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**Evaluation and treatment of low and anxious mood
in Chinese-speaking international students
studying in Scotland**

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Submitted in fulfilment of the requirements for the Degree of
Doctor of Philosophy

Institute of Health and Wellbeing
College of Medical, Veterinary and Life Sciences
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Abstract

Thesis overview and introduction

There is a rich body of research on the impact of common mental health difficulties such as depression and anxiety. These concepts, formalised by Western-developed diagnostic frameworks, may be less relevant in non-Westernised cultures. Although depression and anxiety may be presented, they can be presented in different ways in non-English speaking populations. Cultural adaptation of interventions has therefore been advocated to enhance engagement and recovery.

This thesis focuses on the mental health presentation and support of Chinese-speaking international students with low mood or anxiety. It aims to explore how they might present with symptoms of depression, how they would like to work/engage in treatment, modify and then test the feasibility of delivering an online life skills package aimed at such students as well as bringing together the evidence base around such interventions through a systematic review.

The structure of the thesis

The thesis is structured in the following ways and builds on the approach described in the MRC complex interventions evaluation approach (Craig et al., 2006):

- 1). Chapters 1-3: an overview of depression and anxiety disorders, and introduce the need for cultural adaptation in providing treatment.
- 2). Chapter 4: describes the rationale for the development of a Chinese language version of a popular UK-based life skills website.
- 3). Chapter 5: a systematic review of the literature where low-intensity cognitive behavioural therapy (CBT) approaches are offered to Chinese-speaking populations.
- 4). Chapter 6: the results of a focus group study carried out with the aim of culturally adapting the content of a widely used CBT-based online life skills course (Living Life to the Full) for a Chinese-speaking student population.
- 5). Chapter 7: describes the results of a pilot randomised controlled trial (RCT) completed to test key elements of recruitment, randomisation, delivering and supporting the online website, and finally gathering and evaluating outcome data. The aim is to clarify key elements of the evaluation in order to inform a future substantive RCT.
- 6). Chapter 8: the overview, discussion and recommendations for further research.

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Author's declaration

“I declare that the research presented in this thesis is my own work except where stated and it has not been submitted for any other degree”.

Mengyi Zheng

October 2017

Conflict of interest declaration

My supervisor Professor Chris Williams is developer of the *“Living Life to the Full”* resources. He is director and shareholder in Five Areas Limited - a company that commercialises the Chinese version of the course and other mental and physical wellbeing online, book and class based resources. The Chinese version of the course was used as an intervention in the research project without payment.

Abbreviations

GAD	Generalised anxiety disorder
PTSD	Post-traumatic stress disorder
CBT	Cognitive behavioural therapy
cCBT	Computerised cognitive behavioural therapy
CT	Cognitive theory
RCT	Randomised controlled trial
LLTF	Living Life to the Full
ITT	Intention-to-treat
LICBT	Low-intensity CBT
B-CBT	Brief-CBT
SHP	Self-help program
IA	Immediate access
DAC	Delayed access control
GIC	Glasgow International College
GU	University of Glasgow
WLC	Waiting-list control

Chapter 1: Depression and anxiety: their presentation and impact

1.1 Introduction

The purpose of this background introductory chapter is to describe and understand previous studies of depression and anxiety, especially focusing on the features, diagnosis and presentation of these mental disorders, and cultural factors on the understanding of depression and anxiety. This will focus on how affected individuals, particularly Chinese-speaking affected populations, present or report their experiences/symptoms of depression and/or anxiety. Additionally, treatments for depression and/or anxiety, and how they can be modified for Chinese-speaking populations will also be discussed.

The objectives of the first three chapters are therefore to:

- *Chapter 1:* Provides an overview of current understanding of depression and anxiety, including how people present their experiences and symptoms of depression and/or anxiety.
- *Chapter 2:* Introduces the importance of cultural factors on the presentation of depression and anxiety
- *Chapter 3:* Examines treatments for depression and anxiety, and how these treatments can be culturally modified for Chinese-speaking populations.

1.2 Overview of depression

1.2.1 Understanding and diagnosis of depression

Depression is described as a syndrome of symptoms that tend to cluster together. It can manifest as a combination of altered thinking (overwhelming loneliness, worthlessness and hopelessness), emotions (loss of pleasure, anhedonia, sadness, irritability and guilt), and physical changes (agitation, loss of energy or libido, increased sensitivity to pain symptoms, sleep pattern changes including insomnia and hypersomnia, and diurnal variation of mood), accompanied by an array of behavioural symptoms, such as reduced activity or avoidance of activities seen as too hard to cope with (Ekers et al., 2011), or falling into patterns of unhelpful activities, such as drinking or smoking to excess (Sharp and Lipsky, 2002). Such diagnostic approaches are formalised into classification systems such as the ICD-10 (WHO, 1992), the DSM-IV (APA, 1994) and the DSM-V (APA, 2013).

The Diagnostic and Statistical Manual of Mental Disorders, Fourth and/or Fifth Edition (DSM-IV/ DSM-V) will be adopted and discussed in the current review.

1.2.1.1 Diagnosis of depression

Psychiatrists use the Diagnostic and Statistical Manual of Mental Disorders (DSM) to diagnose disorders. The newest version, the DSM-V, dates back to May 2013. The DSM is written by the American Psychiatric Association (APA). The criteria for major depression, minor depression, and dysthymia are discussed according to definitions in the DSM-V. To be able to speak of a major depression or depressed episode, the following criteria that need to be fulfilled (APA, 2013):

During a period of two consecutive weeks, at least one of the following elements must be present: unhappy mood or loss of general interest or contentment. Feeling unhappy is typically indicated by feelings of sadness, hopelessness, emptiness or guilt. On top of this, at least 5 of the symptoms below must be present for at least two consecutive weeks.

- Showing a clearly unhappy mood for the larger part of the day. This must be shown from either subjective reports or through observation by others.
- A clear loss of interest or enjoyment in all or nearly all activities during the larger part of the day. This must be shown from either subjective reports or observation by others.
- A clear loss or gain of weight and a change in appetite without dieting.
- More or less sleep than normal, sleeplessness and a disrupted sleeping pattern.
- Psychomotor agitation or slowing nearly every day. This must be visible to others.
- Tiredness or loss of energy, nearly every day.
- Feelings of worthlessness or extreme unwarranted feelings of guilt, nearly every day.
- Lessened ability to think or focus or indecisiveness nearly every day. This must be subjectively reported or observed by others.
- Recurrent thoughts of death, recurrent suicidal ideation, or a suicide attempt or a specific plan to commit suicide.

Some patients with major depressive disorder experience recurring episodes, but many patients experience only a single episode. The symptoms present cannot be related to substance use or illness. If symptoms are related to a trauma or loss, they are considered as signs of grief, not major depressive disorder (APA, 2013).

The severity of depression can be evaluated with the help of the amount of symptoms present. The more symptoms are present, the more severe the depression is. The DSM-V has the following criteria for this (APA, 2013):

1. Symptom depression: One criteria is met.

2. Minor depression: Two to four criteria are met.
3. Major depression: Four to nine criteria are met.

Based on the DSM-V criteria, the severity of depression can be influenced by the amount of suffering, which is understood as subjective suffering. That is to say, if an individual indicates that he/she suffers severely, a major depression is indicated. If not, a minor depression is indicated.

Criteria for diagnosing depression in the DSM-V is in eight aspects: depressed mood, loss of pleasure and interest, sleep disturbance, decrease in energy or increased fatigue, loss of appetite, difficulty in concentrating or experiences of indecisiveness, retardation or psychomotor agitation, and even thoughts of self-harm or death (NHS, 2009). DSM criteria is widely used in much of the research in this area. The definition of severity in DSM-V makes it less likely that a diagnosis of depression can be based solely on symptom counting.

Many diagnostic interviews and rating scales detecting and measuring frequency and severity of mental disorders, such as depressive and anxiety disorders, have been developed on the basis of the DSM criteria, such as a widely used semi-structured diagnostic interview of the Schedules for Clinical Assessment in Neuropsychiatry (SCAN), a scale of the Hamilton Depression Scale (HAM-D) and a self-rating scale of the Beck Depression Inventory (BDI). Recently, these diagnostic instruments have been modified to cover DSM-IV (APA, 1994) and DSM-V (APA, 2013) symptoms of major or moderate to severe depression.

The Present State Examination (PSE) is a test developed by psychiatrist John Wing and colleagues in the 1960s. The test is a semi-structured interview designed to assess the individual's present mental state in order to identify any mental pathology. The PSE involves a standard checklist of items referring to health, worrying, tension, autonomic anxiety, depressed mood, concentration, self and others, appetite, sleep, retardation, libido, irritability, expansive mood and ideation, obsession, derealisation and depersonalisation, other perceptual disorders, hallucination, and delusions (Wing et al., 1974). The PSE has been widely used as a screening instrument in studies of psychiatric epidemiology, both national and international. It is a standardised method of eliciting, recording and classifying psychiatric symptoms that can be delivered as a computerised checklist. Previous studies of the PSE reliability have suggested high concordance amongst the

trained clinicians. Moreover, clinical psychologists and non-clinical interviewers have also been trained to use the PSE reliably (ICMR, 1982; Wing et al., 1982). The PSE has been used as a research instrument in several community projects and has been proved to be a practical survey instrument (Wing et al., 1982). It has undergone several revisions, the 10th edition being the latest one.

The Schedules for Clinical Assessment in Neuro-psychiatry (SCAN) is based on the PSE, incorporating the 10th edition of the PSE and retaining many of its features, such as rating scales with defined thresholds, a glossary of definitions, and a semi-structured approach (Wing et al., 1974). The SCAN is intended for use only by mental health professionals trained to diagnose a range of psychiatric disorders. It uses a diagnostic inventory approach to assess and classify the psychopathology and behaviour associated with major psychiatric syndromes in adults based on DSM-IV guidelines, and has been found to be generally reliable and acceptable across many settings and cultures (Brugha et al., 1982). The SCAN allows clinicians considerable flexibility for probing subject responses and requires clinical assessment when rating symptom severity based on the provided rating scales (Hesselbrock et al., 1982). The majority of SCAN items are rated on a standard three- or four-point scale, ranging from absent to mild to severe. Clinical judgements are made depending on the intensity, such as intrusiveness and extent of interference with mental functioning, and the frequency of the symptom (Hesselbrock et al., 1982).

The SCAN was designed to assess psychiatric disorders across many languages and cultures. This instrument has been translated into many languages and used in various ethnic groups. For example, a study of cross-cultural implementation of a Chinese version of the SCAN in Taiwan was conducted to assess the cross-cultural clinical equivalence and reliability of this instrument (Chinese version) (Cheng et al., 2001). In the study, Chinese and English transcripts of videotape interviews of Taiwanese patients were used by UK--US and Taiwanese groups of psychiatrists to discuss cross-cultural issues and ratings associated with SCAN items. Item ratings were assessed and compared quantitatively individually and pooled by SCAN section (Cheng et al., 2001). After ratings comparison and evaluation, Chinese equivalents were found for all SCAN items. Average agreement was 69-100% between the Chinese and English versions (Cheng et al., 2001). Moreover, the SCAN has been previously used in Singapore to assess life events, medical and other psychiatric co-morbidities associated with generalised anxiety disorder (Lim et al., 2005). The inter-rater reliability of the multilingual SCAN interviewers was good, with kappas of

0.63. The SCAN (version 2.1) (WHO, 1998) is covering the ICD-10 and DSM-IV diagnoses. It has been used for the clinical diagnosis of moderate to severe depression (on the basis of ICD-10) or major depression (on the basis of DSM-IV). The reliability of the SCAN is good (WHO, 1998).

The application of those structured and/or semi-structured diagnostic interviews can help to improve the quality and reliability of the process of making a psychiatric diagnosis in clinical practice and consequently can potentially improve allocation to effective treatment. Despite the possible benefits of those instruments, their application in practical patient care is, however, the exception rather than the rule. This may be due to their design, length and relatively extensive training requirements (Sheehan et al., 1998). For example, the SCAN interview has elaborate definitions of symptoms, detailed questions per symptom and a wide coverage of symptoms.

To conduct cost-effective screening of mental disorders feasible, several brief questionnaires assessing a limited set of symptoms, such as depressive and anxious symptoms, have been developed. The Hospital Anxiety and Depression Scale (HADS) is developed by Zigmond and Snaith in 1983 to identify caseness (possible and probable) of depression and anxiety disorders among patients often in non-psychiatric hospital clinics. The HADS is divided into a Depression subscale (HADS-D) and an Anxiety subscale (HADS-A) both containing seven intermingled items. In the Depression subscale (HADS-D), "depression" level is assessed according to the questions: "Do you take as much interest in things as you used to? Do you laugh as readily? Do you feel cheerful? Do you feel optimistic about the future?" (Zigmond and Snaith, 1983). Of the seven depression items five relate to the aspect of reduction in pleasure response. Validation studies of the English and other language translations of the HADS are undertaken in a variety of centres and settings. A literature review of 747 identified studies using HADS has concluded: "The HADS is found to perform well in assessing severity and caseness of depression and anxiety disorders in both somatic, and psychiatric cases and in primary care patients and the general population" (Bjelland et al., 2002).

Mental and physical health literatures of depression have reviewed the depression screening measures used in primary care settings. Numerous rating scales have been specifically designed to encourage primary care physicians to routinely screen their patients for depression (Sharp and Lipsky, 2002). The commonly used screening measures for adults in US ambulatory medical settings include the Beck Depression Inventory Scales

(BDI-II [which replaced BD-I], and BDI-PC). The BDI-II is the current version of the original BDI with 21 items that was modified to assess the existence and severity of symptoms of depression as listed in the DSM-IV, which changed many of the diagnostic criteria for the Major Depressive Disorder (Beck, Steer and Brown, 1996). There were four new symptoms, such as agitation, concentration difficulty, worthlessness, and loss of energy, added in the BDI-II. Weight loss, body image change, work difficulty, and somatic preoccupation symptoms from the BDI-IA were dropped (Beck, Steer and Brown, 1996). However, the BDI-II continues to include several items referring to somatic symptoms of depression (for example, questions about fatigue, loss of energy and loss of appetite), which may lead to an overestimation of positive cases in a patient group with somatic illness. The BDI-PC is a seven-item version of the BDI-II. Items are symptoms of sadness, pessimism, past failure, loss of pleasure, self-dislike, self-criticalness, and suicidal thoughts and wishes. When completing the questionnaire, individuals are asked to recognise and describe their symptoms for the “past two weeks including today.” (Beck et al., 1997). Both BDI-II and BDI-PC focus on symptoms within “the past two weeks, including today.” The BDI-PC may be advantageous to use because it is faster and easier to administer and score; however, its specificity and sensitivity seem to be slightly lower than the BDI-II (Sharp and Lipsky, 2002). These rating scales allow rate depression symptoms over time and can record the presence of change in symptoms as a result of treatment. In the current research project, the Patient Health Questionnaire-9 (Spitzer et al., 1999), - an open access mood rating questionnaire consisting of nine questions mirroring DSM-IV depression diagnostic criteria, is used to diagnose symptoms of low mood and depression. The PHQ-9 is brief and simple to complete, and has good detection properties for depression alone and in combination with medical problems. It has been recommended as an integral part of the management of depression in primary care, including tracking symptom change and defining successful treatment outcome to inform treatment decisions (Clark et al., 2009; Dejesus et al., 2007). Its properties are described later in this thesis.

1.2.2 How common is depression?

Depression is common and present in children, adolescents, adults, and the elderly (NICE, 2009). It has been estimated that there may be over 450 million people in the world today struggling with different types of mental health problems. Among these mental health problems, depression seems to be a major category of mental health distress affecting people of every age, background and ethnicity (NICE, 2009). Depression is said to be the

second most costly cause of morbidity (NICE, 2011). The challenge of depression is seen worldwide. The World Health Organization (WHO) has suggested that nearly 10% of patients suffering from different types of mental health problems had a diagnosis of chronic or persistent depression as a sole or co-morbidity (Kessler et al., 2003); and at least 50% of patients mentioned above as struggling with chronic, persistent or major depression may experience more than one depressed episodes (Kessler et al., 2003). According to the results of a household survey in England, one in four people in the UK will experience a mental health problem in any given year (McManus et al., 2009). Low mood, anxiety and depression are the most common mental disorders identified in the UK. Furthermore, it was shown that, in England, women are more likely than men to have a common mental health problem and are almost twice as likely to be diagnosed with anxiety disorders (McManus et al., 2009). It was believed that approximately 10% of children and young people (aged 5-16 years) have a clinically diagnosable mental problem yet 70% of children and adolescents who experience mental health problems have not had appropriate interventions at a sufficiently early age (Green et al., 2005). Prevalence of depression among the elderly was also analysed in the household survey, with nearly 1 in 5 elderly people living in the community experiencing depression, while 2 in 5 living in care homes struggling with the same disorder (McManus et al., 2009). In Scotland, it was found that in 2012-2013 nearly one in ten (9%) adults had two or more symptoms of depression or anxiety (Bromley et al., 2014). These surveys have provided lifetime prevalence estimates of people's depressive experiences across childhood, adolescence, adulthood, and old age, further supporting the understanding of depression as a major category of mental health distress affecting people of every age, background and ethnicity.

According to the data from the National Health and Nutrition Examination Survey in the US, 7.6% of Americans aged 12 and over had depression (moderate or severe symptoms of depression in the past 2 weeks) during 2009–2012 (Pratt and Brody, 2014). In this survey, the rate of depression increased by age, from 5.7% among young people aged 12–17 to 9.8% among adults aged 40–59, but adults aged 60 and over had a significantly lower rate of depression (5.4%) than those aged 18–39 and 40–59. Among these people with symptoms of depression, it is believed that almost 43% of people with severe depressive symptoms reported serious difficulties in home, work and social activities. Of those with severe symptoms of depression, 35% reported having contact with mental health professionals in the past year (Pratt and Brody, 2014).

Moreover, based on the statistical report of primary care physicians, depression is the second most common chronic disorder (NICE, 2010). It is suggested that at any given time, 9% of the population had a depressive disorder, and 3.4% had major depression. In a 12-month time period, approximately 6.6% of the U.S. population experienced major depression, while 16.6% of the same population suffered from depression throughout their lifetimes (Mitchell et al., 2013).

According to those previously discussed reports, depression is a common mental health problem, which can occur at any time and be experienced at different levels of severity across human lifespan. Depressive experience can be seen as a common emotional or mental state such as fear or anger, which influences people's daily life. Depression can occur in a single episode, but is often recurrent, or can become chronic (Wiles et al, 2013); it is described as the most common chronic disorder in primary care settings (Mitchell et al., 2013).

However, these statistical data are summarised and reported on the basis of Western settings and definitions, and have been criticised for overly reflecting a Westernised view of mental health problems, focusing on Western background, culture, theories, and patient presentations. Depressive experiences explained in terms of other ethnic cultures or presented by patients from different ethnic cultural backgrounds, like Chinese-speaking population's understanding of symptoms of depression, are less discussed, researched and published than presentations in Western settings. These issues in the presentation of anxiety and depression in non-English speaking populations are addressed in Chapter 2.

1.2.3 What is depression?

If people are feeling depressed, their experience and outlook seem to be generally negative. Individuals with depression often describe and present their symptoms in three distinct domains: physical, psychological and social features (Gilbert, 2009, p. 57-69).

Physical features of depression:

1. disturbed sleep—waking up in the night, or earlier than usual, or sleeping too much
2. loss of appetite or overeating
3. tiredness or persistent loss of energy
4. aches and pains not fully explained by medical problems

Psychological features of depression:

1. feeling sad or unhappy or having a "low" mood
2. feeling unable to enjoy things like you used to
3. loss of confidence and/or loss of self-esteem
4. feeling particularly guilty or self-blaming
5. feeling that things won't get better in the future
6. thoughts of self-harm or even suicide

Social features of depression:

1. poor concentration or memory
2. not wanting to see people or do things
3. irritability or more frequent arguments with people around you
4. difficulties in managing work, family responsibilities or other usual activities

Individuals with depression often present their negative thoughts, feelings and disturbed relationships with other people (Gilbert, 2009). Depressed people may perseverate on thoughts like "I'm not good enough", "no one likes me", "I'll never make the things well", "life seems to be hopeless" or "I often make people around me angry". Worries, great guilt or shame are presented frequently when individuals experience depression (Zajacka and Goldstein, 2009). Moreover, negative emotions or feelings are mentioned regularly. Negative emotions or feelings of sadness, grief, anger, fear, or shame, sometimes with fearfulness and tension, can be expressed. Certain words and phrases like "low", "down" and "on the edge" are often reported (Zajacka and Goldstein, 2009). Additionally, regarding the interpersonal relationships between depressed people and others, difficulties in communicating and sharing emotions are mentioned. Some people who are depressed also state that they seem to be unable to receive comfort from others, believe they do not deserve it or that it is insincere. Their low mood, lethargy, irritability or anhedonia can make giving or sharing love or care impossible (Zajacka and Goldstein, 2009). Based on the suggestion of Zajacka and Goldstein (2009), people with depression sometimes mention that the symptoms of depression seem to have passive-aggressive elements which may disrupt their interpersonal relationships. In addition to the responses mentioned previously, individuals often report that they are uninterested in normally pleasant social activities, and may be unable to work due to lethargy or fearfulness (Zajacka and Goldstein, 2009).

1.3 Overview of anxiety

1.3.1 Diagnosis of anxiety disorder

As with depression, anxiety is a common mental health problem. Anxiety disorders are known as a group of related conditions, rather than a single disorder. In Ma et al.'s (2009) study, 80.4% of the subjects suffering from lifetime GAD met criteria for other psychiatric disorders, a figure in line with previous findings of 67.8%-93% (Hunt et al., 2002; Lim et al., 2005; Ma et al., 2009). Ma et al. (2009) also indicated that GAD has a strong association with the major depressive disorder, followed by other anxiety disorders and substance abuse (Ma et al., 2009). Anxiety disorders can be categorised into five common types: generalised anxiety disorder, panic disorder, phobias, obsessive-compulsive disorder and post-traumatic stress disorder (PTSD) (NICE, 2004a). Despite the different forms and types, all anxiety disorders may have one similar and major symptom: persistent or severe fear or worry in situations where most people cannot feel threatened (NICE, 2004a). In our research project, generalised anxiety disorder (GAD) will be mainly discussed and analysed.

One simple two-question screening tool used to help detect anxiety is the GAD-2 (Kroenke et al., 2003). Two questions ask "how often have you been bothered by feeling nervous, anxious or on edge?" and "how often have you been bothered by not being able to stop or control worrying?" over the past two weeks (Kroenke et al., 2003). The GAD-2 score can range from 0 to 6. People with the score of three or more are considered to potentially have an anxiety disorder. However, it is suggested that people coping with anxiety through avoidance behaviour may score quite low on the GAD-2 (Kroenke et al., 2003). If the assessor suspects an anxiety problem but the individual scores less than three, another detecting question "Do you find yourself avoiding places/activities and does this cause you problems" can be asked, and those with positive responses should be screened and assessed further (Kroenke et al., 2003). When scoring positively as a possible anxiety case on the GAD-2, a longer questionnaire, such as the GAD-7, can be useful to assess the presence and severity of someone's anxiety in clinical practice.

