappraisal, self-compassion, social connectedness, and psychological well-being. As discussed above, this is consistent with findings that LKM can be learned and implemented with benefit in a short period. This is also consistent with findings that LKM is beneficial for individuals presenting with trauma and psychotic based disorders, as these

are prominent and common presentations on the unit. With its focus on developing the experience of positive emotions, LKM was viewed as a very suitable intervention for this purpose. It was predicted that the experience of positive emotions may loosen the hold of negative emotions on the individual's mind by broadening the individual's perspective. The deliberate cultivation of positive emotions by LKM was thought to complement the traditional biomedical model in the acute mental health setting, with a focus on promoting the experience of positive emotions and promoting an upward trajectory of recovery, rather than a focus on symptom management. In addition to targeting these variables helpful in recovery, the recovery-oriented psychological intervention, incorporating LKM was well received based on the satisfaction survey results. Importantly for the acute mental health setting, the findings from the pre and post session scores indicate that LKM can have immediate benefits, with significantly improved calmness, distress, connectedness, and optimism about the future. Taken together, the validation of the PERC<sup>2</sup> Up Model and the results of the recovery-oriented psychological intervention, incorporating LKM pilot, suggest that intervention utilised is beneficial and feasible to be used in the acute inpatient mental health setting. Other interventions targeting the PERC<sup>2</sup> Up variables should also be considered.

While the research program has been beneficial with results to guide future research and clinical practice, there are limitations that should be noted. Study specific strengths and limitations have been discussed throughout this thesis. This section presents a general overview of main issues pertaining to the program of research as well as some opportunities for future research. The generalisability of the findings of this program of research may be limited as the participants were all young adults. Future research may wish to expand the clinical sample to other populations to increase generalisability of the findings. This sample was chosen for logistical and pragmatic reasons, as this is the

population admitted to the acute inpatient mental health unit on which the writer works. This program of research included the development and initial validation of the PERC<sup>2</sup> Up model of recovery. As this validation included only a young adult sample, similar to the above limitation, future studies may wish to expand this focus to determine model applicability in other contexts.

Described in detail above and in Chapter 6, the LKM intervention study in the acute inpatient setting is limited in that it is extremely difficult to control many aspects of this research setting. By nature and definition, it is a chaotic environment. While this impacts on the study's validity and the conclusions that can be drawn about study effectiveness, this was viewed as an example of "real life" research, with high ecological validity. In intervention studies such as this, researchers will have to make decisions about what they can and cannot control in these settings, while also bearing in mind what will be helpful for those working in this complex area. The analyses that could be conducted were limited by the small sample size. As this was a pilot study, further studies will be needed to replicate these findings. Recruitment was more challenging than anticipated. The findings for the LKM intervention study need to be interpreted with caution as participant expectations may have influenced their performance (i.e., demand characteristics). Furthermore, there may have been an element of self-selection, whereby the participants who agreed to participate in the intervention were the most motivated to change. As discussed above, future research should consider an expanded research team, rather than sole researcher. This will have many benefits, including differentiating between those facilitating the intervention and those collecting data, reducing workload and increasing sustainability, and perhaps increasing sample size.

This recovery-oriented psychological intervention study was intended to include a 1 month follow up to ascertain whether benefits were maintained. Return rates were so low that this portion of the study was abandoned. Future studies should consider having stronger systems in place if attempting to collect follow up data after admission to an acute mental health unit. These strong systems might include involvement of community case managers, additional incentives for the final follow up data collection, and potentially further attempts to gather this information by phone. In an attempt to improve follow up data collection, future research involving practitioner researchers may wish to develop risk management protocols as part of the ethics review process to manage any potential risk issues arising when collecting follow up data (e.g., if the participant is in the community and a risk issue is raised). As indicated above, this research and data collection was incorporated into the writer's day-to-day workload on an acute mental health inpatient unit. This work is often intense and workload high, so making attempts to prompt the return of follow up data questionnaires was extremely difficult. There are some other ethical challenges to consider here. Suicidal ideation is a common symptom or occurrence for individuals admitted to acute mental health settings. If a participant is contacted by a clinician in a research capacity regarding follow up data and the participant is reporting heightened suicidal ideation or intent to act on these thoughts, what is the role of the researcher? The answer to this will vary and depend on the nature of the systems in place, but it is an ethical issue that needs to be considered in future research.

Despite these limitations, this program of research has contributed to the area of recovery-oriented psychological intervention in the acute mental health setting. One of the main strengths of this thesis was the logical methodology that allowed the findings from the systematic quantitative literature review and the developed and validated PERC<sup>2</sup> Up model of recovery to inform the type of intervention in the final study. Moreover, the

model was informed by both literature review and years of experience and observations about what promotes recovery as a clinical psychologist in the acute inpatient mental health setting. The development of such validated models is important as this can assist in guiding recovery principles and practices. Moreover, many of the models in the literature are based on synthesis of literature, rather than a statistically validated process. The recovery-oriented psychological intervention, incorporating LKM added to the literature of psychological interventions in acute inpatient mental health settings. As mentioned throughout this thesis, there is a significant shortage of research in this area. It is hoped that this thesis, including the quantitative systematic literature review, may be useful for clinicians or researchers wanting to engage in more research in this area, or those wanting to have a fuller understanding of effective practice in this area. When comparing university and acute mental health inpatients, there were not significant differences between these groups on positive reappraisal, social connectedness, psychological well-being. It was surprising to find that acute mental health inpatients actually reported higher levels of positive emotions, though both were lower than in other studies (so this result does not appear related to residual symptoms of mania in the inpatient context). Given the above-described surveys about the mental health challenges of university students, this finding highlights the need for more attention to be paid to how university students are coping and what can be done to remedy this both structurally and psychologically. These findings suggest that the PERC<sup>2</sup> Up model of recovery and the recovery-oriented psychological intervention, incorporating LKM are also applicable and likely beneficial for university students.

This program of research included an updated systematic literature review regarding effective psychological practice in the acute mental health inpatient context, the development and validation of a model of mental health recovery, and Australia's first trial

of a recovery-oriented psychological intervention with an adult sample, incorporating LKM on an acute mental health inpatient unit. This was also the first trial of an intervention with LKM at its core in this setting and provided preliminary evidence that this intervention is beneficial, with high levels of satisfaction from participants and immediate impact. Addressing these identified gaps in the literature were the overarching aim of this thesis. This thesis revealed where future research on psychological interventions in the acute inpatient mental health setting can focus, while also providing suggestions about how research can be implemented in this challenging environment for research execution. In conducting the recovery-oriented psychological intervention, incorporating LKM in this context it is hoped that this demonstrates that research in this area, while challenging, is possible. Further research may wish to build upon this thesis by developing additional models or interventions or building upon what was discussed and demonstrated here (e.g., replication with other populations). Ongoing research in this area is vital, particularly with the lack of validated, evidence-based recovery models and interventions to support patients in the acute inpatient mental health settings. Developing validated recovery models and recovery-oriented psychological interventions for this setting appears crucial in easing the transition back into the community and “kickstarting”, or accelerating, the recovery process for these individuals experiencing a very difficult period in their life. This thesis has provided valuable contributions in this area of practice, and it is hoped that this research might further stimulate this important endeavour.



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## Appendix 1

### Study Introduction for Participants

*“Our human compassion binds us together...as human beings who have learnt how to turn our common suffering into hope for the future.”*

Nelson Mandela

*“Too often we underestimate the power of a touch, a smile, a kind word, a listening ear, an honest compliment, or the smallest act of caring, all of which have the potential to turn a life around.”*

Leo Buscaglia

Welcome,

Some people find it hard to be kind to themselves because, from years of conditioning, they have become their own harshest critics – which usually increases their suffering and sadness. If you search the whole world over, you will find no one more worthy of loving kindness than yourself. Think of the saying “this is the first day of the rest of your life”, and start with a blank slate in your mind. We will begin to fill that slate with thoughts of kindness, friendliness, and love for yourself and others.

Over the next week, we will engage in loving kindness meditation as well as discussions about how this meditation feels for you and how this meditation can generate positive emotions, compassion and kindness for ourselves and others, and increase our connection to others. We will offer a loving kindness meditation session (about 10 minutes) after morning meeting each weekday.

You will also be asked to wear a bracelet, which will vibrate to remind you to say a brief loving kindness meditation that you will be taught. What will be asking you to do is not too complicated, so you should be able to participate even if you have a lot on your mind at the moment.

We hope that you find this helpful on the ward and maybe even when you go home.

But first...what is loving kindness meditation?

Loving kindness meditation has the potential to transform how you perceive and relate to your world. In this meditation, we will be planting seeds of loving kindness in place of self-criticism, self-doubt, and self-isolation. This meditation is designed to:

- Teach us how to be a better friend to ourselves
- Help to soothe us when we feel bad
- Increase positive emotions like optimism and hope
- Increase compassion and kindness for ourselves and others
- Increase our sense of being connected to others
- Promote physical and mental health

Loving kindness meditation has been shown to be helpful with a range of mental health issues and can assist us to cope with negative thoughts and emotions like anger, shame, sadness, anxiety, self-criticism, and distress. Loving kindness meditation can also help us to develop healthy relationships and to look after ourselves the way we look after others.