The Generalized Anxiety Disorder-7 (GAD-7) is developed in the USA as a valuable screening tool for detecting and assessing GAD (Spitzer et al., 2006). A score of eight or more indicates an anxiety disorder. The GAD-2 is a short version of the tool which is

composed of the first two questions of the GAD-7 (Kroenke et al., 2007). Based on previous studies, both the GAD-2 and GAD-7 have been widely used by general practitioners, and are validated in primary care patients (Kroenke et al., 2007).

1.3.2 How common is anxiety?

According to findings from the Mental Health Foundation (MHF, 2007), it was reported that the estimated proportion of people in England with generalised anxiety disorder (GAD) is 4.4% in the most recent Adult Psychiatric Morbidity in England survey. Around 6 million adults in England and Wales experience anxiety and depression during their lifetimes (MHF, 2007). The data from the National Institute of Mental Health survey has reported that anxiety disorders are the most common mental disorders in the U.S., affecting 40 million adults in the United States aged 18 and above, or 18% of the population (Kessler et al., 2005). Moreover, according to a study relating to mental health problems in Canada and Australia, authors suggested that during the 12 months between 2001 and 2002, almost 4.6% of Canadians have symptoms meeting the DSM-IV diagnostic criteria for an anxiety disorder; and, during the course of their lifetimes, around 28.8% of Australians are estimated to experience anxiety (Tempier et al., 2009). Additionally, worldwide estimates of the proportion of people who are likely to be affected by generalised anxiety disorder during their lifetimes vary from 0.8% to 6.4% (Kessler and Wang, 2008).

However, epidemiological data for generalised anxiety disorder (GAD) are few in China (Ma et al., 2009). The only epidemiological survey carried out in the urban regions of Beijing and Shanghai concerned 12-month prevalence, severity, and the unmet need for treatment of mental disorders in metropolitan China (Shen et al., 2006). In Shen et al.'s (2006) survey, the WHO Composite International Diagnostic Interview (CIDI 3.0) (Kessler and Ustun, 2004), which is a fully structured diagnostic interview, was used to assess disorders and treatments. Disorders discussed in this survey involved DSM-IV anxiety, mood, impulse-control, and substance use disorders (Shen et al., 2006). Adults aged 18 to 70 years old, registered in a non-agricultural family household, and residing within the urban districts of Beijing and Shanghai, were the target population in Shen et al.'s (2006) research. After data analysis, it is suggested that the 12-month prevalence of any DSM-IV mental disorder in metropolitan China (Beijing and Shanghai) was estimated to be 7.0%, with 2.7% generalised anxiety disorder, 2.0% major depressive disorder, and 1.9% specific phobia (Shen et al., 2006). Based on these findings, although the general pattern of

disorders, risk factors, and unmet needs for treatments were similar to those in other countries, a low prevalence rate of mental disorders was found in metropolitan China (Shen et al., 2006).

Shen et al.'s research seems to concern general mental disorders like major depression, mood disorder and generalised anxiety disorder, rarely focusing on their specific symptoms and effective treatments (Ma et al., 2009). Additionally, Shen et al.'s survey investigates a metropolitan sample, even though about 75% of China is still a rural population. Consequently, while the survey can provide a foundation on which to build large national data, the findings of Shen et al.'s survey should not be generalised indiscriminately (Ma et al., 2009). The survey also suggests that epidemiological studies are urgently needed in vast areas of rural China where the rate of suicide is high and health insurance is widely almost nonexistent (Shen et al., 2006). Under these influences, in-depth studies of the prevalence of generalised anxiety disorder in both urban and rural regions of China using standardised assessment tools, trained interviewers, and controlled procedures are required in the future (Ma et al., 2009).

A study, known as a part of the large-scale epidemiological survey of the prevalence of psychiatric disorders in China, was carried out to examine the 12-month and lifetime prevalence of generalised anxiety disorder (GAD) and its sociodemographic correlates in the population aged 15 years or older and living in both rural and urban areas of Beijing, China (Ma et al., 2009). A total of 5926 subjects from neighbourhood or village communities in rural and urban regions were selected and interviewed. Interviews were conducted at participants' homes by 102 qualified psychiatrists with extensive experience in controlling interviews, using interview techniques, and assessing interview responses. Based on statistical results, the overall lifetime prevalence rate of GAD was 1.2%, with 0.7% and 1.7% for males and females respectively. The corresponding data for 12-month prevalence rates of GAD were 0.8%, 0.5% and 1.2% respectively (Ma et al., 2009).

Ma et al.'s study is the first epidemiological survey of GAD using standardised assessment in a large, random sample involving both urban and rural regions in China. According to Shen et al.'s (2006) study, the 12-month prevalence rate of DSM-IV GAD is 0.8% in the 18 to 70 years old age group in urban regions of Shanghai and Beijing, China. The data is similar to Ma et al.'s finding (0.82%). However, compared to the worldwide range of lifetime (0.8%-6.4%) and 12-month (0.5%-3.7%) GAD prevalence rates (Grant et al., 2005), the corresponding figures found in Ma et al.'s study (1.2% and 0.8%, respectively)

are still very low. The discrepancy between the findings of Chinese-based studies and earlier worldwide-based reports may possibly be due to differences in the criteria for GAD, possible different sampling or assessment methods, and the possible impact of cultural stigmatisation or discrimination (Ma et al., 2009). Ma et al. (2009) also stated that Chinese people are less willing to present mental and psychological symptoms in face-to-face interviews, which has been supported by previously reviewed studies relating to mental health problems in an ethnocultural context (Choi, 2002; Liu, 2009), and will be explained in detail in Chapter 2.

According to previous studies, generalised anxiety disorder (GAD) is a common and persistent psychiatric illness characterised by excessive tension, worrying, anxiety and somatic symptoms (Ma et al., 2009). Individuals may feel tense, uncertain and possibly fearful at the thought of things such as preparing for an interview, taking an exam, going into hospital or starting a new job (Gelder et al., 2006). Individuals may be worried about feeling uncomfortable, appearing foolish or how successful they will be. Frequent worrying and anxiety can affect people's quality of life (NCCMH, 2011). When anxiety becomes a regular part of the person's life, then it may be regarded as an anxiety disorder (NCCMH, 2011).

1.3.3 What is generalised anxiety disorder (GAD)?

Generalised anxiety disorder (GAD) is characterised by persistent excessive worry that individuals find difficult to control (NCCMH, 2011). Based on the guidelines of the National Institute of Mental Health (Clark, 2011), generalised anxiety disorder can be defined and diagnosed when an individual worries excessively about everyday occurrences or problems for a period of at least six months. According to the textbook of psychiatry (Cowen, Harrison and Burns, 2012), psychological and physical symptoms of GAD have been summarised, discussed and mentioned as follows:

1.3.3.1 Psychological symptoms of generalised anxiety disorder

In addition to the general and basic symptoms of irrational and excessive worry and fear, generalised anxiety disorder can result in certain changes in individuals' behaviour, and ways of thinking or feeling. Other common psychological/emotional symptoms of anxiety are: (1) feeling tired regularly; (2) being worried about something or everything all the

time; (3) feeling difficult to pay attention or concentrate on the things or other people; (4) and experiencing low, down and weepy (Cowen, Harrison and Burns, 2012, p. 117).

These psychological symptoms can lead people to withdraw from social activities and contacts, such as interacting with friends, participating in public activities, and even seeing their families (Tyrer and Baldwin, 2006). Individuals with anxiety find it is difficult and stressful to continue with their regular work, and sometimes may take time off sick. Such psychological symptoms and negative experiences can, in turn, make individuals more worried about themselves (Tyrer and Baldwin, 2006).

1.3.3.2 Physical symptoms of generalised anxiety disorder

Anxiety seems to be more than feelings and emotions. As a product of the body's response, a wide range of physical symptoms can contribute to understand people's experience of anxiety. These are (1) rapid breathing; (2) rapid heart rate and rising blood pressure; (3) being restless and "on edge"; (4) sleep disturbance and loss of appetite; (5) tense muscles which may cause headaches and pain; (6) and nausea, sickness or urgent need to use the toilet (Cowen, Harrison and Burns, 2012, p. 117).

The experience of psychological symptoms of anxiety seems to focus on what individuals feel when they are anxious, and what they actually think and say when feeling anxious. For instance, some thoughts and feelings, such as "being frightened or panicky", "feeling unable to cope with anxiety", "thinking they are losing their mind", and "worrying about being faint or sick", are frequently presented when people feeling anxious (Cowen, Harrison and Burns, 2012). The following is one example of the physical symptoms of anxiety to describe people's bodily responses to anxiety. Imagine a person is crossing a busy road, when suddenly he/she hears a very loud car horn go off a few feet away from him/her and a screech of brakes. This person would most likely immediately jump and run away, even before he/she has time to think about what is happening. Having moved out of the way of the car, this person would then be left feeling a bit shaky, with his/her heart thumping, as well as some of the other physical symptoms outlined in the previous list, like rapid breathing, sweating, dry mouth and chest pain (Cowen, Harrison and Burns, 2012).

Moreover, a number of behavioural symptoms can be experienced when people feel anxious. What people do depends on the situations they find particularly stressful.

Individuals experiencing anxiety may make some excuses to avoid going out or doing social activities. They prefer to go to quiet places or be in very small groups, keep silent when with others, and escape from circumstances which can lead them to experience anxiety (Tyrer and Baldwin, 2006; Bitran et al., 2009). On the other hand, some anxiety affected individuals seem to be overly active and talk all the time to avoid feeling uncomfortable or release their negative emotions (Tyrer and Baldwin, 2006).

According to a research on anxiety disorders produced by the National Institute for Health and Clinical Excellence (NICE, 2011b), the key features of generalised anxiety disorder (GAD) are worry and apprehension that seem to be out of proportion to the circumstances. Such worries can be widespread, including everyday issues and having a shifting focus of concern. The affected individuals present that these worries seem to be difficult to control, which can result in decreased academic, occupational and social functioning (Tyrer and Baldwin, 2006; Bitran et al., 2009). As well as worry that seems to be generalised, individuals with generalised anxiety disorder mainly report their negative thoughts, emotions and feelings, in similar ways of presenting their depressed experiences.

1.4 Chapter summary

As discussed in this chapter, an overview of the current understanding of depression and anxiety, including how people present their experiences and symptoms of depression and/or anxiety, has been provided. Depression and anxiety can be often diagnosed using diagnostic interviews and classification such as the DSM-IV (APA, 1994) and the DSM-V (APA, 2013). More commonly however, researchers have identified depression and anxiety using screening or rating instruments that aim to detect and rate core depression and anxiety symptoms. If people are feeling depressed and/or anxiety, their experience and outlook seem to be generally negative. Individuals with depression and/or anxiety often describe and present their negative thoughts and emotional feelings, accompanied by an array of physical or behavioural symptoms.

Chapter 2: Cultural factors on the presentation of depression and anxiety

2.1 Introduction

In this chapter, the importance of cultural factors on the presentation of depression and anxiety will be introduced and explained. The impact of culture on the presentation and management of depression and anxiety among the Chinese-speaking population, especially the Chinese-speaking international students, will be also explored.

2.2 Cultural factors on the presentation of depression and anxiety

2.2.1 The experience of depression and anxiety

According to previous studies, it is suggested that depression and anxiety have negative effects on many aspects of the individual's life. For example, a study conducted by Gilbert (1997) suggested that depression and/or anxiety can affect an individual's motivation, emotions, thoughts, imagery, behaviours, physiology, social relationships, and brain states (Gilbert, 1997). Gilbert (1997) also examined changes in individual behaviour following the onset of symptoms of depression. For instance, people may prefer to withdraw socially and hide away (Gilbert, 1997). Many of the things people may have enjoyed doing, which took little effort before becoming depressed, can become seen as an ordeal (Gilbert, 1997). Furthermore, Gilbert (1997) found that an individual's behaviour towards other people can change as well. Those with depression tend to do fewer positive things with others and can thus be more likely to find themselves in conflict. They may become anxious, start to avoid interaction, or lose their social confidence when exposed to interpersonal environments (Gilbert, 1997). This can lead them to reduce or stop activities. A formal therapy for depression and anxiety, behavioural activation, was developed on the basis of individuals' behaviour changes. It focuses on the use of avoided activities as a guide for activity scheduling and functional analysis of cognitive processes that involve avoidance (Veale, 2007). According to Veale's (2007) study, the key issue in the formulation of behavioural activation is determining the nature of the escape and avoidance, and using this to guide

the planning of alternative positive behaviours. In Jacobson et al.'s (1996) study comparing the full version of CBT with a behavioural activation, it is suggested that CBT and behavioural activation are equally effective, and behavioural activation seems preferable as it can be delivered and employed in simpler ways, and delivered by practitioners with less training.

Moreover, Gilbert's research indicated that other important changes in life experience occur as a result of depression and/or anxiety; as well as behavioural changes, altered thinking (cognition) also occurs, including changes of mental imagery/imaginative thinking. When experiencing depression, the imagery that individuals use to describe things seems to be of darkness, being stuck somewhere, powerlessness and being unable to get out. Other morbid themes may include death, abandonment, and leaving others behind to struggle. In general, darkness and entrapment can be regarded as the key internal images of depression (Gilbert, 1997).

These key areas of changes discussed above are all represented in the cognitive behavioural model (CBT model) described by Professor/Dr. Aaron T. Beck (Beck et al., 1979). The CBT approach will be described in more detail in Chapter 3 and Chapter 4 (in which the treatment model being used).

2.2.2 The impact of culture on the presentation and management of depression and anxiety

The understanding of depression and anxiety could be based on specific cultural backgrounds or groups. The debate on the impact and role of culture on psychiatric epidemiology has evolved considerably in the past two decades. For example, a study of the understanding of adolescent depression in an ethnocultural context was conducted to explore the diagnostic biases resulting in misdiagnosis of adolescent depression, and review ethnocultural variations in reporting depression among African-American, Hispanic American, and Asian-American adolescents (Choi, 2002). In this study, the fourth edition of the DSM was used to assess adolescent depression. In addition to explain what people experienced and expressed about depression based on the DSM-IV, Choi (2002) also focused on key points including whether all depressed adolescents presented these DSM-IV-based symptoms regardless of their ethnocultural backgrounds; and whether

these DSM-IV diagnostic criteria can be applied universally to all ethnocultural groups of adolescents (Choi, 2002). After reviewing previous limited cross-cultural epidemiological data, Choi (2002) concluded that prevalence of depression among adolescents is lowest for Chinese Americans (2.9%) and highest for Mexican Americans (12.0%) (Choi, 2002). Choi (2002) also suggested that Asian-American adolescents consistently report lower rates of depression than other ethnic groups (Choi, 2002; Siegel et al., 2001). According to those statistical data and previous literature reviews, it is believed that an individual's observable behaviour, expression of emotion, and manifestation of mental illness are shaped by environment and/or culture (Choi, 2002).

Referring to ethnocultural variations in adolescent depression, two ways in which culture and ethnicity can influence the epidemiology of adolescent depression and the diagnostic process have been suggested in Choi's article. Specifically, Choi (2002) found that culture and ethnicity can affect both personality variables and surrounding social conditions, which seem to be important determinants of the prevalence of adolescent depression. Examples such as feelings of anxiety and isolation among Asian Americans, self-hatred among African Americans, and fatalism among Hispanic Americans have been taken to indicate culture-related personality traits in the prevalence of adolescent depression (Choi, 2002). Choi (2002) also suggested that practitioners' misunderstanding and misinterpretation of cultural variations in patients' depressive experiences can be another reason for epidemiological differences and biased diagnoses (Choi, 2002).

According to Choi's critical review of ethnocultural variations in experience of depression, it is suggested that cultural competence plays an important role on understanding of adolescents' depressive experiences, which could guide practitioners and psychotherapists to enhance cultural competence in mental health care (Choi et al., 2006).

As a continuation of the discussion of ethnocultural variations in adolescent depression, a cross-sectional, school-based study was conducted to examine ethnocultural variations in depression and somatic symptoms in White, African American, Hispanic American and Asian American adolescents (Choi and Park, 2006). Choi and Park's (2006) study focused on ethnocultural variations in the distribution of symptom scores and symptom expressions. Ethnocultural variations in the relationship between depression and somatic symptoms were also explored. The sample for this study consisted of voluntary adolescent participants who self-identified as White, African American, Hispanic American and Asian

American. The self-identification of ethnocultural group membership has been used in previous studies which investigated ethnocultural group differences in psychosocial variables among adolescents (Meininger et al., 1998). The DSM Scale for Depression (DSD) was used to evaluate participants' depressive symptoms. This 22-item DSD used a timeframe of the preceding 2 weeks. An 11-item Somatic Symptom Scale based on a Chinese translation of the General Health Questionnaire was also adopted. This scale consisted of the most common and frequent signs and symptoms reported by depressed adolescents, such as headache, stomach pain, dizziness or loss of energy (Cheng and Williams, 1986).

In Choi and Park's (2006) study, various statistical methods, such as descriptive statistics and multiple regression analysis, were applied to answer the research questions. According to the statistical results, in comparison with other ethnocultural groups, Asian American adolescents are more likely to experience sadness and low mood, while less likely to report poor body image (Choi and Park, 2006). Referring to the relationship between depression and somatic symptoms, it is suggested that somatic symptoms are strongly associated with depression in all ethnocultural groups (Choi and Park, 2006).

Overall, Choi and Park's school-based study seems to empirically strengthen the previous argument that ethnocultural variations can determine different ways of experiencing and expressing symptoms of depression among adolescents from different ethnocultural groups. This study has identified unique patterns of score distribution and symptom expression in each group, and thus supported the importance of ethnocultural variations in the prevalence of adolescent depression. These findings have implications for further research and practice. For example, ethnocultural context should be taken into consideration when evaluating the patients' depressive experiences and symptoms. The understanding of ethnocultural variations in the prevalence of depression seems to be necessary to ensure effective and timely management of mental health problems (Choi and Park, 2006).

These previously discussed studies investigating the role and influence of culture on the epidemiology of depression have indicated that culture influences the symptoms of distress, the individuals' explanatory models, their coping mechanisms and help-seeking behaviours; as well as the social response to distress. In this part of the chapter, two major approaches for the study of culture's relationship to mental disorder will be outlined, concluding with some possibilities for their reconciliation.

2.2.2.1 The “*etic*” vs. “*emic*” approach

The debate relating to the extent and nature of the influence of cultural variables on psychiatric syndromes and mental health services has been concerned extensively. Particularly, in this debate, the theoretical rationales of the “*etic*” and “*emic*” approaches which emphasised either biological universality or cultural diversity respectively have been focused (Kleinman, 1987; Littlewood, 1990; Patel and Winston, 1994). According to the “*etic*” approach, it is believed that mental illnesses as conceptualised by a dominantly biomedically based psychiatry can be valid automatically in the rest of the world. That is to say, the “*etic*” approach to cultural psychopathology focuses on the cross-cultural equivalency of underlying processes and diagnostic concepts (Ryder, Yang and Heini, 2002). Typically, these processes and concepts are associated with categories used in Western Europe and North America. This approach is the basis for most epidemiological studies around the world. For example, Major Depressive Disorder is assumed to exist worldwide as defined by established diagnostic criteria, such as those found in the Diagnostic and Statistical Manual of Mental Disorders (DSM; APA, 1994). In practice, the therapist with an “*etic*” perspective suggests that mental disorders such as depression and anxiety and the behaviours coming along with them occur the same way in every society. It is believed that what is considered normal and abnormal in Western cultures is the same in every cultures.

In contrast to the “*etic*” approach, the “*emic*” approach focuses on a fundamental cultural role in psychopathology. Researchers who take an “*emic*” perspective tend to emphasise the impact and role of culture in ways of experiencing and expressing distress, shaping classification systems, risk and protection factors influencing vulnerability to psychological problems, and beliefs among therapists, patients, and community members about the sources, causes and consequences of these problems (Marsella and Dash-Scheur, 1988). Many of these researchers have questioned whether diagnostic systems and structured interviews developed based on the Western cultures can ever provide a universal framework (Draguns, 1996). According to these researchers, it is far from certain that the same syndromes in other cultures exist in the same form. For example, neurasthenia, “Shenjing shuairuo” or “neurological weakness” was the preferred diagnosis over the psychological diagnosis of major depression in Chinese culture in the past two decades

(Parker et al., 2001). The knowledge of these cultural idioms can promote the diagnosis of depression, and minimise the risk of misdiagnosis.

There is a general consensus that both approaches have their limitations and strengths. In order to make psychiatric research "culturally and biologically correct", it is necessary to integrate methods and concepts. That is to say, there is a need to integrate the Universalist and Culturally relativist approaches, and their methodologies, to generate true international psychiatric epidemiology. The next section of this chapter will consider some of the key questions posed and answered by cross-cultural psychiatric research on depression and/or anxiety.

2.2.3 Culture and diagnosis of mental disorders

For an investigation of the recognition and diagnosis of depression and anxiety in patients from an Eastern or Asian cultural background, the understanding of depression and anxiety in Chinese culture was chosen, because China accounts for 25% of the world's population, is almost the largest Asian group in Western countries, and Chinese culture seems to be the most widely-practiced in Asia (Chen and Davenport, 2005).

One of the first systematic report of cross-cultural differences in psychiatric epidemiology was the apparent rarity of depression in Chinese culture (Kleinman, 1982). Both Chinese and Western researchers found this tendency as early as the 1970s, and began to investigate it using large-scale epidemiological methods in the early 1980s. For instance, an early psychiatric survey of mental health problems was carried out across 12 regions of China in 1982 and repeated with almost identical case ascertainment strategies across 7 regions in 1993. In the 1993 survey, psychologists and psychiatrists surveyed people aged 15 years and above in rural and urban households. A variety of psychological questionnaires, such as the Chinese manual of mental disorders and the Chinese version of ICD categories, and clinical interviews were used in this survey. Of the 19,223 participants surveyed in 1993, however, only 16 fulfilled the criteria for lifetime mental disorder. The lifetime prevalence of mental disorder was 0.08%, and the point prevalence was 0.05%. These prevalence rates seem to be higher than those found in the 1982 survey (Zhang, Shen and Li, 1998). Nevertheless, the 1993 data suggested the community rate of depression in China was several hundreds of times lower than data from the United States.

Moreover, some national community surveys conducted in Taiwan suggested similar low rates. The highest rate of lifetime depression in Taiwanese found by Hwu, Yeh, and Chang (1989) was 1.7%, with a similar rate of 1.5% identified by Weissman and her colleagues (1996). These Taiwanese lifetime depression rates can be contrasted with the rate of 5.2% found in the United States (Robins et al., 1984), and rates as high as 19.0% reported in surveys of other countries (Weissman et al., 1996).

Several studies have suggested that diagnosis of depression in clinical settings is less common in China than in Western countries (Parker et al., 2001). For example, the Chinese World Mental Health (WMH) survey was conducted in Shanghai and Beijing to examine Chinese epidemiology of mental disorders in a cross-national context (Shen et al., 2006). In the survey, the Composite International Diagnostic Interview (CIDI 3.0), known as a fully structured diagnostic interview, translated into Chinese, was used to assess mental disorders and their treatment. Moreover, three academic psychiatrists with epidemiological expertise and a survey methodologist from the Research Centre for Contemporary China (RCCC) in Beijing were involved in evaluating the content validity of the CIDI, testing it with Chinese patients, and revising it to ensure that the Chinese version could be easily understood and used by Chinese individuals (Shen et al., 2006). In Shen's (2006) study, individuals registered in non-agricultural households and residing within the urban districts of Beijing and Shanghai were regarded as the target population. Data were reported on prevalence, severity, association of severity with treatment, and socio-demographic predictors of prevalence, severity, disorder types and treatment. Data relating to each key point was analysed using different analytical methods, such as using simple cross-tabulations to calculate prevalence and severity, and examining associations of severity with days out of role and treatment by using analysis of variance.

After data analysis, it was found that the twelve-month prevalence of depressive disorder in metropolitan China, like Beijing and Shanghai, was 2%, which seems to be among the lowest rates of depression of the countries that participated in the World Mental Health Initiative (Shen et al., 2006). That is to say, the prevalence of depression seems to be less common in China than in Western countries. This conclusion seems to be consistent with many previously conducted depression-related surveys in China. A World Health Organization study of prevalence rates for the diagnosis of depression based on ICD-10 criteria in general health care settings in 15 countries suggested that China (Shanghai) has a lower than average rate of depression at 4.0% (Ustun and Sartorius, 1995). Unlike the

earlier national surveys, both Shen and Ustun's surveys used standardised World Health Organization research methods (e.g. the WMH-CIDI), in addition to rigorously trained interviewers or researchers, more sophisticated sampling, and careful and standardised field quality control procedures (Kessler and Ustun, 2004). Therefore, the data collected from these surveys seem to be reliable and indicative.

One possibility is that the lower prevalence rate of depression in comparison with Western countries perhaps because Chinese depression might be presented in forms that are different from those identified in the West. A hospital study of psychiatric patients in Hong Kong was conducted by Chan and Lai (1993) to investigate this possibility. In this study, although about one third of patients reported experiencing symptoms associated with depression and anxiety, only about 10% of those presented with the collection of symptoms consistent with the classical picture of Western depression, such as feelings of guilt and worthlessness, depressed mood, and general psychomotor slowing. If Chinese patients present with the symptoms of these disorders in different ways, an imported Western syndrome-based approach may fail to detect individuals with significant psychopathology. Under this circumstance, the question of how Chinese symptom patterns might differ from those found in the West could be discussed. One possibility referring to the phenomenon of somatisation was offered by Tseng and Hsu (1970) indicating that, "the Chinese especially concern with the body and find it relatively easy to somatise." (p. 11) In a recent study, it is suggested that people living in China have a lower prevalence rate of depression in comparison with Western countries, perhaps as a result of a denial of mental health problems, or a tendency to express depression somatically (Kessler and Ustun, 2004).

2.2.3.1 Chinese somatisation

Somatisation, which mainly refers to the presentation of psychological distress through physical symptoms, might be the most commonly discussed cross-cultural difference in depression and anxiety. It has been proposed as a possible explanation for the low prevalence rate of depression found in Chinese culture (e.g. Kessler and Ustun, 2004; Parker et al., 2001), which has become a central problem for cultural psychopathology. According to Bridges and Goldberg's (1985) study, somatic presentation can be explained in three different aspects: (a) initial symptom presentation, primarily physical in somatising patients; (b) subsequent symptom presentation, physical in some somatising patients; and

(c) symptom attribution, again physical in some somatising patients. In the next section, the empirical evidence for somatisation will be reviewed.

Since the publication of Kleinman's (1977) report on the phenomenon of somatisation, some studies have suggested that Chinese individuals tend to complain about physical symptoms while avoiding psychiatric help. For instance, a study of somatisation and culture was conducted by Kleinman (1982) to review conceptual and empirical issues referring to the interaction of somatisation, neurasthenia, and depression in Chinese culture and in the West. The historical background of neurasthenia and its current state, as well as the epidemiology and phenomenology of depression and somatisation were discussed in this study. Both psychiatric and anthropological methods were adopted in Kleinman's (1982) study to assess 100 neurasthenia patients in China. After statistical analysis, it is reported that 87% of Chinese patients were experiencing some form of depression. At the same time, common complaints involved headaches (90% of cases), insomnia (78%), dizziness (73%), and various pains (49%), whereas depressed mood accounted for only 9% of these cases. Kleinman also concluded that neurasthenia was known as a Chinese-specific way of expressing depression, even though it can be understood in several distinctive ways. Moreover, Tsoi (1985) similarly suggested that the most common symptom reported by Chinese individuals diagnosed with either depression or anxiety was "general discomfort", followed by "pain", "insomnia" and "anxiety". The common problem with these early studies was a lack of comparison groups, especially a lack of the Western comparison sample.

The Western comparison sample was used by Parker, Cheah, and Roy (2001) to investigate the interaction of somatisation and depression in Malaysian Chinese and Euro-Australian depressed outpatients. In this study, patients were required to nominate a single symptom as their presenting complaint, and then to complete a self-report measure of somatic and cognitive symptoms. After statistical analysis, the researchers found that a somatic symptom was identified in 60% of Malaysian Chinese patients as compared with 13% of Euro-Australian patients. Moreover, Chinese respondents scored more highly on the somatic scale, but showed much lower scores on the cognitive scale. Based on these findings, both the prediction of higher Chinese somatisation and the parallel idea of Western psychologisation have been supported.

Given that there seems to be sufficient evidence to suggest that some sort of somatisation occur in China, it may be tempting to cease our investigation and draw some conclusions. Based on the previous literature on depression in Chinese culture, Chinese somatisation has been described in mainland China, Taiwan and Hong Kong, as well as in Chinese immigrants to Western countries.. Western clinicians are increasingly aware of these cultural differences, and often take the phenomenon of somatisation into consideration when working with Chinese-speaking clients. However, there are reasons to suspect that the termination of such investigation and effort seems to be premature. At the most basic level, when researchers attempt to investigate and address this long-standing question in the field of cultural psychiatry, another question Why are Chinese individuals more likely to somatise? has aroused the concerns of researchers, especially those with a primary interest in cross-cultural differences. Additionally, it is believed that clinical practice itself will benefit from a more detailed and in-depth investigation of this issue. For instance, if Chinese patients present depressed and/or anxiety disorders differently due to their avoidance of discussing psychological symptoms, then the clinicians should take different approaches to the problems.

2.2.3.2 Somatisation and psychologisation in the West

Further evidence that the phenomenon of somatisation is not solely a Chinese phenomenon not observed in the West also exists. Earlier studies suggested that somatic symptoms were the “cultural” equivalent of depression and that the phenomenon of somatisation, the process by which psychological distress was “converted” to somatic symptoms, was typical in Chinese culture. However, some studies have found that this hypothesis seems to be incorrect. Somatic symptoms are also the common presenting features of depressive and/or anxiety disorders in Western countries and by native populations. For example, Kirmayer et al. (1993) have found that many patients in North America presented exclusively somatic symptoms on spontaneous self-reports, but endorsed psychological symptoms when asked directly. Furthermore, a study of culture and somatisation was produced by Kirmayer and Young (1998) to review the cross-cultural prevalence of somatisation and the limitations of current psychiatric theory for interpreting cultural variations in somatisation. After reviewing the recent research literature and research findings, it is believed that somatisation is common in all ethnocultural groups and societies.

Based on previous discussion, researchers have indicated that the phenomenon of somatisation is common enough worldwide that it should not be considered as a Chinese-specific presenting style. Under this circumstance, it seems to be reasonable to instead characterise Western “psychologisation” as a culture-bound variable explaining observed cross-cultural differences (Kirmayer, 2001). According to Ryder et al.’s (2008) study of the cultural shaping of depression, researchers examined symptom presentation in Euro-Canadian (n=107) and Chinese (n=175) outpatients, using spontaneous problem report, structured clinical interview, and symptom questionnaire methods. In this study, Chinese outpatients were found to report more somatic symptoms on spontaneous problem report and structured clinical interview in comparison with Euro-Canadian outpatients, while Euro-Canadians reported significantly more psychological symptoms (e.g., worthlessness, depressed mood, guilt, anhedonia) on all three methods. Based on these findings, Ryder and colleagues suggested that Western patients paid more attention to the psychological aspects of depression compared to other cultures. That is to say, Western psychologisation seems to be more culturally specific than Chinese somatisation.

Moreover, Zhou et al. (2011) examined whether similar cultural differences can be found for anxiety disorders. In the study, 154 Han Chinese and 79 Euro-Canadian psychiatric outpatients with clinically significant concerns about anxiety and depression were selected from a large dataset according to their responses to structured interviews. Self-report questionnaires evaluating somatisation of anxiety and depression were also used to recruit and select participants. When compared with the Euro-Canadians, Chinese participants reported a greater tendency to focus on their somatic symptoms of depression. Contrary to expectations, the Euro-Canadians showed a greater tendency to emphasise somatic symptoms of anxiety compared with the Chinese participants (Zhou et al., 2011). Despite the exploratory nature of Zhou et al.’s (2011) study, these results suggest that the popular notion of “Chinese somatisation” should not be over-generalised.

These findings provide evidence that Chinese individuals who experiencing depressive and anxiety disorders continue to express more somatic symptoms than their Western counterparts when interviewed by clinicians, especially when questioned directly. Referring to depressed individuals in North America and Europe, they report more psychological symptoms regardless of the assessment method used. These findings also remind us that observed cross-cultural differences are not necessarily entirely attributable to idiosyncrasies of the “other” culture. If somatisation - and perhaps psychologisation -

can occur in both Chinese and Western cultures but are unevenly distributed, the understanding of cultural phenomena and characteristics can help to better explain cross-cultural differences.

2.2.3.3 Idiom of distress

Culturally patterned idioms of distress (Guarnaccia, 2003; Lewis-Fernandez et al., 2005b) are known as bodily and linguistic styles of experiencing and expressing illness (Nichter, 1981) i.e. cultural ways of talking about distress. DSM-IV includes an appendix with several somatic idioms of distress that are related to depression and anxiety disorders (Bhugra and Mastrogianni, 2004). In the case of depression, these idioms often take the form of somatic metaphors. For example, “Shenjing shuairuo” or neurasthenia was the preferred diagnosis over the psychological diagnosis of major depression in Chinese culture in the past two decades, because it recognises the presence of a physical process (Parker et al., 2001). Knowledge of these cultural idioms can facilitate diagnosis of depression, and minimise the risk of misdiagnosis.

Although earlier researches (Kleinman, 1982; Kleinman, 1986; Parker et al., 2001) have identified a strong link between depression and neurasthenia in China, more recent research in China and among Chinese Americans has identified the differing relationships between psychiatric disorders and neurasthenia (Chang et al., 2005). Chang and colleagues (2005) suggest that neurasthenia can be better understood as a distinct category for organising the experience of distress among people of Chinese origin, since these Chinese people who meet or report criteria for neurasthenia do not meet criteria for any DSM disorder. If they meet or report criteria for a DSM disorder, it is as likely to be a somatoform disorder rather than a mood disorder. Based on these findings, the relationship between mood disorders and culture-specific diagnoses becomes complicated.

2.2.3.4 Cultural factors on the depression and anxiety presentation

The understanding of cultural factors and characteristics can help to better explain cross-cultural differences. According to previous studies on cross-cultural differences, Chinese and modern Western cultures are fundamentally different from each other.

Modern Western culture perhaps has greater extroverted inclinations, while Chinese culture perhaps has introverted inclinations (Yip, 2005). Specifically, Western concepts of mental health involve adaptation, role performance, social functioning, and well-being in various aspects of social life (Yip, 2005). That is to say, Western people often function well in family and employment settings. They improve or change oppressive social systems to assert their own rights and functions. Conversely, an introverted Chinese culture focuses on self-demand or self-absorption, but not being demanding of others or trying to change the external environment (Yip, 2005).

Internal and external requirements for individuals to maintain good mental health are emphasised in the concepts of mental health in Chinese culture (Yip, 2005). The internal requirements encourage people to cultivate their minds and thoughts, restrain their emotions and desires, and discipline their behaviours and actions with a step-by-step process so as to achieve peace of mind (Yip, 2005). Regarding external requirements of concepts of mental health in Chinese culture, moral standards in interpersonal and social interactions, such as being kind, humane, and considerate in interactions with others, being forgiving of others' shortcomings and faults, and being faithful to one's family, friends and country, are suggested (Oldstone-Moore, 2002). In addition, Chinese concepts of mental health also explain that, in order to maintain a good mental balance, Chinese people are required to reduce their inner emotions, desires, and stresses. Under these influences, Chinese people typically choose self-discipline and self-control, rather than challenging the external social environment.

According to earlier discussion, it is suggested that somatisation is a concept that reflects the dualism inherent in Western biomedical practice, whereas in most traditional medical systems a sharp distinction between the "physical" and "mental" does not occur. In Chinese culture and medicine, the mind and body are integrated (Kaptchuk, 2000). This theory suggests that Chinese individuals express emotions in ways that merge mind and body, rather than separating the two clearly. By contrast, Western individuals are thought to focus on the mind, while paying relatively less attention to physical experiences. Based on this theory, somatisation could be defined as being the difference in attention to symptoms, and possibly even as the fundamental difference in experience (Ying et al., 2000). A mixing of psychological and somatic symptoms has been found in previous studies. This mixing was explained as evidence of the centrality of somatic symptoms in Chinese depression, and was attributed to the reduced distinction between body and mind.

Under these influences, Chinese individuals seem to be more likely to manifest stress through physical symptoms. Additionally, some explanations about Chinese somatisation also said that Chinese individuals are thought to be reserved in expressing their emotions and feelings, avoiding open emotional displays in order to conceal weakness and achieve peace of mind (Markus and Kitayama, 1991; Yip, 2005).

The stigma of mental illness, that is, feeling embarrassed and losing face, may also prevent Chinese individuals from expressing their mental health problems, and seeking mental health services (Liu, 2009). The growing number of studies have shown that mental illnesses are particularly stigmatised in Chinese society. For example, a comparative study was produced by Ryder, Bean, and Dion (2000) to investigate caregiver responses to symptoms of first-onset psychosis. In this study, three hypotheses were investigated and confirmed: (a) longer delay in seeking treatment among Chinese versus Euro-Canadians; (b) greater burden among Chinese versus Euro-Canadians; and (c) more negative conceptions of mental illness among Chinese versus Euro-Canadians (Ryder, Bean and Dion, 2000). Moreover, this study also indicated that although there seems to be a greater tolerance for symptoms when the illness can be kept within the family, Chinese families are particularly likely to attempt to shield the afflicted family members from the rest of the community. Based on these findings, it is suggested that Chinese caregivers were more affected by the stigma of mental illness than Euro-Canadian caregivers; and Chinese caregivers were more likely to endorse the practice of keeping mental illness a secret from others (Ryder, Bean and Dion, 2000). In other words, the greater stigma of mental illness has been found in Chinese culture.

According to the previously discussed explanations of somatisation, the theory of avoidance of stigma seems to be more advanced, with some empirical investigation. Cheung and her colleagues (1995) reviewed a series of studies, demonstrating that Chinese individuals are particularly likely to seek professional help if their symptoms are perceived as “physical” and “medical”. Empirical studies have confirmed that although prevalent in all cultures, stigma of mental illness is much more severe among Asians than among Americans and Europeans (Fogel and Ford, 2005; Furnham and Chan, 2004).

2.3 Chinese-speaking international students' experience of mental health problems

With the global spread and communication of culture and education, an increasing number of international students choose to study overseas. Specifically, during the 2004-2005 academic year, a total of 565,039 international students were studying at the academic institutions in the U.S. (Institute of International Education [IIE], 2006). Moreover, there were over 657,000 international students studying and living in the UK during the 2010-2011 academic year, with more than half of these students coming from Asian countries, including China (Choudaha and Chang, 2012). When transiting and studying in new and unfamiliar settings, these international students may share similar characteristics to local students, including motivation to pursue academic goals (Hwang, 2000), development of interpersonal relationships (Lin, 2002b), preparing for their future careers (Skyrme, 2007), or reporting high levels of stress (Wei et al., 2008); and will also reveal some unique characteristics (e.g. self-transcendence and self-discipline), distinctive emotional problems (e.g. anxiety), and special experiences (e.g. homesickness), which reflect the changes in their educational, social and interpersonal environments (Liu, 2009; Lin, 2002).

Additionally, Yeh and Inose (2003) suggested that international students from Asian countries, such as Chinese-speaking international students, experience more acculturative stress than their counterparts from Western countries. Acculturative stress is defined as a stress reaction in response to life events that are rooted in the experiences of acculturation (Berry, 2005), the psychological difficulties in adapting to a new culture (Smart and Smart, 1995), or psychosocial stressors resulting from unfamiliarity with new customs and social norms (Lin and Yi, 1997). Specifically, referring to Chinese-speaking international students, the sources of acculturative stress often include language difficulties, academic pressures, difficulties in adjusting to new cultural values or food, lack of support, perceived discrimination, and homesickness (e.g. Pedersen, 1991; Sandhu and Asrabadi, 1994; Yeh and Inose, 2003). When experiencing acculturative stress, they may feel overwhelmed and doubtful of their abilities, which may be vulnerable to depression.

Since the open-door policy in the 1980s, the number of mainland Chinese students attending Western universities has increased dramatically. According to a study of higher

educational transformation of China, it is reported that China has become the second-largest source of international students (Li et al., 2011). Because of the significant cultural differences between long-isolated China and the Western world, Chinese students may experience severe cultural shocks when landing in Western countries. For example, believing in Confucian philosophy of harmony, which is known as passive and yielding, Chinese international students, who want to develop non-confrontational relationships with members of the host society and fulfill the expectations of the Western society, may experience more difficulties than international students from other regions (Oldstone-Moore, 2002; Hsieh, 2006).

Previous researches have suggested that Chinese international students' psychological problems should not be simply considered the same as those of Chinese immigrants. Specifically, according to Berry et al.'s (1987) study, five different acculturation groups, namely native people, ethnic groups, immigrants, sojourners and refugees, were identified on the basis of the nature of their contact with the host culture. According to this classification, international students are accurately described as sojourners (Wang and Mallinckrodt, 2006). Their status as sojourners (someone temporarily residing) can be more likely to contribute to difficulties such as lack of language ability and social connectedness. Furthermore, in comparison with immigrants, international students are less likely to have time to develop coping mechanisms to deal with isolation and discrimination and to establish social support systems; and seem to be more likely to be subject to many legal restrictions with regard to their employment opportunities in the host society (Bikos and Furry, 1999). This part of the chapter addresses the mental health issues among Chinese-speaking international students.

Chinese-speaking international students are exposed to a totally different educational, social, economic, and political environment. Therefore, they can experience significant changes and personal developments, such as experiencing perceptions of freedom, openness, democracy, liberty, equality and individuality. These changes and developments may in turn have a large impact on such students' perceptions of their lives and studies overseas. Based on previously discussed concepts of mental health in Chinese and Western cultures, it is suggested that Chinese international students encounter customs and values in Western countries that contradict those of their country of origin, such as collectivism versus individualism (Sue and Sue, 1990), and cooperation versus competition (Lynch, 1992). The accepted behaviours and norms in their country of origin may be

misunderstood or ridiculed in the new environment, which may create discomfort and confusion (Lynch, 1992). Hsieh's (2006) study also suggested that Asian international students seem to have more difficulties than students from Western countries in fitting the expectations and norms of the dominant culture. These Asian international students are aware of the need to learn Western cultural norms and values, however this learning process seems to be not easy (James, 1997). Under these circumstances, Chinese-speaking international students who have been in Western countries for a shorter period of time (one year or less) reported experiencing more stress than those who have been in Western countries for a longer period of time (four years or more) (Wei et al., 2007).

According to Mallinckrodt and Leong's (1992) study of international graduate students, stress, and social support, Cross-cultural differences relating to social interaction can prevent international students from forming close relationships with students of the host countries, and may result in acculturative stress. Specifically, it is suggested that Asian international students indicate experiencing problems associated with social interaction (Yeh and Inose, 2002). Cultural differences in interactional styles and lack of English language skills are regarded as the factors that contribute to these problems. Based on the content of collectivistic and individualistic cultural backgrounds, they argue that people in the East are defined by their similarity and connection with others; while people in the West are defined by their uniqueness and separateness from others. Chinese society has been identified as collectivistic and interpersonally oriented (Markus and Kitayama, 1991). On the contrary, in the Western cultures, such as in American mainstream culture, a clear demarcation between the self and others has been identified, which attaches great importance to independence (Markus and Kitayama, 1991). Consequently, in comparison with Chinese people, Western people score significantly higher on individualism. For most Westerners, the wish for interpersonal connectedness is counterbalanced by the wish for privacy and autonomy. In other words, the Western society has been characterised as individualistic (Markus and Kitayama, 1991).

Under these influences, students from the collectivistic cultural background may give priority to the close relationship, and they may feel confused when interacting with Western students who focus on aspects of individualism, including self-reliance, assertiveness and independence (Mori, 2000; Cross, 1995). A study conducted in the U.K. indicated that Chinese-speaking international students often report "isolated and marginalised" and "very alone" from "home" students, which can result in feelings of

frustrated, irritated, depressed, and withdrawn. Moreover, such Chinese-speaking international students also report feeling discouraged and disappointed with their interpersonal relationships with “home” students (Bradley, 2000).

Studies have shown that the factor of social support has a significant influence on the mental health of international students (Hayes and Lin, 1994; Mallinckrodt and Leong, 1992). A related study of developing social support systems for international students has found that after moving to another countries, leaving their friends and families, international students are likely to experience a deep sense of loss (Hayes and Lin, 1994). The establishment of a comparable social support system in the host country is also extremely challenging for these international students. Therefore, international students may suddenly experience a feeling of being deprived of emotional and social support when studying and living in an unfamiliar environment (Mallinckrodt and Leong, 1992). Mallinckrodt and Leong (1992) investigated the implications of social support among international students, and suggested that the quality of the social support system could have both a buffering and a direct effects when international students experiencing emotional and psychological stress. In general, loss of social support and lack of social connectedness can lead to acculturative stress among international students. This acculturative stress is often accompanied by emotional pains, such as feelings of loneliness, marginality, inferiority, powerlessness, and perceived discrimination.

One study of Chinese international students in Britain revealed a 94.9% rate of homesickness (Lu, 1990). Lu (1990) suggested that stronger family connections and collectivistic orientation in the Chinese culture may have contributed to the homesickness. The negative effects of homesickness on psychological well-being among international students have been also investigated. Homesickness negatively impacts the academic performance of international college students (Willis et al., 2003), and excessive acculturative stress can contribute to headaches, sleeping and eating problems, and low energy (Ye, 2005). Numerous studies have demonstrated moderate to strong positive correlations between homesickness or acculturative stress and depression among international students in the United States (e.g. Ying, 2005; Wei et al., 2007).

In addition, the status of non-immigrant can create barriers for Chinese international students. That is to say, they are legally prevented from serving as part-time student status or from temporarily withdrawing, both of which often provide useful functions for

domestic students – particularly if they face mental health difficulties. Otherwise, they would have to give up their student visas (Lin and Yi, 1997). Furthermore, because of the strict immigrant visa policies, Chinese international students may experience difficulties in re-entering the Western countries if they need to leave for any reason. In particular, Chinese international students who are majoring in some “sensitive” technological courses, such as biomedical engineering, aerospace engineering and information security, are required to go through a relatively rigorous visa review program (Jacobs, 2003). This creates a major barrier for frequent family reunions, which exacerbates the previously discussed loss of social support and homesickness.

Based on the previously discussed phenomenon of somatisation and psychologisation, and concepts of mental health in Chinese culture, individuals’ psychological presentation, emotional expression, and interactional patterns are impacted by the culture; and cultural ideologies, institutions, and practices provide the context and rules for interactional processes that underlie complex emotion (Liu, 2009).