Loving kindness meditation helps us to develop compassion for ourselves. When we develop self-compassion, we begin to develop:

**Self-kindness** – We accept, understand, and have compassion for ourselves, as we would have for a best friend, family member, child, or pet.

A sense of **common humanity** – We are not alone! All beings experience shortcomings and pain, and many others have similar feelings, thoughts, and experiences to you. Even when we feel alone, we are connected to others. When we realise this connection, we have improved health, meaning, and happiness.

**Mindfulness** – We are aware of our thoughts and feelings. We do not avoid or ignore them, but we try not to become caught up or carried away by them either.

Most cultures throughout the world have promoted love, kindness, compassion, and service as a method of transcending the self and leading a healthy, happy, and meaningful life. That said, the act of sitting down and engaging in a focused practice is very unique in today's fast paced culture. So let's give it a try.

## Appendix 2

### **Meditation Script for Recovery-Oriented Psychological Intervention**

#### Loving-kindness Meditation Introduction

In the loving kindness meditation, we will think about how we are connected to the world and how we share many basic qualities with other people, such as wishing to be free from suffering. This meditation also involves generating feelings of kindness, connectedness, and compassion for ourselves and others. It can be challenging, but don't stress, we'll lead you through it slowly. Just as we do, others wish to be healthy, safe, and free from suffering. Sending love and kindness to ourselves may give us a break from worry and negative thoughts while also decreasing feelings of separation and isolation. It also provides us with a sense of meaning and purpose. In short, the main purpose of this exercise is to feel more connected to others and more compassion for ourselves and others.

These exercises are sometimes learnt best by doing rather than talking about them, so why don't we give it a try.

You may wish to put your hand on your heart as a reminder to be kind to yourself. You may wish to do this just for a moment or for the duration of the exercise.

There is an old wise saying that says "sometimes your joy is the source of your smile, but sometimes your smile can be the source of your joy". Making a "half smile" (or smiling just a little) can help increase feelings of well-being and increase positive emotions. You may wish to half smile during this exercise.

#### Loving-kindness Meditation Exercise

Find a comfortable but not slouching posture on a chair or on the floor that will allow you to breathe fully. I will begin and end this exercise with the ringing of a chime. Allow yourself to settle in and come fully to this place and this moment. (CHIMES)

Let's begin by taking consciously paying attention to your breath. This process of paying attention to your breath on purpose is a way to reconnect the mind and body. The breath is an anchor, which is always present, and can always be returned to. Observe the breath at the belly. The belly rises on the inbreath and falls on the outbreath. You will notice that no two breaths are the same. Notice slight difference in each breath. Try to notice the tiny space between your inbreath and outbreath. Take a few moments to just follow your breath.

During this process you will find that your mind has drifted away from the present. This is normal, so when you have noticed that this has occurred gently invite your mind back to what we are attending to right now.

When you feel in touch with your breath and the present moment, begin picturing a person whom you care about deeply, whether family or friend. Recognise how vulnerable this loved one is – this person struggles too. Just like all of us, this person wishes to be peaceful and free of suffering.

Keeping in mind that this person has their own struggles and vulnerabilities, we will now repeat intentions to send our love, warmth, and kindness to them. While keeping your loved one in mind, you may find it useful to silently say the following intentions or simply hear them and let them resonate with you:

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

Holding your loved one in mind, we will repeat the intentions again:

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

Now we will expand the circle compassion further to include people in hospital on the ward. This could include other patients, nurses, doctors, families. Perhaps you may wish to think of others that you met on the ward or people you have shared a glance with, but have never met. Recognise that just like us they want to be kind to themselves, peaceful, healthy, and free from suffering.

We send them the same warmth, kindness, and compassion that we sent to our loved ones.

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

Continuing to hold this person or persons in mind:

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

Now imagine these same feelings of love and compassion being directed towards you. Try to bask in this love and self-compassion and self-kindness as if you're absorbing the warm sunshine on a beach.

We will now generate these same feelings for ourselves. Begin sending the feelings of love, kindness, and compassion that you sent to others to yourself.

if you're only able to generate kindness and compassion for yourself for one moment, this can be a powerful practice.

As you send compassion to yourself, you may find it useful to silently say the following intentions or simply hear them and let them resonate with you.

May I be safe

May I be peaceful

May I be healthy

May I be free from suffering

Holding yourself in mind, we'll wish ourselves kindness and compassion again:

May I be safe

May I be peaceful

May I be healthy

May I be free from suffering

If your mind drifts away, or you are having thoughts that this practice is difficult, just notice that your mind has been thinking and gently guide it back to this practice.