It is also believed that culture influences the sources of distress, ways of expressing and experiencing illness, interpretation of symptoms, modes of distress, coping skills, help-seeking behaviours, and social responses to distress and illness (Liu, 2009; Zhou et al., 2011). Under these cultural influences, Chinese people prefer to manifest low mood, stress, anxiety and depression through physical symptoms. For example, cardiovascular disease is the most common physical condition among Chinese individuals with chronic mental disorders; and “neurological weakness” is also the common physical diagnosis over the psychological diagnosis of major depression, since it recognises the presence of a physical process (Kirmayer, 2001). Kirmayer also concluded that the most common somatic symptoms of anxiety and depression are fatigue and musculoskeletal pain (Kirmayer, 2001).

Based on Liu’s (2009) review, Chinese-speaking international students prefer to seek medical help for their physical complaints, like headache, fatigue, stomachache, eating problems, and sleeping problems, even though these problems may stem from psychological stressors (Miller et al., 2003). If these physical symptoms cannot be found, such students may not continue to seek alternative causes or services that are related to mental health. According to previously discussed concepts of mental health in Chinese culture, the stigma of mental health problems, which includes embarrassment and losing

face, can prevent Chinese-speaking international students from seeking help with professional mental healthcare services (Liu, 2009). In seeking help for problems and difficulties, the majority of Chinese-speaking international students firstly rely on themselves to cope with distress, and only secondarily consider asking friends or families for help. That is to say, these students prefer to keep their emotional problems or difficulties to themselves because such problems may imply personal failure; and they rarely use mental health services, despite the fact that they experience more difficulties than students in general and have emergent needs for psychological assistance (Liu, 2009). Again, Chinese-speaking international students used the term “depression” infrequently and preferred to say “sickness” or “condition” (Koo, 2012). Using the term “sickness” could widen the scope beyond psychiatric disorders, reducing stigma and embarrassment (Koo, 2012).

In addition, Chinese-speaking students may not seek formal assistance from mental health services, because of their lack of awareness of the availability of psychological services (Wei et al., 2007). According to an investigation into the present condition of mental health in China conducted by Sichuan Mental Health Service Institutes, cultural beliefs, together with the stigma relating to mental illness, are the major barriers to access professional help (Huang et al., 2009). The alternative may be a tendency to attempt to cope with problems using self-help approaches, rather than seeing qualified practitioners for face-to-face treatment. Consequently, Chinese-speaking international students often miss out on evidence-based interventions for their difficulties.

The preceding review and discussion have provided a good understanding of Chinese international students’ particular ways of communicating mental health problems, and suggested several possibilities for addressing the mental health problems of this group of students. The implications for mental health social workers, health providers, support workers and academic staffs within universities are presented. For instance, mental health services could conduct culturally sensitive outreach programs to increase Chinese-speaking students’ awareness of the available recourses for normalising their problems or difficulties, like introducing computerised psychological therapies, guided self-help workbooks, and psychoeducational group therapy (Wei et al., 2007). Low-intensity interventions could be used to engage those Chinese-speaking students in choosing the mode of delivery of psychoeducational materials, like CBT materials, to prevent cultural stigma and the

geographic distribution problems of traditional psychological therapies; and to enable individuals to access the most appropriate materials for their needs (NICE, 2011).

The suggestions discussed in Liu's (2009) study, as well as a number of other creative efforts, can help prevent or reduce the mental health problems of Chinese-speaking international students and assist them in making successfully cultural, social and academic adjustments. For example, it has been suggested that existing diagnostic models overly reflect a westernised view of illness (Parker et al., 2001). Therefore, it may be that the content of westernised psychological interventions, such as CBT resources, needs to be modified and adapted in order to engage Chinese-speaking international students.

2.4 Chapter summary

In this chapter the cultural factors on the presentation of depression and anxiety in Chinese-speaking settings have been explored. In Western societies, mental health and psychological problems such as low mood, anxiety and depression have been formally identified, recognised and diagnosed as disorders. Psychotherapy for those disorders has been studied and applied systematically in the West (Nathan and Gorman, 1998). However, in Eastern societies like China and many other Chinese-speaking countries, identification and diagnosis of mental disorders did not even begin to appear in people's vision until after World War II (Chang et al., 2005). It is suggested that such delay is due to the unique concepts of mental health in Chinese culture (Liu, 2009). Therefore, with a more in-depth understanding and awareness of the concepts of Chinese culture, further continuous researches into the Chinese-speaking population's perceptions of mental health problems is necessary. This could provide social workers with a holistic view of the concepts of mental health in Chinese culture, and thus help this population achieve more culturally effective treatments.

Chapter 3: Treatments for depression and anxiety

3.1 Introduction

In this chapter treatments for depression and anxiety and how they can be culturally modified for Chinese-speaking populations will be examined. We will explore the application of psychological therapies including the cognitive behavioural therapy (CBT). In addition, how the CBT model modified to address the needs of Chinese-speaking populations will be also discussed.

3.2 Treatments for depression and anxiety

Treatments for anxiety and depression include antidepressants and psychosocial or psychological therapies. According to the guidelines produced by the National Institute for Health and Clinical Excellence (NICE), a range of psychosocial and psychological interventions for mild, moderate or severe anxiety and depression have been applied to effectively relieve the symptoms of these conditions, and there is growing evidence that psychosocial and psychological therapies can, in the long-term, help people recover from mental health problems such as low mood, stress, anxiety and depression (NICE, 2004a). Individuals suffering from mental health problems typically prefer psychosocial and psychological treatments to medication (Prins et al., 2008) and value outcomes beyond symptoms reduction that involve positive improvements to mental health and a return to usual functioning (Zimmerman et al., 2006). Psychosocial and psychological therapies, particularly high-intensity therapies, such as cognitive behavioural therapies (CBT), problem solving, interpersonal therapy, counselling, and rational emotive behavioural therapy, which involve one-to-one treatments over a long period of time, are resource intensive. Based on Shafran et al.'s (2009) study, there is substantial evidence to support the use of high-intensity interventions, like the use of CBT for the treatment of anxiety and depression.

Cognitive behavioural therapy (CBT) for mental health problems such as depression and anxiety was developed by Aaron T. Beck during the 1950s and was formalised into a treatment in the late 1970s (Beck et al., 1979). CBT originally focused on the styles of

conscious thinking and reasoning in people with depression and/or anxiety, what Beck concluded to be the result of the operation of underlying cognitive schemas or beliefs (Beck et al., 1979). Beck's cognitive theory (CT) is based on an information-processing model which indicates that an individual's thinking styles become more distorted and rigid, judgements become absolute and overgeneralised, and the individual's internal or external beliefs about the self and others become fixed during the period in which they are experiencing psychological distress (Weishaar, 1996). For example, an individual who makes himself sad about not being invited to a party, complaining to his friends and himself in this way: "they don't like me", "I must have done something to make them unhappy" and "I'm not good enough", fails to consider other possible reasons for not being invited (for instance, perhaps his friends forgot to send him the invitation card).

Common information-processing distortions or biases have been summarised in Beck's CT (Weishaar, 1996, p.188), including:

- All-or-nothing thinking: situations are viewed in either/or terms, with no in-between situations (e.g. "either you're a success or failure in life").
- Mind-reading: you believe you can discern the thoughts of others without any accompanying evidence (e.g. "they don't like me").
- Labelling: instead of labelling only the behaviour, you attach the label to yourself (e.g. "I failed to get the job, so I'm a loser").
- Jumping to conclusions: drawing conclusions on the basis of inadequate information (e.g. "I'm not good enough, so I cannot get the job").
- Emotional reasoning: assuming that your feelings are facts (e.g. "I feel ashamed that I don't have that cell phone, so I must have one").

This therapy teaches the person with mental health problems to identify and change these cognitive distortions and to re-evaluate his/her thoughts and new behaviours. In practical application, cognitive therapy (CT) is more commonly called cognitive behavioural therapy (CBT). This is because CT is often practised with behavioural therapy principles, like the re-evaluation of new behaviours (NICE, 2010). CBT focuses on changing how people think ("Cognition") and what people do ("Behaviour") (Whitfield and Williams, 2003). These changes can help people to feel and live better. As with other psychotherapies, CBT is not static and has been evolving and changing. There have been important elaborations (Beck, 1997) that enable these therapy techniques to address underlying negative thoughts more directly, and these have been applied to particular situations and supported as effective for the treatment of depression and anxiety in clinical settings (Moore and Garland, 2003; Whitfield and Williams, 2003). Detailed information about the use of CBT in clinical and practical settings will be discussed in Chapter 4. There is,

however, also evidence that affected people are not consistently receiving evidence-based psychological interventions in routine clinical care (NICE, 2009; Kaltenthaler and Cavanagh, 2010).

Referring to the difficulties of delivering high-intensity interventions, the high expense of service costs, problems with accessing services, long waiting times for therapy, and a scarcity and a geographic distribution of accredited therapists that lacks equity have been identified as involved factors (Shafran et al., 2009).

In response to these challenges, and to increase access to psychological therapies for people with mild to moderate mental health problems, alternative modes of delivering high-intensity interventions, such as low-intensity interventions including group therapy, bibliotherapy and computerised CBT (cCBT), have been developed (NICE, 2010; 2013). Most low-intensity interventions are based on the principles of cognitive behavioral therapy (CBT) and vary based on whether their deliveries are accompanied by support from professional healthcare services or not and are differentiated into guided self-help and non-facilitated self-help. The dissemination of low-intensity interventions is rapidly changing with the use of information technology that has the potential to enhance the cost effectiveness, availability, and accessibility of mental health services (NICE, 2011). The role of mental health professionals in delivering low-intensity interventions (both guided self-help and non-facilitated), is to engage people in choosing the mode of delivery for CBT materials, provide sufficient information relating to the materials to be used, and know the materials sufficiently well to enable each person to choose the most suitable and acceptable materials on the basis of users' needs. The appropriate reviewing and monitoring of the treatment progress are also confirmed by the healthcare professionals (NICE, 2010).

The modes of delivery for low-intensity psychological interventions involve: guided self-help, non-facilitated self-help, psychoeducational groups, and computerised CBT (cCBT) (NICE, 2011). Specifically, guided self-help is known as a self-administered therapy including CBT-based self-help resources, like books, self-help workbooks or multimedia, with limited guidance from support workers. These support workers, such as psychological practitioners or healthcare professionals, work to guide users to effectively apply the self-help resources, and monitor or review the process and outcomes of this intervention (Gellatly et al., 2007). Such support is often delivered face-to-face or by

telephone and emails. However, there seem to be limitations to written self-help resources in that a level of literacy is required and few self-help resources have been translated into other languages (NICE, 2011). Non-facilitated self-help can be defined as a similar treatment to guided self-help, but usually with minimal therapist contact, such as occasional brief telephone support of less than 10 minutes (Gellatly et al., 2007). The psychoeducational group is often adopted in large groups of 20 to 24 participants (NICE, 2011). Based on the 2011 NICE guidelines, the psychoeducational group aims to educate participants about the nature of mental health problems such as anxiety and depression, and ways of managing these problems using CBT techniques with a didactic approach. Self-help materials and presentations are arranged by trained practitioners in psychoeducational group treatment.

The use of information technology to deliver psychological interventions, such as self-help resources delivered by telephone, over the internet and by computer, has been investigated (Proudfoot et al., 2004). For example, computer software programs are increasingly used to deliver psychological treatments. Based on the 2011 NICE report, the majority of low-intensity interventions use the principles of CBT to make individuals learn specific skills, challenging their negative thinking and dysfunctional behaviour. Moreover, CBT is currently the main psychological treatment approach that has been computerised. In my research project, low-intensity CBT resources, particularly cCBT for use in Chinese-speaking international students with mild to moderate anxiety and/or depression, will be examined and discussed.

Cognitive behavioural therapy (CBT), helping to change how people think (“Cognitive”) and what people do (“Behavioural”), can be seen as an effective psychological intervention for many common mental health problems such as low mood, anxiety and depression (NICE, 2010). Specifically, CBT helps people become aware of negative or inaccurate patterns of thinking, so that people with mental health problems can review challenging situations more clearly and respond them in more effective ways (NICE, 2010). CCBT is a generic term which is adopted to refer to various methods of delivering CBT through an interactive computer interface that make some psychotherapy decisions based on users’ inputs. It engages the users in a structured programme of care, the content of which is based on and similar to the same principles as interventions provided by psychotherapists following standard CBT requirements (Kaltenthaler and Cavanagh, 2010).

One meta-analysis conducted by Spek and his colleagues (2007), specifically focusing on computerised therapy programs, reviewed 28 RCTs comparing internet-based CBT resources for mental health problems like anxiety and depression with control groups (waiting lists or usual treatments). The authors suggested that such treatments involving professional support are much more effective than those without; and treatments for anxiety seem to be more effective than treatments for depression (Spek et al., 2007). According to the evidence of the meta-analysis, it is suggested that cCBT seems to be of benefit to individuals with anxiety and depression (Spek et al., 2007). Titov et al. (2008) produced an RCT study to examine the effectiveness of delivering cCBT for people with social phobia. In this study, participants assigned to clinician-assisted cCBT group did better than self-guided CBT or waiting list control groups; and these participants allocated in the self-guided cCBT group, completing the six-module program, reported good progress. Based on these studies, it is believed that cCBT resources are effective for reducing mental health problems like anxiety and depression. Unsupported cCBT resources for anxiety or depression have been reported with less positive outcomes, and demonstrated no benefit for providing an unsupported cCBT program as an alternative to the usual care (Titov et al., 2008).

In terms of the use of cCBT resources in clinical settings, a RCT study was conducted to test the clinical efficacy of cCBT for people with anxiety and depression in primary care (Proudfoot et al., 2004). In this study, 274 patients aged 18 to 75 years suffering from anxiety and/or depression were randomly allocated to: (1) either a cCBT group, (2) with or (3) without medication groups, or (4) a treatment as a usual group. The participants involved experienced symptoms of anxiety and/or depression with scores of 4 or more on the 12-item General Health Questionnaire (GHQ-12) and 12 or more on the computerised version of the Clinical Interview Schedule – Revised (CIS-R). Participants were identified and recruited by screening with the GHQ or by their practitioner. They were then referred to the practice nurse for randomisation. The cCBT package, *Beating the Blues*, consisting of a 15 min introductory videotape, followed by eight-module therapy, was adopted as the treatment material in this study. Each weekly module lasts about 50 minutes, with “homework” projects between the modules. The content of this 8-module package involves cognitive and behavioural components, such as automatic thoughts, thinking errors and distractions, challenging unhelpful thinking, core beliefs, attributional style, and activity scheduling or problem-solving associated with the specific problems of patients (Proudfoot et al., 2004). In other words, modules and homework projects are customised to the

participant's specific needs and each module builds on the one before. Four instruments, namely the Beck Depression Inventory II (BDI), the Beck Anxiety Inventory (BAI), the Work and Social Adjustment Scale (WSA), and the Attributional Style Questionnaire (ASQ), were used to evaluate participants' responses and outcomes. The fifth measure, Satisfaction with Treatment, was administered 2 months after the treatment. The findings of data analysis suggest that cCBT did better than the usual treatment for depressed people, and it was also clinically effective and acceptable for people in the treatment of anxiety, depression and mixed anxiety/depression (Proudfoot et al., 2004).

According to the previously reviewed studies, it is believed that cCBT is effective and widely acceptable in the treatment of individuals with mental health problems such as low mood, stress, anxiety and depression. CCBT provides convenient and potentially quicker access to psychological treatments for most people, as it can be delivered in a variety of settings, including the home environment and at a time that is convenient to the person. Because of the lack of face-to-face contact, users may feel safer sharing their problems or difficulties, and experience less embarrassment. In addition, regarded as a client-led treatment, cCBT can promote mastery, control and learned resourcefulness in users (Kaltenthaler and Cavanagh, 2010; NICE, 2013).

The effectiveness of cCBT resources for use with Chinese-speaking populations has also been examined. A study, produced by Choi et al. (2012), has supported the efficacy and acceptability of a cCBT program in reducing symptoms of depression in Chinese Australians. In this study, the Chinese version of the cCBT program, *Brighten Your Mood*, consisting of an 8-week program with 6 CBT online educational lessons, homework assignments, Chinese or English additional resources, and weekly telephone support, was adopted to treat Chinese Australians with depression. Fifty-five Chinese Australians suffering from depression were randomly allocated to either an immediate treatment group or a delayed access control group. After treatment and data analysis, the immediate access group participants reported significantly reduced symptoms of depression on the Chinese version of the Beck Depression Inventory (CBDI) and Patient Health Questionnaire-9 item (CB-PHQ-9) when compared with the controls. Participants also rated the online treatment procedure as acceptable, and gains were sustained at the three-month follow-up. Moreover, Kwok et al. (2014) produced a study of online intervention to investigate the effectiveness of online CBT on family caregivers of people with dementia. Thirty-six family caregivers of people with dementia participated in a 9-week online CBT course. Based on pre- and

post-tests using the Chinese version of the Neuropsychiatric Inventory Questionnaire and two domains of the Revised Scale for Caregiving Self-Efficacy, it is clear that there was a statistically significant reduction in family caregivers' distress after receiving the online intervention.

However, previous literatures focus on specific Chinese-speaking populations including the elderly, Chinese nurses, family caregivers of people with dementia, Chinese immigrants, secondary school teachers, and traumatised persons, while none pays attention to Chinese-speaking international students. As stated earlier, with the global spread and communication of culture and education, an increasing number of international students who speak Chinese choose to study overseas. Those international students from Chinese-speaking countries are exposed to many challenges or difficulties, and experience mental health problems like low mood, stress, anxiety and depression. Previous researches have suggested that the stigma of mental health problems, which includes embarrassment and losing face, can prevent Chinese-speaking international students from seeking help with professional mental healthcare services (see Chapter 2). Therefore, further research investigating the efficacy of low-intensity CBT resources for use with Chinese-speaking international students could be implemented and prove beneficial, which can enhance the culturally sensitive and person-centred nature of cCBT resources.

3.3 How the CBT model has been modified to address the needs of Chinese-speaking populations

A related issue in the current research project is whether Chinese-speaking international students have different ways of experiencing and communicating mental health problems, for example, anxiety and/or depression. However, it has been suggested that existing diagnostic models reflect an overly Westernised view of illness, and few diagnostic resources and self-help resources have been translated into other languages, like Chinese (Gellatly et al., 2007). It may be that the content of any Westernised CBT resources needs to be culturally adapted to address and engage other ethnic and cultural groups, including Chinese-speaking populations. This may involve adaptation to better fit Chinese-speaking

populations' lifestyles, as well as changes to reflect different understandings and expressions of difficulties and distress.

As stated previously, CBT is usually adopted as the primary intervention, with minimal therapist or support worker involvement. Furthermore, CBT resources for mental health problems have been primarily developed to improve access to, choice and availability of evidence-based treatments. A reduction in the costs related to therapist treatment has also been identified (Kaltenthaler and Cavanagh, 2010). Despite these positive characteristics and much improvement of CBT, the direct importation of CBT resources into Chinese culture may still face many challenges (Lin, 2002; Shen et al., 2006).

The operational requirements and core principles of CBT resources are developed on the basis of the Western individualistic world view. This promotes the affected people's autonomy and ability to change. The need for self-development is also a focus. However, these values seem irrelevant to Chinese collectivistic culture, in which the needs of the individual come after the needs of the external community (Liu, 2009). Specifically, based on the mental health concepts in Chinese culture discussed earlier and previous mental health related studies in Chinese settings, it is suggested that Chinese individuals who come to counselling prefer to have a quick fix to their problems, such as immediate and practical solutions (Kam and Ng, 2009). Kam and Ng (2009) also stated that such Chinese clients are more used to analysis of their physical or practical problems rather than the expression and sharing of their inner thoughts and feelings. Moreover, emotional and affective feelings are rarely mentioned among these Chinese clients. These feelings tend to be presented through individuals' physical complaints or complaints about their interpersonal relationships (Liu, 2009; Kam and Ng, 2009).

In addition, Chinese people have great respect for professionals, authority and experts. Consequently, the directive counselling approach arranged by professionals seems to be preferable and acceptable to Chinese users. In other words, Chinese people, experiencing problems and difficulties, prefer an educational model since they are used to occupying the "student" role while the counsellors playing the "teacher" role (Kam and Ng, 2009). Under these influences, the Chinese cultural adaptation of CBT resources could adopt an educational model to teach Chinese clients various self-care skills, such as teaching relaxation techniques, setting up sustainable goals, receiving assertiveness skills and rebuilding their social network (Kam and Ng, 2009). These culturally adapted CBT

resources could involve a range of topics, including the CBT aspects of interconnection between thought, emotion and behaviour, and different styles of dysfunctional thinking. Ways of relieving stress and topics covering depression, assertiveness and a sustainable lifestyle can be also discussed. These culturally adapted resources could help Chinese clients to rebuild positive thinking and behavioural patterns.

Within the currently available limited studies, it is suggested that CBT seems to be the viable resource to be adapted to meet the specific preferences and needs of Chinese people with mental health problems. A study, produced by Wong and Poon (2010), attempted to examine the effectiveness of a culturally attuned CBT group treatment for Chinese parents with children with developmental disabilities in Melbourne, Australia. In this study, fifty-eight participants were randomly assigned to the culturally attuned CBT group treatment or the waiting list control group. Several changes and modifications were identified and made in the culturally attuned CBT group treatment. For example, all materials used in the treatment were translated into Chinese. All key words relating to psychological points and CBT content were translated into simple, common and colloquial language to counter potential cultural differences in language expression. For example, “automatic thoughts” or “altered thoughts” can be rephrased as “thought traps”. Furthermore, in order to meet the Chinese cultural preference for professionals and experts, the therapists involved could take much more active positions throughout the treatment period (Wong and Poon, 2010).

The levels of improvement between the two groups were compared by using ANCOVAs. The differences in General Health Questionnaires-12 (GHQ-12), Parenting Stress Index-Parent Domain (PSI-PD), Quality of Life Enjoyment and Satisfaction Questionnaire-18 (Q-LES-Q-18) and Dysfunctional Attitude Scale (DAS) between participants from the culturally attuned CBT group treatment and the waiting list control group were compared (Wong and Poon, 2010). After 10 weeks treatment, participants receiving the culturally attuned CBT group treatment indicated significant improvement in GHQ-12, PSI-PD and Q-LES-Q-18 scores, but not in DAS score. These findings suggest that the culturally attuned CBT group treatment can help participants to significantly improve their general health and psychological well-being (Wong and Poon, 2010).

Based on Wong and Poon’s (2010) study, the suggestion that Chinese people prefer a counsellor or therapist to take the position of authority during the treatment has been

supported. Consequently, when directing CBT-related interventions to the Chinese-speaking population, their preference for professionals and experts, and needs for an educational model should be concerned (Kam and Ng, 2009; Wong and Poon, 2010).

According to previous literature relating to the core principles and operational guidelines of CBT, one of the major goals of CBT is to recognise dysfunctional beliefs and try to replace them with more positive and balanced alternative beliefs (NICE, 2011). For instance, when someone suffering from depression, the assumption is that the depressed feelings are likely to be mediated by negative core beliefs such as: “I am not good enough”, “I am useless, and I cannot do anything right”, and “how to deal with almost everything” (Williams and Garland, 2002). CBT resources help depressed people to identify that such automatic beliefs are unhelpful, unrealistic and irrational, and to instead replace these automatic beliefs with more balanced and adaptive beliefs like: “my friends like me, and sometimes I am really good” and “I can do things right if I try my best to work on them, and even if I cannot deal with them occasionally, it does not mean that I am not good and a useless person” (NICE, 2011). Based on Western cultural reference, core beliefs such as “I must be good to everyone around me”, “anger is bad” and “I cannot say no, which means I am useless” are known to be often incorrect and unhelpful, because they place unrealistic demands on individuals, and thus may lead them to experience symptoms of anxiety and/or depression. With reference to the nature of collectivistic values in Chinese culture (see Chapter 2), challenging these core beliefs prematurely may result in identity crisis and even further anxiety and/or depression. Chinese clients may regard these beliefs as part of their cultural heritage and collective cultural awareness. Under these circumstances, it would be better for the therapist working with the Chinese client to find more flexible and acceptable versions of culturally rooted beliefs (Wong and Poon, 2010).

3.3.1 Cultural adaptation for Chinese-speaking international students

Regarding modifying the CBT model to fit the needs of Chinese-speaking international students, the unique and specific thoughts and feelings about mental health problems among this group of students should be identified. Earlier, Liu’s (2009) research has developed culturally sensitive programming recommendations to improve collaborative efforts between academic staff, faculty, health providers, and mental health support

workers within universities in order to help Chinese international students more effectively. Based on an overview of Liu's (2009) study, several points have been emphasised by mental health support workers to provide rational interventions for Chinese-speaking international students with problems and difficulties when studying overseas.

Firstly, it has been discussed that some problems or difficulties, such as academic difficulties, interactional problems and mental health problems, experienced by Chinese international students, may result from cross-cultural differences between their home and the host country (Yip, 2005; Liu, 2009). Based on the cross-cultural differences reviewed by Liu and colleagues (2009), introverted Chinese people are encouraged to be self-controlled, humane and forgiving in their interactions with others. By contrast, extroverted Western people emphasise the expression of their desires and emotions, and the assertion of their own functions or rights (Yip, 2005). When such introverted Chinese-speaking students are exposed to the totally different Western extroverted cultural environment, a strong sense of mental discomfort and psychological shock can be experienced. Chinese-speaking international students could experience feelings of confusion, discomfort and mental exhaustion, which has been viewed in Chapter 2. Therefore, when providing treatments, the development of reasonable cultural integration should be considered. It is believed that Chinese international students may report lower levels of stress and better cultural adjustment when they develop a high degree of identification of both the host and home culture (Liu, 2009). That is to say, if Chinese international students can maintain their own culture and also participate in Western culture, good cultural integration could be achieved. Taking this into consideration, therapists should help such Chinese students to build up cultural competence, whilst appreciating their home culture and functioning in the host culture, without focusing solely on assimilation and seamless cultural adjustment (Liu, 2009).

Furthermore, because of Chinese-speaking international students' lack of awareness of the use of mental health therapies and services, they prefer to seek medical help for physical complaints rather than seeking support from mental health therapies or services (Liu, 2009). Consequently, CBT support workers could attempt to eliminate these Chinese students' sensitive and unreasonable awareness of their mental health problems, and to increase such students' awareness of the available resources to normalise their negative experiences.

They could also provide this group of students with a rational and complete understanding of their physical complaints, and should determine whether these Chinese students are experiencing mental health problems when complaining about physical symptoms. Since Chinese people often report negative perceptions towards mental health services and psychotherapies (Kam and Ng, 2009; Liu, 2009), CBT courses and resources could be conducted in a more relaxed and informal style, without mentioning too much about the technical terminologies of psychological content and mental illness (Liu, 2009).

In addition, because of Chinese-speaking students' sense of self-control, self-absorption and self-transcendence, CBT resources could teach these Chinese students some useful and effective self-help skills, including self-relaxation, self-appraisal and positive self-psychological implication techniques. CBT workers should also focus on the specific problems described by students, evaluate whether the reported problems are arisen from particular sources, such as interpersonal relationships, homesickness or academic performance; and then work on such sources in order to provide students with effective support. Finally, since English language barriers appear to be one of the most challenging issues for Chinese-speaking international students (Liu, 2009), support workers who speak Chinese could be involved in CBT training courses to reduce the tension and discomfort caused by limited English language skills.

3.4 Chapter summary

Previous work on the need to culturally adapt CBT treatments for Chinese-speaking populations has been discussed. However, no studies to date have used culturally adapted cCBT resources for Chinese-speaking international students. Such packages might provide an effective intervention for students facing low mood and anxiety. Gellatly et al. (2007) suggested that the offer of such resources is more effective when guidance/support is provided.

The current research project will test the delivery of an educational life skills package, *Living Life to the Full* (LLTTF) – Chinese version, with the option of Mandarin and Cantonese Chinese language resources. The LLTTF course teaches key life skills and is based on an existing CBT model with a strong educational focus. The content has been

evaluated as a series of face-to-face classes (McClay et al., 2015). The free-access English language website is widely used with just under 30 million hits a year. The focus group study and pilot RCT study aim to clarify many areas of uncertainty in the Chinese version of the LLTTF course that need to be addressed before moving to a future larger substantive study. For example, these include the ability to: recruit Chinese-speaking international students, organise focus groups to address the understanding of depression and attitudes towards online intervention and support types required, deliver the Chinese version of the course and support the course, and gather baseline and follow-up data on symptoms of anxiety and depression.

3.4.1 Aims of the thesis

The aim of this research project is to recruit Chinese-speaking international students based in the West of Scotland experiencing symptoms of depression and/or anxiety. This study will include both those diagnosed with depression and those with raised mood scores without a formal diagnosis. The research has two stages:

Stage one

A focus group study will investigate Chinese-speaking international students' understanding of depression and anxiety. The study will also explore their attitudes towards the online intervention (the Chinese version of the LLTTF package), and support types required, which can help to adapt the LLTTF package (Chinese version) to fit Chinese-speaking international students' lifestyles.

Stage two

A pilot RCT study aims to investigate take-up, drop-out and completion rates of the online course, and the completion rates for data collection. Secondary outcomes will be mood ratings at three months. The study will use changes in the Patient Health Questionnaire 9 (PHQ-9) (Spitzer et al., 1999) and Generalised Anxiety Disorder 7 (GAD-7) (Spitzer et al., 2006) scores to provide data relating to the effects of the intervention on depression and anxiety levels. In this study, the PHQ-9 and GAD-7 are the chosen primary outcome

measures for the future substantive RCT and provide valid and reliable measures of depression and anxiety. The measures will provide an indication of efficacy. Evidence that changes in depression and anxiety levels between the intervention and control groups can be also observed. The specific research questions of this study are outlined below.

3.4.2 Research questions

- a. Is the study design feasible: is it possible to recruit Chinese-speaking international students from University settings, randomise participants and collect data at baseline, 3 months and 6months?
- b. Are there any changes in the PHQ-9 and GAD-7 scores after treatment?
- c. To what extent will participants adhere to the online intervention?
- d. Is the LLTTF package acceptable to Chinese-speaking international students?

By gathering information about uptake, retention, ability to gather data, and also obtaining an estimate of treatment effect, it will be possible to complete a power calculation to estimate the sample size required for the future substantive study.

Chapter 4: Development of the website resources

4.1 Introduction

This chapter will briefly review the key points raised in the thesis so far which have informed the development of the proposed computerised CBT (cCBT) self-help resource for use in Chinese-speaking international students with mental health problems, such as low mood, stress, anxiety and depression. It then describes the modification of the online materials.

In Chapter 3, NICE guidelines relating to the treatments for anxiety and depression have been discussed. These provide the theoretical and evidence base for the benefits of using computerised self-help approaches (NICE, 2011; 2013). This and other reviews suggest the benefits of using a cognitive behavioural therapy (CBT) model.

Computerised CBT (cCBT) approaches have been widely developed and evaluated in the English language, and the systematic review will be completed as a part of the current thesis (Chapter 5) to investigate the efficacy of low-intensity CBT resources for use in Chinese-speaking populations, especially for Chinese-speaking international students.

Chinese-speaking international students have particular needs related to leaving their country of origin, facing new cultures as well as courses, and are known to have high levels of depression and/or anxiety (Chapter 2). Therefore there is a need to create and test a website designed for Chinese-speaking international students.

To achieve this, content from a pre-existing widely used free-access website was used. *Living Life to the Full* (www.lltff.com/www.livinglifetothefull.com) is a widely used and recommended website. It is written by my supervisor (Professor Chris Williams), and is made available via a charity. It is highly recommended by a variety of health services, social services and charities across the UK and is the most recommended web resource for low mood and depression in NHS Trusts in England (Bennion et al, 2017), with wide usage across many parts of the world. In the last 12 months it received almost 30 million hits (October 2015) and had over 244,000 currently registered users.

The site uses a pragmatic and accessible model of CBT called the Five Areas approach (Williams and Garland, 2002). The site is designed to provide support for bibliotherapy (book-based CBT) and its content has been evaluated in three studies.

1). An evaluation of the website was based on the comparison of three self-help CBT tools: the *Beating the Blues* computer programme, workbooks on overcoming depression and anxiety, and the *Living Life to the Full* free access internet website (Pittaway et al., 2009). This study carried out in London by the voluntary sector organisation MIND investigated the efficacy and feasibility of three methods for the delivery of self-help CBT for mild to moderate depression. Results indicated that there were significant clinical benefits for participants treated with all three different tools delivering self-help CBT, and there were no differences in outcomes between these three tools. Pittaway et al.'s (2009) study has supported the feasibility and efficacy of delivering self-help CBT using a new and innovative service model.

2). A second study using a randomised controlled trial investigated the content of the key components of one of the two courses available on the site – the Overcoming Depression and Low Mood books (Williams et al., 2013). This study tested the same resources offline using printed books supported by a psychology assistant. The study compared the impact of a guided self-help CBT book (GSH-CBT - “Overcoming Depression: A Five Areas Approach” book) to the control receiving treatment as usual (TAU) using the BDI-II score at 4 months. Participants treated with GSH-CBT were also required to have 3 - 4 short face-to-face support appointments totaling up to 2 hours of guided support. Based on the statistical analysis, the treatment was proved to be highly acceptable and effective to participants, and there was clear evidence of reduced clinical deterioration in mood for those receiving GSH-CBT. Williams et al.'s (2013) study has confirmed the importance of guidance in improving the effectiveness of bibliotherapy.

3). A third study tested the key elements of the main course available on the site - *Living Life to the Full* (LLTTF) (Williams et al., 2014). In this study 142 people were recruited from community and offered access to the same resources delivered in class format. LLTTF class sessions lasted 1.5 hours and covered a variety of guided self-help topics teaching life skills for overcoming anxiety and depression. The study compared with a delayed treatment control, and found that low-intensity, bibliotherapy-based CBT classes are significantly effective in improving mood, anxiety and social function. The study also demonstrated cost-effectiveness of LLTTF intervention which provides an alternative

treatment option for use in primary care and community settings (Williams et al., 2014).

These researches together suggest that the content of the web course can potentially be helpful. To date, no other studies of the LLTTF site have been conducted. Moreover, no studies, to date, have used the cCBT such as the LLTTF site which has been culturally adapted for Chinese-speaking international students (see Chapter 3).

The site was also chosen because it fulfils the recommended requirement for a cCBT product as defined by NICE: it should act as an effective tool by focusing on motivating learning, monitoring progress and using a mix of encouragement coupled with pragmatic and specific planning to provide significant benefits to people's mental health with the least intensity (Williams and Martinez, 2008).

The site was chosen therefore on these three criteria:

- 1) Researches to date suggest the site and its components are helpful for the treatment of depression and anxiety;
- 2) Content fulfils the required approach recommended by NICE (2011);
- 3) Convenience: the site content is available to be modified and evaluated for the current research.

Finally, it was decided to focus on the main course on the site- *Living Life to the Full* (LLTTF), rather than the *Overcoming Depression and Low Mood* course. This is because the latter course was only partially available online, and the style was felt to be less appropriate for students. In addition, the nine core booklets for the LLTTF course had already been previously translated into simple Chinese script by a professional medical translation company.

Aim: review and modify the nine current modules making up the LLTTF online course so that the content is appropriate for Chinese-speaking international students experiencing symptoms of anxiety and/or depression.

4.2 The *Living Life to the Full* online course

Living Life to the Full (LLTTF) is a web-based life skills self-help package that can be

accessed free of charge from an individual's home, library or workplace via a broadband internet connection. The package is a life skills course aiming to provide easy access to high quality, practical and user-friendly training in life skills. The content of this course teaches key knowledge in how to deal with and respond to issues/demands which individuals can meet in their daily lives. The content has been evaluated as a series of face-to-face classes (McClay et al., 2015; Williams et al., in preparation). The free-access English language website is widely used with under 30 million hits a year. Based on the previously discussed randomised controlled trial (Williams et al., 2013), the written version of these LLTTF materials have been proven to be effective in the treatment of depression in a primary care population.

4.2.1 The content of the existing LLTTF course

As previously described in Chapter 3, CBT is a short-term, problem-focused psychosocial intervention, helping to change how people think (“Cognitive”) and what people do (“Behavioural”). Content of CBT has been especially created to address issues of accessibility and ease of understanding. Williams and Garland (2002) argued that the traditional language of CBT is highly technical and often inaccessible to those who have no ideas about psychological-related knowledge, and have not received a specialised training. For example, in the standard classic CBT model, terms such as faulty information processing, thinking errors, negative automatic thoughts, overgeneralisation, schemata, dysfunctional assumptions, selective abstraction, dichotomous thinking, minimisation or magnification are often used to describe unhelpful thinking styles (Williams and Garland, 2002). The reading age of these terms is around age 17 (Williams and Garland, 2002). However the reading age of the Five Areas language is around age 12. Therefore, there is a need to have more easily understood terms.

In response to those challenges and to improve the access, availability and choice of evidence-based CBT resources, the Five Areas approach has been developed as a more accessible and pragmatic model of management and assessment of the use of CBT resources (Williams, 2001). The aim is to communicate fundamental CBT principles in clear and simple language. The Five Areas approach provides a new way of explaining and communicating the evidence-based CBT approach for use in non-psychotherapy settings.

The LLTTF course consists of 9 modules:

1). Welcome module

Introducing the course, what it consists of and how to use it. This module introduces two key worksheets – a Planner Sheet and a Review Sheet. The Planner Sheet aids making plans, for example of when to complete a module, or try out a suggested activity. The Review Sheet then helps reflect a week later (or any time after the Plan) on how the Plan works.

2). The Five Areas model

The Five Areas model is described as a vicious circle, including life situation, relationships and practical problems, altered thinking, altered emotions, altered physical feelings, and altered behaviour or activity levels (Williams and Garland, 2002, p. 176). It aims to help people summarise a variety of difficulties and problems when individuals experiencing mental health problems. This is an essential of the first module, as it provides a model to help the person to work through the course with a rationale for why they feel as they do.

The content of the first module: Why do I feel so bad?

Situation, relationships and practical problems

Many practical and interpersonal relationship problems faced by individuals can create their upsets and difficulties. These problems include debts, housing, problems in interaction with others, life events like deaths, redundancy, divorce, or court, and many other difficulties (Williams and Garland, 2002). For international students it might include leaving home, finding accommodation, making friends, paying fees, completing course work and passing (or failing) exams. What people think about those life situations, events, interpersonal relationships and practical problems may affect how they feel emotionally and physically, and also alter their behaviours.

Altered thinking

Unhelpful thinking style is seen as an important part of the Five Areas model since it can reflect habitual, repetitive and consistent thought patterns that occur automatically during times of experiencing mental health problems (Garland et al., 2002). Under this influence, life events and situations can be misinterpreted. As difficulties are solely focused on and blown out of proportion, and individuals' own strengths and abilities to cope are overlooked or downplayed, people may become distressed. Recognising and challenging the patient's unhelpful thinking patterns is an important first step in the process of change.

Specifically, people with depression think more negatively and extremely about things when compared to other clinical groups and controls (Wright, Williams and Garland, 2002). They find it is easier to recall negative experiences, and overlook the things that they have achieved. These experiences and thoughts can lead to altered behaviour, such as unhelpful behaviours, avoidance of interpersonal contacts, and reduced activity (Garland, Fox and Williams, 2002).

Altered emotions

What people think about the practical situations or problems can affect how they feel emotionally. Everyday terms are used for feelings including “down”, “low”, “blue”, and “fed-up”; individuals experiencing anxiety, stress, worry and fear always report feelings of “hassled”, “nervous”, and “tense”. Also, other mood states, such as feeling numb, with no capacity for pleasure or enjoyment, experiencing irritable or angry, and feeling embarrassed or guilty, are usually described (Williams and Garland, 2002, p.177). However it was not known whether the emotional terms used would be easily recognised or responded to by Chinese-speaking international students.

Altered physical symptoms

Physical feelings can change when individuals experience mental health problems like low mood, stress, anxiety and depression. According to Williams et al.’s (2002) summary, these can include all the altered physical/somatic/endogenous symptoms of depression previously described in Chapters 1-3 (Williams and Garland, 2002, p.177). These physical changes result from altered thinking and emotions. The approach is consistent with the integrated holistic approach often seen by Chinese people who see thoughts and feelings as integrated rather than separate.

Altered behaviour

Several different patterns of altered behaviour are used in the LLTTF course:

- 1). Reduced activity in depression - identified by asking “What things have you stopped doing since you started feeling anxious or depressed?”, which may reveal putting off usually appreciated activities, inactivity, procrastination, and social withdrawal (Williams and Garland, 2002). In other words, extreme and unhelpful thoughts can lead individuals to reduce or stop doing activities which previously gave them a sense of enjoyment, pleasure or achievement. This reduced activity, together with avoidance may lead the person to feel worse and worse as a part of the vicious cycle.

2). Unhelpful behaviours- a second pattern of altered behaviour is when people start doing things that actually worsen their emotional and physical feelings. For instance, individuals with anxiety or depression may try to prevent and block adverse emotional states such as shame, fear, anger, anxiety or depression by drinking, smoking, pushing people away, excessive online game playing, or refusing to go out (Garland, Fox and Williams, 2002). These unhelpful behaviours, in turn, act to keep the anxiety or depression going.

As discussed earlier, some examples have shown how practical life situations, thoughts, emotional and physical feelings and altered behaviour link together. These five areas are interdependent, and each exerting an influence over the others, seen as a mutual influencing dynamic cycle. The first module therefore introduces this model, and encourages the person go through it to complete their own five areas assessment.

Additional course modules

Using the Five Areas CBT model for treatment

The Five Areas model provides a useful and suitable structure to help identify and select clear clinical targets for change. Making changes in any one of the five areas can lead to benefits in all. This is achieved by working through the remaining 7 modules of the LLTTF course.

Module 2: I can't be bothered doing anything

Here the focus is on helping people focus on their reduced activity. The concept, that the worse you feel the less you do, and the less you do the worse you feel, is introduced. Checklists (printed as worksheets) ask the person work through the module to reflect on what activities they have reduced or stopped, and the impact on them of this. People then learn a 7-step problem-solving plan to plan ways of increasing activities.

Module 3: Why does everything always go wrong (altered thinking)

The five areas vicious cycle forms the basis for this module. The links between what

people think and how they feel emotionally and physically, and what they do are reinforced. An example of trying hard not to think about a polar bear is given as a way of illustrating that when people are told “try not to think about it”, it often leads them to think about that topic even more. This illustrates that an alternative approach is needed. This module teaches the use of two key worksheets: the Bad Thought Spotter and the Amazing Bad Thought Busting Programme (ABTBP).

Module 4: I’m not good enough (low confidence)

This topic is important to students because confidence can alter when new topics are undertaken that seem difficult, or there are other issues that damage confidence. The module covers the origins of confidence, and discusses how confidence can change over the lifespan. It helps the person using the module to consider their own inner self-talk, and how this impacts on them. A task encourages consideration of someone felt to be confident. A plan is then made to “act” and build in specific activities/behaviours that aim to help the person become a more confident “you”.

Module 5: How to fix almost everything

A problem-solving module teaches the “Easy 4 Step Plan (E4SP)” which shows participants how to break down problems and tackle small parts of the problem in order to overcome challenges. The module focuses on resolving practical problems that users may be experiencing. This might include issues to do with coursework, house issues, friendships, money or other external problems.

Module 6: The things you do that mess you up

People often respond to upset by trying to react to cope (Bushman, Baumeister and Phillips, 2001). Sometimes such responses can be helpful, and at other times unhelpful and backfire causing more problems. For example, Chinese international students may choose to isolate themselves from English-speaking colleagues if they feel their English language skills are limited. Other unhelpful behaviours might include drinking too much. This module includes tick lists to self-check common problem areas, and then helps encourage the person to make plans to reduce their unhelpful behaviours. Again, this uses a

problem-solving approach and focuses on one problem at a time with a stepwise plan. The 7-steps are (Williams et al., 2002):

Step 1 Identify the unhelpful behaviour to be tackled and define it as clearly and precisely as possible

Step 2 Think up as many solutions as possible

Step 3 Consider the advantages and disadvantages of each of the possible solutions

Step 4 Choose one of the solutions

Step 5 Plan the steps needed to carry it out

Step 6 Carry out the plan

Step 7 Review the outcome

The LLTTF course is designed to be easily accessible and understood. This is achieved by omitting complicated CBT terms and replacing these with simpler language, as seen in the titles of each module. The language used in the modules includes everyday terms to describe symptoms such as stress, distress and low mood, rather than more formal diagnostic terms like depressive disorder and anxiety. This simple way of communicating CBT is highly accessible (Martinez et al., 2008) and effective (Sharpe et al., 2011; Grover et al., 2011).

Module 7: Are you strong enough to keep your temper?

Participants learn to recognise the things that cause them to feel irritable or angry (their “buttons”) and the physical symptoms they experience when they feel angry. They are then taught techniques for managing their anger and reacting differently to challenging people and situations.

Module 8: 10 things you can do to feel happier straight away

The final module teaches key lifestyle choices that can improve mood, including healthy eating, exercise and closeness with others.

4.2.2 Modifying the *Living Life to the Full* (LLTTF) package

The course update into Chinese was already planned separately by the developers of the

course. The nine linked course books aligned to the 8 modules described above plus a general supporting “how to use the course” book called “Write all over your bathroom mirror” have already been translated into simple Chinese script. The same had occurred to the linked course worksheets. This work was done separately by a medical translation company.

Provisional discussions with Chinese-speaking international students indicated the need to have the course available in the following languages:

- Simple script and Mandarin audio
- Traditional script and Cantonese audio (for those mostly from Hong Kong who speak Cantonese)

The module slides were then independently translated into both Cantonese and Mandarin. Two column tables described the English language text in the left column (together with additional notes to amplify or clarify meaning). English sayings and phrases were modified at that stage (for example Module 8 describing food which originally described as porridge and muesli). Scripts of each slide and module were then independently translated by a Cantonese and Mandarin speaking postgraduate student. Audio scripts were then recorded for each module by student colleagues, and recorded using a digital recorder in Mp3 format. The new course was uploaded onto a separate version of the *Living Life to the Full* based at www.lltff4china.com, and using the new web platform for delivery created for the updated version of the course. In addition, the course had accompanying weekly email supports for 12 weeks, and these were also translated into simple Chinese script.

Overall, four different versions of the course were created for the Chinese LLTTF website.