Now that we have generated compassion for ourselves, we will send similar feelings outward again. Once again we will expand our circle outwards to the wider community and people not so clearly connected to us. We will extend compassion to the individuals that we interact with but do not know. Perhaps this is a neighbor that you don't know, a bus driver that you see each day, the man or woman who assists you at the grocery store, or a barista at a café. All the people that you are connected to in some distant way.

We will send these individuals the same warmth and compassion that we sent to ourselves, our loved ones, and others on the ward.

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

Again, sending well-wishes to these individuals who we encounter but do not know well:

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

For the next couple of minutes direct feelings of loving-kindness and compassion where you wish – to yourself, your loved ones, others in hospital, the wider community, or even to all individuals in the world.

As we conclude this meditation you may wish to praise yourself for making a sincere effort to complete this practice and for generating warmth, kindness, and compassion today. As you head back out into your daily routine, you may notice when loving-kindness pops into your head and increases your compassion and connectedness to others.

In a moment I will ring the chimes to end the exercise. Try to transition gently back into the room.  
(CHIMES)

Discussion:

- Any thoughts or comments?
- Share their experience?
- Mind wander?

Conclusion (end of intervention)

Most cultures throughout the world have promoted love, kindness, compassion, and service as a method of transcending the self and leading a healthy, happy, and meaningful life. That said, the act of sitting down and engaging in a focused practice is very unique in today's fast paced culture. You should congratulate yourself for having engaged in this intervention over a week.

In our exercises and practices, you have probably noticed how your mind has a mind of its own, how it has a tendency to wander, and how much of its activity is self-focused and self-absorbed. You've probably noticed that the mind tends to create separation between yourself and others. Unfortunately when you meet the world with suspicion or hostility, it tends to not embrace you. Are you willing to experiment with more compassionate attitudes? Can you think of ways in which you might shift your thoughts toward more loving-kindness? How might you bring more compassion, kindness, and acceptance to your mental life?

Imagine that you are back in your normal routine two weeks from now. Are there any opportunities to shift your thoughts and actions towards loving-kindness?

- Try to bring loving-kindness to your interactions with others.
- Try to bring loving-kindness to yourself.
- Be there for others going through a difficult time.
- Reconnect with someone you have lost touch with.
- Try to make interactions with those that assist you pleasant ones.

Compassion

A love like no other.

A way to connect,

Connect with another.

A way to bring light,

Where darkness has reign,  
And show a way out,  
Of suffering and pain  
A skill of the heart,  
That lets the heart glow.  
Keeping it open,  
Through the torment and woe.



### Appendix 3

#### **Pocket Script to Accompany Bracelet (printed on a laminated card for participants)**

What to do when the bracelet vibrates...

With an attitude of care and kindness for yourself, take a few conscious breaths, turning your attention to the physical sensation of the breath as it comes in and goes out of your body.

Now take a moment to wish yourself well with the following phrases.

May I be safe

May I be peaceful

May I be healthy

May I be free from suffering

Keeping in mind that others want to be free from suffering like you, you may also want to bring someone else to mind (family member/friend/acquaintance/or maybe everyone in general) so that you can also wish them well.

May you be safe

May you be peaceful

May you be healthy

May you be free from suffering

When you're ready gently shift your attention back to the world and others around you and see if you can continue to bring loving kindness and compassion to yourself and others.

## Appendix 4

### Satisfaction Survey

#### Satisfaction Survey

- 1. Overall, how satisfied are you with these activities? (including the meditations and bracelet)**

1	2	3	4	5	6	7	8	9	10
<b>Not Satisfied</b>			<b>Satisfied</b>				<b>Very Satisfied</b>		

- 2. Overall, how helpful have you found these activities? (including the meditations and bracelet)**

1	2	3	4	5	6	7	8	9	10
<b>Not Helpful</b>			<b>Helpful</b>				<b>Very Helpful</b>		

- 3. On average, during your time on the ward, how often did you use loving kindness meditation?**

- a. Not at all
- b. Once a day
- c. A few times a day (2 to 3)
- d. Many times a day (3+)

4. **When you did use loving kindness meditation, towards whom did you most often send your well wishes and compassion?**
  - a. **Myself**
  - b. **A loved one**
  - c. **Others on the ward**
  - d. **All of the above**
  
5. **What was your favourite part of the activity? What was most helpful?**
  
  
  
  
  
  
  
  
  
  
6. **What was your least favourite part of the activity? What was most least helpful?**
  
  
  
  
  
  
  
  
  
  
7. **Are you interested in applying, or putting into practice, this activity to your everyday life? (Yes/No)**
  
  
  
  
  
  
  
  
  
  
8. **Would you do this activity again if you were on the ward again? (Yes/No)**