They are:

- Traditional Chinese script with Cantonese audio
- Simplified Chinese script with Mandarin audio
- Traditional Chinese script with Mandarin audio
- English script with English audio

Screenshots of the online LLTTF package (Chinese version) are shown in figures 4-1, 4-2 and 4-3 below:



Figure 4-1 The screenshot of the online course



Figure 4-2 The screenshot of the home page



Figure 4-3 The screenshot of the planner sheet

4.2.3 The support model

As described in Chapter 3, low-intensity courses show the best results when supported by support workers (Gellatly et al., 2007). The support model in LLTTF uses three components:

- 1). Help in making plans: Users are encouraged to make an individualised plan at the end of each module using a plan, do, and review structure (Williams and Chellingsworth, 2010) in order to apply techniques learned in the modules.
- 2). Automated weekly support emails reminding participants to use the site, and describing recommended next modules were used. These optional emails could be turned on (default) or off by participants using their course dashboard.
- 3). Support from a support worker. Support from a support worker can generally improve outcomes for low mood and depression when self-help approaches are used. At the stage of course creation, the researchers were uncertain what types of support might be of interest and use to Chinese-speaking international students. In Chapter 6 the researcher explores the added support needs requested by users (phone, face-to-face/online support, English/Mandarin/Cantonese language support). This will also inform the support offered in the later pilot RCT study.

4.3 Chapter summary

In this chapter the key points, raised in the thesis to date, that have informed the development of the computerised CBT (cCBT) self-help resource, *Living Life to the Full* (LLTTF) – Chinese version, were described. The rationale for the use of the Five Areas model in the development of this course was described as the creation of the first version of the course. The Chinese version of the LLTTF intervention is an online set of materials including e-books, printable worksheets – together with linked modules. The eight modules teach a range of CBT-based life skills. At this stage however relatively small changes in terms of cultural adaptation were made.

Chapter 5: The efficacy of low-intensity CBT resources for use in Chinese-speaking populations: a systematic review

5.1 Introduction

Psychological therapies are recommended by treatment guidelines for a range of common mental health problems (Clark, 2011; NICE, 2009). In particular, Cognitive Behavioural Therapy (CBT), helping to change how people think (“Cognition”) and what people do (“Behaviour”), can be seen as an effective psychological intervention for many common mental health problems like low mood, anxiety and depression (NICE, 2011). CBT is also the most recommended form of psychotherapy across a range of NICE reviews. Access to evidence-based psychological therapies, however, varies significantly and can involve a significant waiting time due to demand also, resulting in problems with accessing services, and a scarcity of accredited CBT therapists due to an inequitable geographic distribution (Shapiro, Cavanagh and Lomas, 2003). These issues still continue, with waiting list pressures across services in Scotland (3 HEAT targets for the development of mental health services in Scotland, 2006), and the rest of the UK.

In order to increase access to psychological therapies for people experiencing mild to moderate mental health problems, it has been proposed that shorter, focused interventions with more limited practitioner support are provided - so-called low-intensity interventions. Low-intensity interventions have firmly embedded into healthcare services (NICE, 2011) with CBT self-help resources such as books and computerised courses being recommended as one of the first steps into care in mental health services for depression and anxiety (NICE 2009). According to the NICE Guidelines (2011), low-intensity interventions provided within stepped-care models can provide the least restrictive intervention and are widely used at Step 2 within clinical services.

Most low-intensity interventions are based on the principles of cognitive behavioural therapy (CBT) and are usually provided with support from professional healthcare services. Low-intensity interventions include focused short manualised interventions, such as behavioural activation, group therapy as well as bibliotherapy, and computerised CBT (cCBT) (Kaltenthaler and Cavanagh, 2010). The latter two interventions can be used at

home in privacy, and therefore may be of particular interest for the Chinese-speaking population who often fail to seek direct treatments for their mental health difficulties.

Previous chapters have identified the prevalence of common mental health problems such as anxiety and depression, the potential for CBT to be provided as a form of therapy, and also the reluctance of Chinese people to seek for formal depression treatments. Low-intensity interventions offer the possibility of widening access to support for this population, and the evidence base for low-intensity CBT resources in Chinese-speaking populations will be reviewed in this systematic review. This systematic review therefore specifically examines low-intensity CBT resources, such as CBT manuals, computerised CBT, and guided self-help resources, for use in Chinese-speaking populations.

According to a report of guidance for carrying out or commissioning reviews produced by the Centre for Reviews and Dissemination (CRD), the systematic review is “a review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyse data from the studies that are included in the review” (CRD, 2001). Referring to types of systematic review, different research questions require different study designs, which generate different types of systematic review. Based on variations occurring in research questions, primary study designs, methods for synthesis, approaches to being systematic, types of evidence included, and three aspects of evidence for different questions, namely treatment, prognosis and particular perspective, have been identified and categorised (Gough, Thomas and Oliver, 2012). This review focuses on a specific therapeutic approach -- the low-intensity CBT, and specifically looks at studies of common mental health conditions presented by Chinese-speaking populations.

Narrative synthesis will be used in this systematic review. It refers to an approach to the systematic review and synthesis of findings from multiple studies such as in the use of meta-analysis to interpretative qualitative approaches such as meta-ethnography. These rely primarily on the use of words and phrases to summarise and explain findings of the synthesis (CRD, 2001). Narrative synthesis can be used to synthesise evidence concerning a wide range of questions, such as those relating to the effectiveness of a particular intervention.

5.1.1 Review question

This systematic review will use a narrative synthesis approach to investigate the following question:

What is the evidence for efficacy of low-intensity CBT resources, such as books (bibliotherapy) or online/Internet CBT resources, for Chinese-speaking adults?

Because all papers included are investigating patients with mental and/or emotional related problems, such as PTSD symptoms, depression, stress, low mood or anxiety, efficacy can be defined as improving measures of low mood/stress/anxiety/depression, improving quality of life or improving functioning.

5.1.1.1 Inclusion criteria

Studies that contain quantitative outcome data evaluating the effect of low-intensity web-based or book-based CBT interventions delivered to Chinese-speaking adults, including both standard unmodified CBT resources and culturally adapted CBT materials, were eligible for inclusion.

Inclusion criteria were identified and summarised based on the PICOS criteria (Schardt et al., 2007) outlined as follow:

Population

- I. Chinese-speaking adults,
- II. Adults aged 18 years old or older.

Interventions or exposures

- I. Low-intensity CBT resources,
- II. Web-based or book-based CBT interventions,
- III. Standard unmodified CBT content and CBT content with cultural adaptation.

Comparisons or control groups

- I. The same treatment as the intervention group,
- II. The similar abbreviated treatment or equal amounts of contact hours,
- III. Other psychotherapies.

Outcomes of interest

- I. What interactions,
- II. The demographics of participants,

- III. Types of intervention,
- IV. Effectiveness of interventions,
- V. Any online package,
- VI. Measures used to evaluate outcome (qualitative and quantitative),
- VII. Terminology used across studies to describe mental health and/or emotional wellbeing.

Setting

- I. Worldwide.

Study designs

- I. Randomised controlled trials (RCT).

5.1.1.2 Exclusion criteria

Studies were excluded if they met the following criteria:

- I. Not fulfilling the inclusion criteria,
- II. Testing high-intensity specialist CBT,
- III. Using group therapy,
- IV. Single case studies,
- V. Clinical observations,
- VI. Studies with fewer than 20 participants,
- VII. Studies of interventions for addictions, severe and enduring mental illnesses, personality disorders, eating disorders (i.e. non-mild to moderate problems),
- VIII. No quantitative outcome data relating to reported low mood, stress, anxiety or depression.

5.2 Methods

5.2.1 Search strategy

The initial search strategy involved a search of the following electronic databases: MEDLINE, PsychINFO, EMBASE and Psychology and Behavior. Searches would be limited from 1981 to the date of search (e.g. Jan 2014). Grey literature would be identified using Google Scholar. All languages including English and Chinese were included in the search. Zotero was used to record and manage references.

After screening previous reviews, considering current papers and following discussion with my supervisor and another adviser as well as a member of library staff, the following root terms were used, linked with the Boolean operators “AND” and “OR”:

Cognitive therapy OR CBT OR cognitive behavior

AND internet OR workbook OR short intervention OR stepped care OR low intensity

AND Chinese-speaking populations OR Asian Continental Ancestry Group OR Chinese speaking OR Chinese OR China/ethnology

These would be cross searched with constructs of therapy using root terms therap*, interven*, counsel*, psychother* and treat*; and cross searched with the constructs of outcome using the terms outcome, effective, efficacy*, compar*, trial and evaluat*.

Both English and non-English language papers were included.

In order to obtain additional studies, reference lists of selected studies and reference lists of previous reviews on the topic were also searched. In addition, published conference abstracts were included if identified.

5.2.2 Study selection

Referring to study selection, numerous international groups, such as the International Committee of Medical Journal Editors (ICMJE) and Committee on Publication Ethics (COPE), have published guidelines to ensure various sorts of studies contain all essential information, which are known as instructions for authors and standards of publication. These guidelines include the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) for various sorts of observational studies (clinical studies in surgical disciplines) (Elm et al., 2007), the CONSORT (Consolidated Standards of Reporting Trials) for randomised trials (Altman, 1996; Moher et al., 2001), and the QUOROM (Quality of Reporting of Meta-analyses) for meta-analyses and randomised trials (Clarke, 2000). These guidelines inform authors and investigators what information are required to ensure readers (and reviewers) properly evaluate studies (Brand, 2009, p. 1393).

In the current review, study selection was reported using PRISMA guidelines (Moher et al., and The PRISMA Group, 2009), known as the preferred reporting items for systematic

reviews and meta-analyses, using a flow diagram to show papers remaining at each stage with a list of papers excluded. According to the research of the PRISMA, it is an update of the QUOROM developed in 2005, consisting of a 27-item checklist and a flow diagram (Moher et al., and The PRISMA Group, 2009).

5.2.3 Data extraction

Duplicate abstracts from four databases were identified and excluded. Titles and abstracts were then screened by two independent raters. After title and abstract screening, possibly suitable studies were identified, and all identified studies were independently rated by another researcher. Raters then met to compare all included papers and discussed any discrepancies. Where doubt existed papers were obtained for full review. Papers appearing to meet criteria were retrieved in full, and assessed jointly by raters to make a decision. One paper could not be rated because as an unpublished conference record it could not be obtained by the University library, and the author did not reply to a request for a copy of the paper. Three abstracts relating to a case study, clinical observations and a literature review were excluded in accordance with the previously mentioned exclusion criteria. Another abstract indicating adoption of group therapy was also excluded. Furthermore, the exclusion of a non-English paper was due to lack of the outcome data, and the author failing to reply to a request for more detailed information.

5.2.4 Narrative synthesis

A narrative synthesis approach was adopted to discuss and integrate the findings. There are different ways of creating a summary of findings in a review. In the current review a narrative synthesis approach was used instead of a meta-analysis approach, due to a result of the small number of suitable papers identified and significant heterogeneity in terms of disorder, intervention and evaluation (Popay et al, 2006; Rodgers et al., 2009). The use of a narrative synthesis approach is appropriate, given the aim of this review is to focus on effects and factors impacting on the implementation of low-intensity CBT resources (delivered via booklets and/or computerised/internet based programs) for use in Chinese-speaking populations (CRD, 2009).

Ultimately there were insufficient papers available (8 papers), and these were too heterogeneous to carry out a meta-analysis, therefore, a purely narrative synthesis was adopted (CRD, 2009). According to the guidance on conducting a narrative synthesis in systematic reviews produced by Popay et al. (2006), four main elements of the narrative synthesis process were summarised as follow:

- Developing a theory of how the intervention works, why and for whom,
- Developing a preliminary synthesis of findings from included studies,
- Exploring relationships within and between studies,
- Assessing the robustness of the synthesis.

Specifically, a clear descriptive summary of the papers included was made. Details, such as the study type, sample information, interventions, outcomes and measures, were described (CRD, 2009). The quality of each study involved was also recorded. A narrative description of the relationship within and/or between the studies reviewed was written, incorporating assessment of the strength of the evidence.

5.2.5 Quality assessment

All papers included were assessed for quality using the Clinical Trials Assessment Measure (CTAM-Tarrier and Wykes, 2004). The CTAM was developed using relevant features extracted from CONSORT guidelines. These guidelines were developed to improve reporting of randomised controlled trials and help raters assess validity and reliability of studies included (Moher, Schulz and Altman, 2001; Tarrier and Wykes, 2004). A score out of 100 is calculated based on six subscales: sample, allocation to treatment, outcome assessment, control, treatment description, and analysis. The overall quality of a study can be identified according to the total CTAM score. The author has completed rating on the CTAM for all studies involved.

Risk of bias in RCTs in this review was identified and assessed using the Cochrane Risk of Bias Assessment Tool (Higgins and Altman, 2008), demonstrating the strongest evidence in terms of validity and reliability of RCT studies included. This tool is used to address seven specific domains: sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective outcome reporting, and other issues (Higgins and Altman 2008). The author was not blinded when assessing studies included. Ordinarily, in order to ensure rigour and

validity, studies were assessed to be of “Low risk” of bias, “High risk” of bias, or “Unclear risk” of bias (Higgins and Green, 2008).

5.3 Result

Initially a total of 823 potential studies were identified from the search of four electronic databases. This provided the following number of studies: EMBASE (n=324), MEDLINE (n=137), Psychology and Behaviour (n=42), and PsycINFO (n=320). Reference lists of included papers were searched for further papers, as well as previous reviews on the similar topics. However, no additional eligible papers were found. A large number (n=735) of potential studies were excluded based on author’s examination of titles and abstracts as they did not fulfil the inclusion criteria stipulated for low-intensity CBT resources (delivered via booklets, computer/internet based and/or guided self-help CBT resources) for use in Chinese-speaking populations, as well as duplications across databases. In total, 19 full-text articles were assessed for eligibility, with 8 meeting the stringent eligibility criteria. Among these 8 selected articles, one is published in Chinese, and the others are conducted in Chinese settings. Outcomes are presented in accordance with PRISMA guidance (see Figure 5-1).

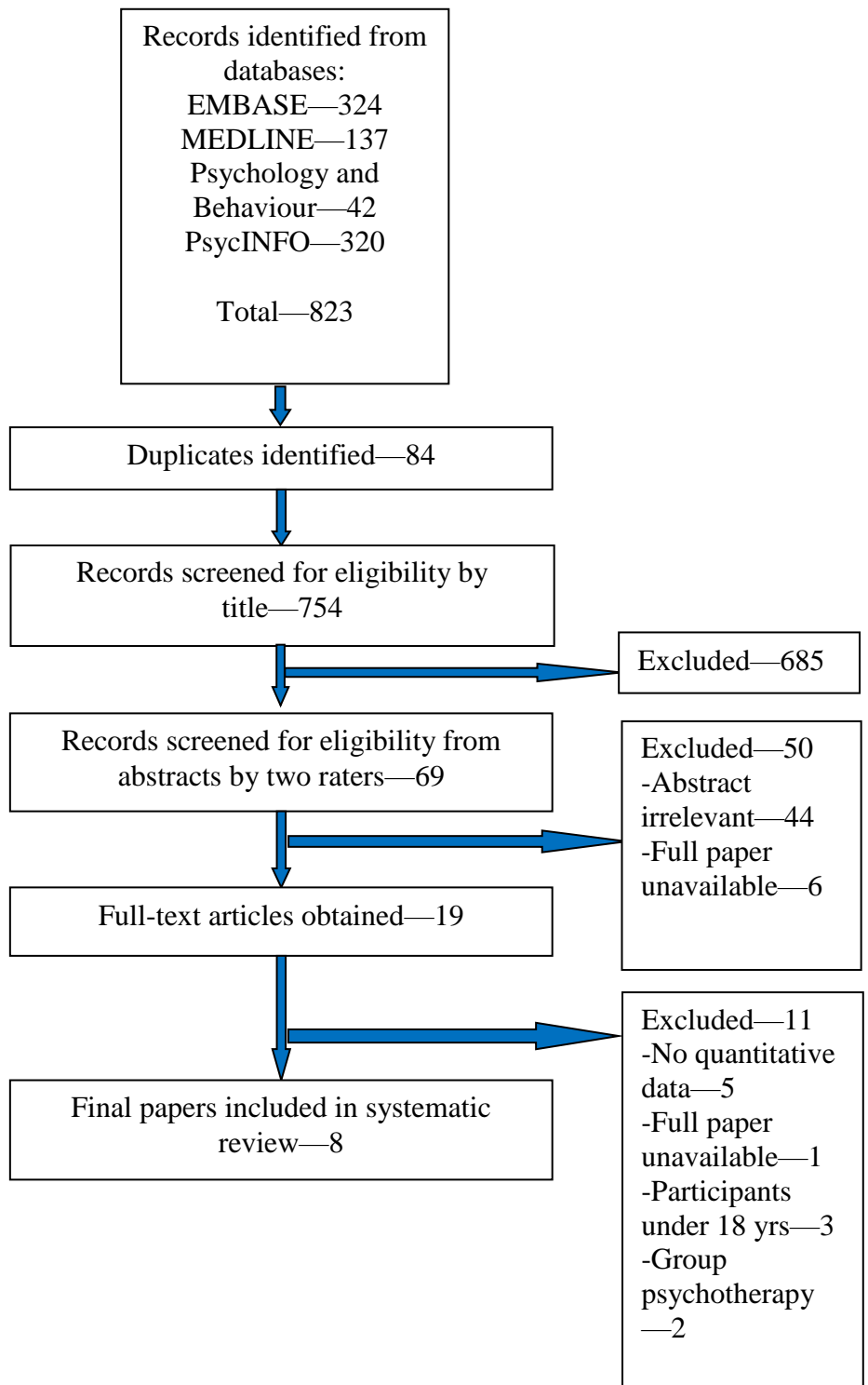


Figure 5-1 Flow diagram of systematic search process

5.3.1 Study characteristics

After reviewing all papers included, interventions are described in Table 5-1. Details of study features are shown in Table 5-2 and Table 5-3. The mean (SD) score on the CTAM is 69.6 (12.5), with a range of 51 to 91.

Table 5-1 Description of interventions used in studies included

Study	Description of Intervention
Wu, Li and Cho (2012)	Brief-CBT Intervention for PTSD Symptoms after a Motor Vehicle Crash in Chinese MVC Survivors – This 4-session Brief-CBT was adapted from a previous manual for PTSD symptoms after physical injury (Bisson et al., 2004). Participants were taught about how to respond stress after a Motor Vehicle Crash (MVC), and the rationale of exposure-based CBT for habituation to and the realistic appraisal of PTSD features caused by the MVC. Participants were then encouraged to describe the MVC in detail, such as their feelings and thoughts; the sights, smells, and noises; and their physically and emotional reactions. A homework assignment was used. The achievements and difficulties over the course of the therapy were discussed in the final session.
Dai et al. (1999)	Eight-week Psychoeducational Intervention for Minor Depressive Symptoms in Elderly Chinese Americans -- Culturally sensitive videotapes in Mandarin Chinese were made based on the “Depression Prevention Course” and handouts (Munoz and Ying, 1993). The eight-week classes involved eight lessons plus a videotape of relaxation techniques. After each class, group discussion was arranged for participants to share their thoughts and feelings about the videos. Homework assignments were included.
Gallagher-Thompson et al. (2010)	Psychoeducational Skill Training DVD Program for Stress in Chinese American Dementia Caregivers -- The SKDVD showed role-playing and a linked commentary by a narrator to teach dementia caregivers (CGs) how to handle difficult behaviours such as stressful family situations. This DVD involved 6 tracks relating to the facilitation of understanding and dealing with problems that produce stress. CGs were required to watch one segment at a time, use a linked workbook, and do the homework assignment included in the workbook. The control condition involved two DVDs with comprehensive information about dementia, such as diagnosis, recognising, treatments, and resulted distress.

Leung et al. (2011)	Brief Cognitive-behavioural Stress Management Program for Work-related Stress in Secondary School Teachers in Hong Kong – A brief three-session CB stress management program was modified from a 10-session CB program which significantly reduced symptoms of depression among adults in Hong Kong (Wong, 2008), based on the Beck’s cognitive model of depression (Beck, 1967). Mini-lectures and group discussions were adopted in the program. Worksheets were involved to enable participants to apply the model in stressful situations.
Wang, Wang and Maercker (2013)	Chinese Version of the My Trauma Recovery (CMTR) Website for PTSD Symptoms in Chinese Traumatized Persons – The Chinese version of the MTR was translated from a self-help trauma intervention program on the basis of social cognitive theory including six modules of social support, self-talk, relaxation, trauma triggers, unhelpful coping, and professional help (Benight, Ruzek and Waldrep, 2008). Interactive components, like pictures, audio segments, video segments, and self-tests, were used to educate participants about trauma-related information and practical coping skills. Participants were also encouraged to take self-tests regularly on CMTR so that they would receive a series of updated charts on their experiences of mental health problems and received treatment.
Choi et al. (2012)	The Brighten Your Mood Program for Depression amongst Chinese Australians -- The Chinese internet delivered CBT program was a modified version of the clinically efficacious sadness iCBT Program (Perini et al., 2009). The program involved six online lessons, a homework assignment after each lesson, regular automatic reminder and notification emails, and weekly telephone contact and secure email with Chinese-speaking support workers. The online lesson would present practice principles used in CBT programs for depression, and part of the content of each lesson was reported in the form of an illustrated story about a depression affected person. Additional written resources taught practical skills.
Tsai and Crockett (1993)	Including Relaxation Training, Combining Imagery, and Meditation for Work Stress in Chinese Nurses – the course consisted of a 90-minute session in each of two consecutive weeks and a follow-up session in the fifth week. The relaxation training involved a presentation relating to sources of stress at work, and the process of relaxation. The control groups would receive equal contact hours and educational lectures. Two reminder letters were

Zhao, Chen and Chen (2002)	sent to participants in both groups during week 3 and 4 to remind about the fifth week follow-up session. Psychological Intervention for Depressive Disorders in the Chinese Elderly – individual CBT and lectures about mental health within the elderly. Group discussions and arranged activities were included in the individual CBT.
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Table 5-2 Details of the study features of papers included

Authors (Date)	N	Mean age	Male (%)	Population Clinical state	Study type	Quality (CTAM)	Intervention groups	Numbers and format of sessions	Drop-out rate (%)
Wu, Li and Cho (2012)	60	39.4	67.9	Individuals with a score of greater or equal to 2 in one or more of the three Impact of Event Scale-Revised subscales at 1-month follow-up after the MVC	RCT	62	1- brief cognitive behavioural therapy; 2- self-help program booklet treatment	4* 90 minute weekly sessions	11.7 (4 from B-CBT, and 3 from SHP)
Dai et al. (1999)	40	73.8	40.0	Respondents screened using the Chinese translation of the CES-D	A pilot RCT	67	1-culturally sensitive videotape lessons; 2-waiting list group using four abbreviated lessons after 8 weeks	8* 25 minute sessions	22.5 (7 from experimental group, and 2 from control group)
Gallagher-	76	58.8	12.9	Individuals screened	RCT	62	1- the skill training	12-week	8.0 (2 in the

Thompson et al. (2010)				using the Chinese version of the CES-D			(SKDVD) intervention; 2- the education DVD (EDDVD) condition	SKDVD contains 6 tracks playing for about 2.5h. The EDDVD has two DVDs with comprehensive information about dementia	EDDVD, and 4 in the SKDVD)
Leung et al. (2011)	124	40.5	63.0	Secondary school teachers with work-related stress screened using the set of questionnaires involved DASS-21, HPLP-II, and DAS-A	A quasi-experimental RCT design	68	1-a brief CB stress management program; 2-waiting list control group	A three-session CB stress management program with mini-lectures and group discussions	16.8
Wang, Wang and Maercker (2013)	197 (103 from	18 yrs and more	21.9	Individuals experienced at least one traumatic event based on	RCT	91	1-a web-based intervention: Chinese My	6-module online intervention	7.1(13 from urban sample, and 1from

	urban, and 94 from rural)			DSM-IV, and reported at least two PTSD symptoms in the trauma screening questionnaire			Trauma Recovery (MTR) website; 2- a waiting list control condition	including 27 audio segments	rural sample)
Choi et al. (2012)	63	39.0	20.0	Individuals met DSM-IV diagnostic criteria for a diagnosis of current major depressive episode, excluding individuals experiencing a psychotic mental illness or severe symptoms of depression on the CB-PHQ-9	RCT	81	1- an immediate treatment group of the Internet delivered CBT (iCBT) program: the Brighten Your Mood Program; 2- a waiting list control group	6 online lessons within 8 weeks	12.7(7 from treatment group, and 1 from control group)
Tsai and Crockett (1993)	137	25.2	0.7	Nurses experienced work stress diagnosed by NSC and CGHQ	Pretest-posttest control design with two posttest points	75	1-the relaxation training groups; 2-the control groups received	2*90 minute weekly session and one follow-up session in the fifth week	2.2

							equal contact hours and lectures on theory analysis		
Zhao, Chen and Chen (2002)	82	64.6	57.3	Individuals with depressive disorders screened out by epidemiological study and CCMD-2-R	RCT	51	1-a psychological intervention group; 2-a control group	A 6-week psychological intervention	0

Table 5-3 Details of outcomes of the papers included

Authors (Date)	Outcome measures	Post-treatment outcomes	Follow-up
Wu, Li and Cho (2012)	Chinese versions of the IES-R and HADS	There were significant improvements in the measures of PTSD symptoms, anxiety and depression over time. Participants treated with B-CBT suggested greater reduction in depression at 6-month follow-up, and in anxiety at 3-month and 6-month follow-ups compared with ones treated with SHP.	Positive treatment effects on anxiety and depression were maintained at 3-and 6-month and 6-month follow-ups.
Dai et al. (1999)	The Hamilton Depression Scale and the Hamilton Anxiety Scale	Participants assigned in the experimental group reported significant improvement in the scores in the Hamilton Depression Scale, involving the Somatic Subscale in the Hamilton Anxiety Scale. No significant improvement was showed in the control group on any of the measures.	Positive treatment effects were possibly maintained after one, two, or five year follow-up.
Gallagher-Thompson et al. (2010)	Chinese versions of the CES-D, RMBPC, and Program evaluation questionnaire	In the CBT skill training program, CGs did not differ on change in level of negative depressive symptoms, but positive affect was higher, and patient behaviors were appraised as less stressful and bothersome. CGs were also more satisfied with the overall program and reported that they believed they were able to give care more effectively.	This particular program was not very effective in reducing symptoms of depression over the 4-month interval of the study.
Leung et al. (2011)	DASS-21, HPLP-II, Chinese version of DAS-A, and OSI-R	The intervention groups showed significantly lower role stress, personal strain and work-related stress 3-4 weeks after the baseline measurements. Significantly higher stress management behaviours, and less general stress and dysfunctional thoughts were showed in the intervention groups when compared to the control groups. After intervention and personal resource deficits, the levels of dysfunctional thoughts and stress management behaviours	After controlling for the baseline stress level of the whole group as well as for males, the change in dysfunctional thoughts could be a significant predictor of post intervention general stress at follow-up. After intervention, the changes in stress management behaviours were predictors of personal resources deficits at

		significantly predicted general stress, and the personal strain of work-related stresses.	follow-up. The predictions were significant only for males.
Wang, Wang and Maercker (2013)	Chinese translations of PDS, SCL-D, CSE, PCC, and SFI	In the urban sample, significant reduction in post-traumatic symptoms after one month of treatment has showed. In the rural sample, Post-traumatic symptoms decreased significantly after treatment.	The significant reduction in post-traumatic symptoms was sustained during the follow-up period both in the urban and rural samples.
Choi et al. (2012)	Chinese versions of CBDI and CB-PHQ-9	Participants in the treatment group showed significant reduction in depressive symptoms when compared to the controls.	All positive treatment effects and gains were sustained at 3-month follow-up.
Tsai and Crockett (1993)	Chinese translations of NSC and CGHQ	Participants treated with the relaxation training reported significant decrease in self-reported work stress, and increase in self-reported psychophysiologic health when compared to the control group.	The effects of relaxation training continued beyond week 2, and showed significant results at week 5.
Zhao, Chen and Chen (2002)	Chinese versions of GDS and SSRS	After intervention, significant decrease in GDS score and increase in life satisfaction and social support were showed only in the intervention group.	Effects of the intervention were maintained over the follow-up period.

5.3.2 Study design and methodology

5.3.2.1 Participants

Five studies used convenience sampling with participants from particular services and clinical centres, such as the mental health service, professional referrals, a counselling centre, and previous research database (CTAM-Tarrier and Wykes, 2004). These participants were volunteers, clinic attendees and referred patients. Among these five studies, four used a more selective sample with specific inclusion and exclusion criteria such as age, mental health diagnosis, and availability for the duration of participation. The samples used in the other three studies were recruited according to the geographic cohort, with all eligible participants within a particular geographical area.

5.3.2.2 Allocation

All eight studies used randomisation, but only four of the studies described the process by which randomisation was carried out in detail (Wu et al., 2012; Choi et al., 2012; Wang et al., 2013; Tsai and Crockett, 1993). The remaining four studies did not provide specific information on randomisation (Dai et al., 1999; Gallagher-Thompson et al., 2010; Leung et al., 2011; Zhao et al., 2002), for example, the process of randomisation and information about whether the randomisation was carried out independently from the trial research team.

5.3.2.3 Outcome measures

All studies adopted at least one standardised, self-report assessment measures for the main outcomes. The studies involved used different standardised measures to assess mental-, emotional- and behavioural-related symptoms such as stress, anxiety, depression and symptoms of post-traumatic stress disorder. Specifically, the Hospital Anxiety and Depression Scale (HADS), the Centre for Epidemiological Studies Depression scale (CES-D), the Beck Depression Inventory-I (BDI), the Patient Health Questionnaire (PHQ-9), the Depression Anxiety Stress Scale (DASS-21), the Hamilton Depression and Anxiety Scale (Hamilton-D and Hamilton-A), the Diagnostic Interview for Psychiatric Symptoms(DIPS), the General Health Questionnaire (GHQ), and the Geriatric Depression

Scale (GDS) were used to assess symptoms of depression and anxiety. Referring to the symptoms of post-traumatic stress disorder and other particular stress, the Impact of Event Scale-Revised (IES-R), the Revised Memory and Behaviour Problems Checklist (RMBPC), and the Nurse Stress Checklist (NSC) were used. A range of other standardised measures were also adopted (see Table 5-3).

5.3.2.4 Control groups

Among the eight studies using the RCT design, six included the waiting-list control (WLC) group. In four of these six studies (Leung et al., 2011; Wang et al., 2013; Choi et al., 2012; Zhao et al., 2002), the WLC group received the same intervention as the treatment group after a delay of the treatment period. In the remaining two studies, WLC group participants received a similar abbreviated treatment or equal amounts of contact hours after a delay of the treatment period (Dai et al., 1999; Tsai and Crockett, 1993). Referring to the other two RCTs (Wu et al., 2012; Gallagher-Thompson et al., 2010), the controls were active. These participants were given an alternative intervention which served as a comparison. The control group received intervention at the same time as the treatment group in these two studies.

5.3.2.5 Active treatment

The details of the treatments were adequately described in all of the eight papers. All interventions in the eight studies were delivered using an educational model with weekly sessions, two of which were online programs; five were delivered via audio or videotapes and presentations; and the remaining one consisted of written manual materials. Specifically, the Chinese version of *My Trauma Recovery* (Wang et al., 2013), including a six-module course, and the Chinese internet-delivered CBT program, *Brighten Your Mood* (Choi et al., 2012), involving six online lessons, were used to educate participants in trauma-related information and practical mood coping skills. The four-session brief CBT (Wu et al., 2012), eight-week psychoeducational intervention (Dai et al., 1999), psychoeducational skills training DVD program (Gallagher-Thompson et al., 2010), relaxation training program (Tsai and Crockett, 1993) and psychological intervention (Zhao et al., 2002) were delivered via audio, videotapes, DVDs and presentations or lectures. Only one study used previously checked written manual materials, including a

program manual, teaching materials and worksheets (Leung et al., 2011). Homework assignments following each module were included in five studies (Wu et al., 2012; Dai et al., 1999; Gallagher-Thompson et al., 2010; Leung et al., 2011; Choi et al., 2012). The remaining three studies did not state the use of homework assignments, but arranged discussion groups at the last or follow-up session. All active treatments adopted are known as low-intensity CBT resources.

5.3.2.6 Support

In the majority of studies (Wu et al., 2012; Gallagher-Thompson et al., 2010; Choi et al., 2012; Tsai and Crockett, 1993), periodic phone calls and secure reminder emails or letters were included in the protocols to encourage participants to follow the interventions and to clarify any queries relating to the research, without offering any clinical guidance. These support work were carried out by assistants, staffs and investigators from the research team who had a good understanding of the interventions and the processes of assessment. The other three studies arranged discussion groups led by qualified and experienced facilitators, interviewers or counsellors who had training and practice in delivering interventions like CBT (Dai et al., 1999; Leung et al., 2011; Zhao et al., 2002). In the remaining study (Wang et al., 2013), the urban participants were contacted only via reminder emails during the research period, while the rural participants were supported by volunteers in person, with Internet access and minimally reimbursed for their participation.

5.3.2.7 Drop-out rates

The CTAM regards 15% as an acceptable cut-off rate for drop-out. By this standard, the drop-out rates of the studies involved were low, with one study reporting no drop-out (Zhao et al., 2002), and the other six reporting drop-out rates between 9% and 16% (Wu et al., 2012; Gallagher-Thompson et al., 2010; Leung et al., 2011; Wang et al., 2013; Choi et al., 2012; Tsai and Crockett, 1993). However, one study showed a comparatively higher drop-out rate of 22.5% (Dai et al., 1999). There were no significant differences in completion rates found between groups.

5.3.2.8 Follow-up

In the majority of studies (Wu et al., 2012; Gallagher-Thompson et al., 2010; Wang et al., 2013; Choi et al., 2012; Leung et al., 2011), significant reduction in anxious, depressive, stress, or post-traumatic symptoms were sustained in the follow-up period (between the 3-month and 6-month follow-up). In the longer follow-up period, one study reported that positive treatment effects were possibly maintained after one, two, and five year follow-up (Dai et al., 1999). Another study reported that the effects of relaxation training continued beyond Week 2, and showed significant improvement at Week 5. Only one study did not state details relating to follow-up assessment (Zhao et al., 2002).

5.3.2.9 Risk of bias in the studies included

The risk of bias in the studies included were identified and assessed using the Cochrane Risk of Bias Assessment Tool (Higgins and Altman, 2008). Tables 5-4 provides a summary of the overall risk of bias in eight studies. These are stated as high, adequate or unclear.

Allocation concealment: judged to have a low risk of bias in five studies (Wu et al., 2012; Gallagher-Thompson et al., 2010; Wang et al., 2013; Choi et al., 2012; Tsai and Crockett, 1993), and unclear in three studies (Dai et al., 1999; Leung et al., 2011; Zhao et al., 2002).

Blinding: due to the nature of the low-intensity interventions in the studies included, it seems to be impossible to blind the staff administering the interventions or the participants receiving them. However, it is possible to blind the staff who perform the randomisation. Randomisation staff were blinded in two studies (Wu et al., 2012; Gallagher-Thompson et al., 2010). Outcome assessments were blind in two studies due to data collection via the Internet (Wang et al., 2013; Choi et al., 2012). There was no reporting on outcome assessment in one study (Zhao et al., 2002).

Incomplete outcome data: in three of the eight studies, an intention-to-treat (ITT) analysis had been undertaken (Wu et al., 2012; Wang et al., 2013; Choi et al., 2012). In the study conducted by Gallagher-Thompson et al. (2010), the proportion of missing outcomes compared with completed data was insufficient to have significant differences on any of the measures. The mean was substituted for the missed items in Dai et al.'s (1999) study.

Another three studies (Leung et al., 2011; Tsai and Crockett, 1993; Zhao et al., 2002) have used all available outcome data.

Other potential sources of bias were judged to be present in some studies, potentially affecting the outcomes. These included: the level of dependency of the participants and help-seeking behaviours (Wang et al., 2013); lack of concern about physical illness (Dai et al., 1999; Zhao et al., 2002); restricted allocation of participants (Leung et al., 2011); as well as monetary incentives (Gallagher-Thompson et al., 2010; Wang et al., 2013).

Table 5-4 – Risk of bias

Authors (Date)	Sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding	Incomplete outcome data (attrition bias)	Other bias
Wu, Li and Cho (2012)	Adequate (Restricted randomisation by minimisation to prevent imbalances in each group. The process of randomisation has been described.)	Adequate (The method used to conceal the allocation sequence was described in detail)	Adequate (The randomisation was processed by a staff who was blinded to the condition of the participants. Participants were recruited and supported by phone.)	Adequate (Both ITT and completer analyses were conducted.)	Unclear (The small sample size may limit the power of analysis. The treatment group participants had a significantly higher level of hyperarousal, anxiety and depression symptoms than the control group participants at baseline. The compliance rate of the exposure components of the B-CBT, like writing, reading, and an in vivo exposure exercise, was not evaluated.)
Dai et al. (1999)	Adequate	Unclear (There was insufficient	Unclear (An independent	Adequate (The mean was	Unclear (None of the participants were

	(The first group of subjects was enrolled in the experimental group, and the second group of subjects was randomly assigned to both two groups.)	information.)	interviewer who was blind to the subject's status did not administer the measurement)	substituted for the missed items.)	clinically depressed, thus making significant improvement more difficult to achieve. Included participants were much older than researchers had expected.)
Gallagher-Thompson et al. (2010)	Unclear (Randomisation was carried out, but the process of randomisation has not been described.)	Adequate (initial phone screening was arranged in the recruitment period)	Unclear (Randomisation was carried out by a trained administrative assistant who did not see the baseline measures and was not briefed on the intervention procedures. Trained	Adequate (The proportion of missing outcomes compared with completed data was not enough to have significant differences on any of measures.)	Unclear (A monetary incentive was used as a token of appreciation for their time. The sample size is relatively small for a randomised trial. Researchers cannot be certain that some data coming from phone calls are reliable.)

			research assistants were included in the protocol)		
Leung et al. (2011)	Unclear (The participants were allocated into groups by matching their Teacher Development Days with the program periods.)	Unclear (The intervention was incorporated as a teachers' professional development program and was conducted on their Teacher Development Days.)	Unclear (It is not clear but is assumed that the intervention and outcome assessment were undertaken by the researchers.)	Adequate (The questionnaires for the remainder were discarded because significant proportions of the data were missing.)	Unclear (Only showed the short-term effects of the program; The differences in data collection periods for the intervention and control groups posed threats to the internal validity of the study.)
Wang, Wang and Maercker (2013)	Adequate (The participants were randomly assigned to the treatment or waiting list condition based on a computer-generated randomisation list.)	Adequate (The urban sample was reached through Internet advertisements and contacted only by emails, and the rural sample was recruited in-person via cooperation with a	Adequate (The participants were contacted only by email during the research period.)	Adequate (Due to the high dropout rates in the urban sample, an ITT analysis was applied.)	Unclear (Monetary incentives; limitations in sampling and in controlling the contact between research assistants/volunteers and participants.)

		counselling center.)			
Choi et al. (2012)	Adequate (Participants were randomised via a true randomisation process. Sealed envelope which contained the allocation details was used.)	Adequate (Allocation was undertaken via the internet.)	Adequate (All interventions were carried out via the internet; outcome measures were collected via the internet, potentially minimising bias.)	Adequate (All post-treatment analyses involved an ITT design where missing data was addressed by carrying forward the first available data (i.e. baseline-observation-carried-forward model; BOCF).)	Unclear (Lack of blinding for diagnostic interviews and the lack of follow-up interviews with the Control group. This may have biased the results to under-rate diagnostic symptoms in the treatment group at follow-up.)
Tsai and Crockett (1993)	Adequate (The process of randomisation was described in detail.)	Adequate (Allocation was based with no interaction with participants.)	Unclear (The interventions and outcome measures were carried out by research investigators.)	Adequate (Calculating all available outcome data.)	Unclear (The respondents might have reacted to being selected to participate. The respondents in the experimental groups had less chance to talk about their experiences.)
Zhao, Chen and	Unclear	Unclear	Unclear	Adequate	Unclear

Chen (2002)	(Randomisation was carried out, but the process of randomisation was not described.)	(There was insufficient information)	(No blinding to participants intervention by therapist)	(No missing outcome data)	(No selective reporting but no results of baseline analysis shown; power calculation not discussed)
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5.3.3 Summary of the effects of low-intensity CBT resources on mental health problems

5.3.3.1 Studies comparing low-intensity CBT resources with waiting list controls

The findings of the studies are shown in Table 5-3. Four studies compared low-intensity CBT resources with waiting list controls, each reporting significantly greater improvement in the low-intensity CBT group. Specifically, Leung et al. (2011) found that the intervention group participants treated with a cognitive-behavioural stress management program reported significantly lower personal strain and overall work-related stress between 3 and 4 weeks after the baseline assessment. The intervention group also showed significantly more stress management behaviours, less general stress and fewer dysfunctional thoughts than the control group, with effect sizes of 0.20, 0.50, and 0.80 respectively. Moreover, the levels of stress management behaviours and dysfunctional thoughts could significantly predict general stress and the personal strain of the work-related stress of participants. Zhao et al. (2002) found that the intervention group had significantly greater decreases in depression scores, and significantly greater increases in life satisfaction and social support scores after the treatment. Choi et al. (2012) reported that the internet treatment group showed significantly reduced symptoms of depression on the CBDI and CB-PHQ-9 when compared with the control group, with within- and between-group effect sizes of $d=1.41$ and $d=0.93$ on the CBDI, and $d=0.90$ and $d=0.50$ on the CB-PHQ-9. Additionally, Wang et al. (2013) found that, in the urban sample, post-traumatic symptoms were significantly reduced after one month of *Chinese My Trauma Recovery* (CMTR) treatment, with a high effect size of $d= 0.81$. This reduction was sustained over the 3-month follow-up period with an effect size of $d= 0.87$. In the rural sample, post-traumatic symptoms were also reduced significantly after CMTR treatment, with an effect size of $d=1.34$. These seem to be very large effect sizes on the basis of Cohen's norms, which classify Small as 0.20, Medium as 0.50 and Large as 0.80 (Cohen, 1988).

5.3.3.2 Studies comparing low-intensity CBT resources with other psychotherapies

Four studies compared low-intensity CBT interventions with other psychotherapies. Low-intensity CBT interventions resulted in improved mental health states. Statistically significant differences between low-intensity CBT resources and other psychotherapies groups were also found.

Dai et al. (1999) investigated the use of cognitive behavioural therapy to treat minor depressive symptoms in elderly Chinese Americans. The intervention group received an 8-week class based on the *Depression Prevention Course* and handouts (Munoz and Ying, 1993). Four abbreviated lessons were adopted in the control group. The intervention group showed significant improvement in the scores for Hamilton-D and Hamilton-A, while there was no significant improvement in the control group on any of the measures. Consequently, the efficacy of psychoeducational classes in reducing depressive symptoms in the community-based elderly sample has been supported.

Wu et al. (2012) examined the effectiveness of brief-CBT (B-CBT) for patients with symptoms of post-traumatic stress following a motor vehicle crash. Participants who were allocated to the intervention group received the book-based intervention consisting of four 1.5-hour weekly sessions; while the control group participants received a 4-week self-help program (SHP) booklet treatment. The results showed that, in comparison with the control group, participants treated with the B-CBT intervention reported significantly greater reduction in anxiety at the 3-month and 6-month follow-up, and in depression at the 6-month follow-up.

Tsai and Crockett (1993) studied the effects of relaxation training combining imagery and meditation on the stress levels of Chinese nurses working in modern hospitals in Taiwan. Participants in the experimental group were treated with two sessions of relaxation training on the basis of Smith's (1988) cognitive behavioural model of relaxation. The control group participants received equal amounts of contact hours with the researcher, and were given the traditional in-service education through lectures on theory analysis. There were significant differences between the experimental and control groups on the scores of NSC and CGHQ in post-test at Week 5. This study showed that the relaxation training

significantly decreased the Chinese nurses' self-reported work stress, and improved their self-reported psycho-physiologic health (Tsai and Crockett, 1993).

Gallagher-Thompson et al. (2010) compared the skills training DVD (SKDVD) program group with the general educational DVD (EDDVD) program group to investigate the effectiveness of the psychoeducational skill training DVD program in reducing stress in Chinese American dementia caregivers. Positive effects were increased, and the levels of specific stress were decreased by a significantly greater degree for caregivers treated with SKDVD when compared with the participants receiving the EDDVD. Furthermore, the SKDVD group participants were more satisfied and felt that they have benefitted more than those in the EDDVD group.

5.4 Discussion

According to the reviews of the studies involved, there seem to be a number of clear conclusions, and some areas with less clarity.

5.4.1 The efficacy of low-intensity CBT resources for use in Chinese-speaking populations

Based on the studies carried out in this area, low-intensity CBT resources, such as the self-help website, online courses, and skill training DVD, seem to be effective in reducing mental health problems such as stress, anxiety, depression, and PTSD symptoms among Chinese-speaking populations. These low-intensity CBT resources, available in Chinese language, are modified or abbreviated from the original Westernised CBT resources, accompanied with homework assignments and support work. Compared to controls, low-intensity CBT treatment group participants report significantly reduced symptoms of depression, PTSD, anxiety or stress on the corresponding measuring tools over time. Chinese-speaking participants rate the treatment and procedure as acceptable, and gains are sustained at follow-up.

Specifically, among these low-intensity CBT resources adopted in the eight identified articles, four are delivered face-to-face in classes or lectures, and the other four are delivered using modern technology, such as Internet delivered CBT program and CBT skill training program delivered on a DVD. These low-intensity CBT resources have been culturally modified to fit the requirements of the target population. For example, the Chinese depression iCBT program (the Brighten Your Mood Program), adopted in Choi et al.'s (2012) study, is a culturally adapted version of the clinically efficacious Sadness iCBT Program. Several steps are included to make this Chinese iCBT program culturally appropriate, like translating all written words into Chinese, focusing on addressing myths about depression and its treatment, and arranging reviews of all materials with Chinese mental health professionals and users. Again, in Wang et al.'s (2013) study, the Chinese version of the My Trauma Recovery (CMTR) website developed from a self-help trauma intervention program based on social cognitive theory is used. All pictures on the CMTR website are new ones with Chinese figures; and a total of 27 audio segments on the website are newly created. Additionally, Chinese subtitles have been added to the videos. Based on the content of these cultural adaptations, the low-intensity CBT resources have incorporated cultural beliefs and expressions to make such resources acceptable and relevant to Chinese-speaking individuals, which is likely to improve engagement in treatments and promote adaptive coping skills among Chinese users.

Furthermore, all low-intensity CBT resources involve psychoeducational sessions or classes to educate and inform Chinese users with various self-care skills, such as cognitive skills, behavioural activation, exposure-based CBT, relaxation training, problem solving and assertiveness skills. Homework assignments and support emails are also included. Support personnel are encouraged to provide contacts with users via telephone calls or emails during the treatment period. These points of the treatment can provide four components in each interaction with participants, involving summarising and practicing the key skills described in sessions, reinforcement of progress, normalising difficulties with treatment; and encouragement to continue with the treatment. Under these influences, participants are able to use the low-intensity CBT resources to deal with their emotional and mental distress effectively. In addition, the application of the psychoeducational model in classes, sessions and lectures seems to be consistent with the earlier stated suggestion that Chinese people have great respect for professionals, and prefer an educational model in treatment, which can also improve their engagement in treatment.

Given the mental health problems of Chinese-speaking populations, coupled with the cultural stigma which often limits their help-seeking behaviours, it is of primary importance to assess the effectiveness of low-intensity CBT in these populations as this approach may have the potential to increase access to psychological therapies for low mood and anxiety. Given the unique ways in which symptoms of mental health problems present among Chinese-speaking populations, low-intensity CBT may be a desirable and acceptable treatment option for those with mild to moderate mental health problems. The studies included in the current review, with relatively high evaluating quality and low risk of bias, could support, to some extent, the efficacy of low-intensity CBT resources for use in Chinese-speaking populations.

5.4.2 Quality of studies included

One important aspect of this review is to use a validated quality measure (CTAM) to assess the studies included. The mean (SD) score of these studies on the CTAM is 69.6 (12.5), with a range of 51 to 91. Seven studies have CTAM total scores of equal to or greater than the arbitrary cut-off point of 65 representing a high quality study chosen by Wykes et al. (2008), with two of these six studies scoring 62. All studies involved have appropriate sample sizes in each group above the cut-off size of 27 in each group suggested in the CTAM, which positively determines the significant differences between the intervention and control groups. In general, the quality of studies included is relatively high, with relatively low risk of bias. However, some limitations can be also found in these studies.

The process of randomisation in each study has been assessed using the CTAM. All reviewed studies mentioned adopting a randomised control design, but only four studies described the details of the process of randomisation, including how it was carried out, and whether remote randomisation was implemented. The remaining four studies did not describe the whole process of randomisation in detail. Referring to the assessment, only two of the eight studies were carried out by independent, blinded assessors. In the remaining six studies, the assessment was administered by research assistants who were not blind to the treatment allocation. Such assessors involved in the research team could have subjective expectations relating to the measures and statistical results, which may affect the possibility of detecting significant changes.

In the majority of studies using a waiting list control design, control group participants began to receive interventions after intervention group participants completed the treatments. During this waiting period, there seems to be a possibility that contamination may have occurred, as these participants might get some information about the research project and low-intensity CBT resources. When the control group participants began to receive treatments, they might be affected by previous experiences and information, which could confound the results. This may have had an additional effect on the controls, especially on the control group participants treated with other psychotherapies. However, contamination was not assessed in the reviewed studies.

5.4.3 Methodological issues in the development and use of a complex intervention

An exploration of the methodological components of the interventions reveals a number of issues that require attention. The procedure for randomisation was adequate in five studies; however sequence generation was judged as having an “unclear risk of bias” (Higgins and Altman, 2008) in the remainder. It is essential that the process of randomisation renders allocation to groups unpredictable, but also ensures that any predictive factors are equally distributed across the intervention groups in the study (Higgins and Altman, 2008). Concealment of allocation is also necessary to avoid selection bias. Despite an unclear risk of bias being attributed to some aspects of these studies, the quality of the studies included seems to be generally good overall, with almost all studies examining baseline comparability.

Referring to the issue of attrition, an intention-to-treat (ITT) analysis was undertaken in three studies. Intention-to-treat analysis is described as the least biased procedure for estimating the intervention effects in RCTs (Newell, 1992), but, due to some extended follow-up times in the studies included, an imputation of data is still required. To minimise bias in ITT analysis, it is suggested that all participants could be retained in their randomised intervention groups, so that outcome data could be measured and analysed for all participants (Higgins and Altman, 2008). Also, the mean and the first available data were substituted for the missing data in two studies (Dai et al., 1999; Choi et al., 2012).

These approaches to missing data are used in some studies included, suggesting that there seems to be a risk of bias in reporting outcomes.

5.4.4 Limitations of the review

Due to a comparatively small number of studies included in the qualitative synthesis, the opportunity to explore differences was restricted to a qualitative review without undertaking a meta-analysis. In addition, whilst attempts were made to access unpublished studies, none were successfully accessed. For example, one potentially relevant study could not be included due to being an unpublished conference paper with the author not responding to contact. Given that all studies included in this review found some positive effects for low-intensity CBT resources, it is possible to present a bias that studies with significant results are more likely to be published.

Generalisability of results to Chinese international student populations

This review is restricted to interventions using low-intensity CBT resources for the Chinese-speaking populations. Based on the review, all involved studies focused on specific Chinese-speaking populations including the elderly, Chinese nurses, family caregivers, Chinese immigrants, secondary school teachers, and traumatised persons. None of the studies involved Chinese-speaking international students. As outlined previously, international students from Chinese-speaking countries are exposed to many challenges and difficulties, and experience emotional or even mental health problems like low mood, stress, anxiety and depression. Therefore, a previously mentioned website - the LLTTF website (Chinese version) has been designed for Chinese-speaking international students, and further researches investigating the efficacy of low-intensity CBT resources, by creating a culturally adapted online site and then testing its efficacy for use in this group of students would be beneficial.

5.5 Conclusion

On the basis of this systematic review, low-intensity CBT resources, such as the self-help website and online courses, seem to be effective in reducing stress, anxiety and depression

in Chinese-speaking populations. The review has been conducted systematically and involved the rigorous assessment of studies for inclusion, as well as evaluation of the quality (using the Clinical Trials Assessment Measure) and opportunities for bias (undertaking the Cochrane Risk of Bias Assessment Tool) in the studies included. Qualitative and process research would be needed to shed light on whether participants accessing with low-intensity CBT feel better engaged than in other traditional psychotherapies. No work, to date, has examined specifically low-intensity CBT resources, like the cCBT resources, for use in Chinese-speaking international students. Future work could focus on producing in-depth studies investigating how cCBT can be effectively implemented in existing healthcare systems, and clarifying whether the culturally adapted cCBT can provide particular benefits in treating mental health problems in Chinese-speaking international students.

Chapter 6: Focus group examining attitudes of Chinese-speaking international students towards online cognitive behavioural therapy resources

6.1 Introduction

With the global spread of communication and education, an increasing number of international students who speak Chinese choose to study overseas, including in Scotland. These Chinese-speaking international students share a desire to pursue academic goals (Hwang, 2000), develop interpersonal relationships (Lin, 2002b), and prepare for their future careers (Lin, 2010). However, they face many challenges including the completely different educational, social, economic, interpersonal and political environments, and they can also experience significant fresh challenges to their world views such as different perceptions of democracy, freedom, openness, equality, liberty and individualism. Chinese-speaking international students therefore experience a high degree of stress and distress, and encounter various types of challenges and problems (Lin, 2002a; Ye, 2006; Liu, 2009).

Problems such as depressive and anxious symptoms are common, and can affect students' development and growth during their time studying overseas. According to the guidelines produced by the National Institute for Health and Clinical Excellence (NICE), there may be over 450 million people in the world today struggling with different types of mental health problems (NHS, 2009). Depression is a major category of mental health distress affecting people of every age, background and ethnicity. It can occur across the lifespan, at any time, and be experienced at differing levels of severity (NICE, 2011). Depression affects people in different ways. It can lead to presentation with low/depressed mood and loss of pleasure, and can manifest as a combination of feelings of overwhelming loneliness, sadness, worthlessness, hopelessness, irritability, agitation and guilty. This can be accompanied by an array of physical or behavioural symptoms, such as sleep disturbance, loss of energy, fatigue, loss of interest in daily activity and even suicidal thoughts (Sharp and Lipsky, 2002). Anxiety is also a common mental health problem, which often exists alongside (comorbid) with depression (NICE, 2011). Based on the NICE (2011) guidelines, anxiety is usually presented with feelings of tension, uncertainty and fearful/worrying thoughts. People may be worried about feeling uncomfortable, appearing foolish, or how

successful they will be. These symptoms may affect their ability to concentrate and study, and can lead to avoidance of activities that seem stressful (NICE, 2011).

Chinese-speaking international students may have different understandings of mental health compared to students coming from Western culture. As stated in background Chapters 1-3, they may be more likely to be introverted than extroverted, and be more prone to self-absorption and worry. They often have high self-demands and are less likely to express emotions in public or to family and friends. They are less likely to express their inner wishes or desires to others, and avoid asserting own rights in public (Liu, 2009). Studies have also highlighted the preference for expressing depressive symptoms in Chinese-speaking populations, with a greater likelihood of presenting mental distress in terms of physical/somatic complaints (e.g. of tiredness or fatigue) (see Chapter 2).

In addition, students from Chinese-speaking backgrounds have unique ways of experiencing and communicating feelings of depression and anxiety (Yip, 2005). For example, in a study addressing the mental health problems among Chinese-speaking international students in the United States produced by Liu (2009) discussed in Chapter 2, participants were found to prefer to manifest their stress or mental health problems through a language of physical symptoms and complaints. Liu (2009) found that this group of students often seek medical help for their physical complaints, such as headache, stomach ache, eating problems, sleeping problems, or fatigue, even when those problems may stem from psychological stressors (Liu, 2009). If such physical causes cannot be found, these students may not continue to look for alternative causes that are mental health in nature (Liu, 2009). Another possible barrier to help-seeking may be that Chinese-speaking international students report high levels of stigmatisation of mental illness, with fear of losing face and embarrassment, which may prevent them from seeking mental health support (Heppner et al., 2006). Consequently, such students often prefer to keep their difficulties or emotional problems to themselves since they may consider them to be a sign of personal failures, which in turn increases their vulnerability to further low mood, anxiety and depression (Heppner et al., 2006). A better understanding of these students' different ways of experiencing and communicating feelings of depression and anxiety would help local mental health services or practitioners to respond more effectively to this group of students' mental health problems.

Treatments for anxiety and depression include antidepressants and talking therapies/psychotherapies, for example, cognitive behavioural therapy (CBT) (Williams

and Garland, 2002b; NICE, 2009; NICE, 2011). However, access to evidence-based psychological therapies is often difficult, due to a significantly larger demand than supply and also the reluctance by individuals to access help for mental health difficulties (NICE, 2011). Access can be made more difficult because of long waiting times for therapy, the expense associated with service costs, problems with accessing services, and a scarcity and inequitable geographic distribution of accredited CBT therapists (Shapiro, Cavanagh and Lomas, 2003). In response, NICE (2009) recommends the use of self-help resources based on a cognitive behavioural therapy (CBT) model for mental health problems. This includes delivery via computerised CBT (cCBT) as well as book-based bibliotherapy.

Recently completed systematic review of the use of low-intensity CBT resources in Chinese-speaking populations (Chapter 5) found that low-intensity CBT resources, such as computerised CBT resources, seem to be effective in reducing stress, anxiety and depression in Chinese-speaking populations (Kwok et al, 2014; Choi et al, 2012). However, no studies, to date, have used computerised CBT that has been culturally adapted for Chinese-speaking international students, and provided an effective intervention for these students facing low mood and anxiety.

In view of the particular challenges facing Chinese-speaking international students, the current study will test the attitudes of students towards the Chinese version of the *Living Life to the Full* (LLTTF) package. It may be that the content of any CBT resources, like the Chinese version of the LLTTF package, need to be adapted to address and engage this group of students. This may involve adaptation to fit the Chinese-speaking students' lifestyle, as well as changes to reflect their different understanding and expression of distress. Also, more information is needed regarding the support types preferred in this group of students.

6.1.1 Conducting focus groups

Focus groups are conducted in this study to reveal a wealth of detailed information and obtain deep insights into the needs of the target population (Chinese-speaking international students). The primary benefits of focus groups are the ability to explore beliefs as well as becoming aware of wider factors through group interaction and observing non-verbal communication (Kitzinger, 1994). During focus groups, group interaction between participants can encourage them to make connections to various concepts through the

discussions that may not otherwise occur during individual interviews. However, as discussed earlier in this thesis, it is suggested that Chinese students tend to be deferential to authority, and to be particularly private or stigmatised about discussing their mental- or emotional-related problems in public. Under these circumstances, focus groups help create an accepting environment that puts participants at ease allowing them to thoughtfully answer questions in their own words and add meaning to their answers. Specifically, examples of individuals that are not related to the participants with various mental health problems are adopted as a basis for discussion. Because these adopted examples are unrelated to the participants themselves, such participants may feel relaxed to talk about mental health issues, without worrying about losing face and embarrassment.

Moreover, in focus groups, skilled interviewers and/or facilitators can encourage the group interactions to capture data to provide a more comprehensive understanding of what is being studied. Such interviewers and facilitators can be regarded as professionals, authority or experts who encourage the participants to express their views, evaluate all materials, and give appropriate feedback during focus groups. This can create an acceptable environment for participants to provide a deeper understanding of the phenomena being studied.

6.1.2 Aims

The aim of this focus group study is to recruit Chinese-speaking international students based in the West of Scotland and experiencing symptoms of depression and/or anxiety. The study aims to explore participants' understanding of depression and anxiety, and their attitudes towards the Chinese version of the LLTTF package, as well as their attitudes towards different support types that might help them engage and use the resource. Another aim is to identify further adaptation required to reflect cultural differences in expression of low mood, and symptoms of anxiety and/or depression. Additionally, key aspects of the planned future pilot randomised controlled study are explored, including whether questionnaires should be in Chinese or English, and how support should be offered for the site. This will then inform the course content and inform a future substantive pilot RCT study.

6.2 Methods

6.2.1 Intervention

The Chinese version of the *Living Life to the Full* intervention is an online set of materials including e-books, printable worksheets – together with linked modules. The eight modules teach a range of CBT-based life skills. Each module involves a visual slideshow with audio and takes around 45 minutes to complete. Each module is accompanied by worksheets. Audio modules were available as Mandarin and Cantonese language options as well as English language.

The 8 modules are:

- 1: Why do I feel so bad?
- 2: I can't be bothered doing anything
3. Why does everything always go wrong?
- 4: I'm not good enough: (low confidence)
- 5: How to fix almost everything
- 6: The things you do that mess you up
- 7: Are you strong enough to keep your temper?
- 8: 10 things you can do to help you feel happier straight away

The details relating to the LLTTF package have been discussed in Chapter 4.

6.2.2 Recruitment

Participants were recruited through the University of Glasgow Counselling and Psychology Service, and also using posters, direct emails and adverts as well as through the University Chinese Society.

Individuals who responded to the adverts were directed to a study recruitment website, where they could read the Participant Information Sheet, and find out more about the study, eligibility, and how to take part. They then emailed or wrote to the research team to ask for further information. A Consent Form was sent to them by post or email along with an eligibility questionnaire, and a further copy of the Participant Information Sheet. The Consent Form requested permission to use the eligibility data even if individuals were not suitable for the study in order that we could better understand take-up and drop-out and be able to anonymously describe basic demographic details of those not entering the study.

6.2.3 Participants

6.2.3.1 Inclusion criteria:

To be eligible to take part in the study participants had to: (1) be at least 18 years of age, (2) be registered as students (undergraduate or postgraduate) at the University of Glasgow and aiming to live in the UK for the next two months, (3) be currently experiencing mild to moderate symptoms of low mood with a score of 5 or more on the Chinese version of the PHQ-9 depression questionnaire and/or a score of 5 or more on the Chinese version of the GAD-7 anxiety questionnaire, (4) have broadband web access, and also be willing and able to use the online course.

6.2.3.2 Exclusion criteria:

People excluded included those not fulfilling the inclusion criteria. Students currently receiving specialist mental health treatment or psychotherapy/counselling were excluded. Students taking antidepressants were not excluded, however the tablet, dose and length of time on the prescription were recorded. Written informed consent was given by all participants.

6.2.4 Procedure

Students were provided with login details to work through the online course and review linked printable materials and research resources over a period of at least one week. No support was offered during this trial period apart from the English version of the automated email supports. Three focus groups of 5 students were carried out. A mixed method approach was applied to evaluate users' attitudes towards depression, anxiety and concerning the online course. A case vignette was used to help focus the discussion. This provided an example of a student with various symptoms and issues of homesickness and academic failure adopted as a basis for discussion. Two researchers conducted the interviews (MZ and CAM) in English – however participants could express their answers in Chinese if they wished to communicate nuances of response. MZ then translated “live” and out loud any responses in Chinese so that ideas could be checked and transcribed on

the digital recording of the session. Researchers sought comment on the course content. In addition, the types of support required when using such a package in this target population were also explored (automated weekly email, live chat, bulletin boards, or telephone support). See Appendix 6.3 for the topic guide used.

6.2.5 Data analysis

The thematic analysis approach, known as a method for identifying, analysing and reporting themes within data, was used in this study. The thematic analysis approach was chosen due to its flexibility and easy accessibility. Based on Braun and Clarke's (2008) study of using thematic analysis in psychology, thematic analysis provides a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex account of data. Also, as the use of thematic analysis does not require the detailed technological and theoretical knowledge of the approach, it can provide a more accessible form of analysis, particularly for those early in a qualitative research career (Braun and Clarke, 2008, p. 81).

Moreover, good qualitative research needs to be capable to draw interpretations and be consistent with the data collected. The use of thematic analysis is able to identify and recognise variables or factors that affect any issues generated by the participants. Under this influence, the participants' interpretations are significant in terms of giving the most acceptable and appropriate explanations for their thoughts, behaviours and feelings, which seems to be consistent with features involved in the process of the thematic analysis approach (Alhojailan, 2012, p. 11).

In the study, the thematic analysis approach was used to generalise the patterns of meaning in the data, and identify processes of such Chinese-speaking international students constructing their experiences of participating the LLTTF Chinese course during the focus groups. Thematic analysis provides means of identifying themes across a dataset relating to a research question (Braun and Clarke, 2008).

The phases of thematic analysis (Braun and Clarke, 2008, p. 87) are:

- 1) Familiarising yourself with the data by reading and re-reading
- 2) Generating initial codes
- 3) Searching for themes
- 4) Reviewing themes

- 5) Defining and naming themes
- 6) Producing the report

6.3 Result

Fourteen Chinese-speaking international students, including 4 males and 10 females, attended to one of three focus groups. All participants were first-year post-graduate taught students studying at University of Glasgow, aged 22 years old and above. The mean age of participants was 23.36 (SD=1.17), the mean PHQ-9 score was 6.07 (SD=0.96), and the mean GAD-7 score was 5.57 (SD=0.73). The majority of participants came from business school (only 1 from school of chemistry and 1 from school of education).

The findings of this focus group study were summarised below (see Table 6-1). Four major themes were identified: causes of mental health problems, perceptions of mental health problems, treatments/help-seeking, and interventions. Some subthemes generated from each theme were also described.

Table 6-1: Themes derived from analysis of focus groups data

Themes	Subthemes
Causes of mental health problems	Cultural, environmental, and social changes Language difficulties Loneliness Poor time management Personality issues Pressure at University.
Perceptions of mental health problems	Little knowledge of mental health problems Sources of mental health related information.
Treatments/Help-seeking	Little help-seeking behaviour Keep busy Friends and family Planning Group support Professional support (counselling) Keep problems themselves.
Interventions	Positive points of the LLTTF package. Negative points of the LLTTF package Improvement areas Support preferences: support emails, live chat, phone call, face-to-face support.

6.3.1 Causes of mental health problems

All Chinese-speaking international students participating in this study were asked about their understanding of the causes of mental health problems. Participants mentioned cultural, environmental, and social changes, language difficulties, loneliness, poor time management, and personality issues as the causes of low mood, anxiety or depression. Pressure at University was also mentioned to contribute to such feelings:

“Study style is also different from Chinese style...we still need to do the further reading in our spare time. It takes lots of time, and sometimes I can experience too much load since my reading is not good”. (Student H, male, MACC International Accounting & Financial Management)

One student regarded cultural, environmental, and social changes as the causes of low mood, anxiety and depression when studying overseas:

“I think it should be the environment and adjustment. Because of the different culture, he feels lonely and nobody can help him”. (Student B, male, MSc Management)

Chinese-speaking international students encountered values and customs in Scotland that contradicted those in their country of origin, such as directly expressing competition and needs versus internalising such personal ideas and desires; equality of relationships versus hierarchical relationships; and individualism versus collectivism:

“I find it is difficult to adapt to the foreign environment. I'm not used to the foreign students' ways of directly saying and expressing their preferences, requirements, and even the dissatisfaction, just like my local roommate. She often complains about my behaviours and living habits, which makes me feel very embarrassed. Also, the local people are keen to express their needs and wishes, particularly focusing on equality. I really don't like to say too much about my personal thoughts directly”. (Student E, female, MSc Management)

Cross-cultural differences and social changes might act to prevent this group of students from adapting to the new living and studying environment easily, and could contribute to acculturative stress and distress. Language difficulties appeared to be one of the most challenging issues for international students, especially for the Chinese-speaking international students.

Almost all students reported that their limited English language skills and a lack of chances to practice English can result in academic difficulties. This can also affect these students' interactions with the local students, cause unwillingness to express their problems, and possibly lead to feelings of embarrassment and distress. This may also explain why such Chinese-speaking international students seem to underuse mental health services:

“The first problem that all of us face up with is English language, especially the Scottish accent. When we firstly arrived at Glasgow, we found it's really hard to understand and communicate with the local people. If we cannot speak very well, we cannot understand the foreigners, and cannot be a part of them, a part of the group, and also a part of the local people here”. (Student H, male, MACC International Accounting & Financial Management)

Some students also mentioned that loneliness and a loss of social support may contribute to Chinese-speaking international students' stress and distress which often accompany emotional pain like feelings of marginality, helplessness, and perceived alienation. Furthermore, poor time management relating to study and life planning, and introverted personality traits were regarded as the personal causes of mental health problems:

“I always feel lonely and helpless. Nobody can understand me, and I don't know how to explain my problems to the people around me. I really miss my

parents, but I cannot tell them my difficulties. I don't want them to worry about me". (Student K, female, MFin International Finance)

6.3.2 Perceptions of mental health problems

The case vignette was used to explore Chinese-speaking international students' perceptions of mental health problems. This included where they find out information about problems like low mood and stress, and how much they know about these mental health problems. The majority of students had limited knowledge of mental illness, with most of the knowledge being information represented in film and television works, websites, public media, and literary works.

Importantly, students did use the terms like depression and anxiety, and most of the related information again was attributed as coming from the network and film, television and literary works. Students said they do not know whether this information is true or reliable. Furthermore, when talking about mental health problems, symptoms and adverse effects of mental illness on work and life were only mentioned. These students knew little about concepts such as clinical diagnosis and effective treatment.

One student described his understanding of mental health problems:

"Before coming here, I heard about these words like anxiety and depression frequently. I have already known these mental health problems. For example, in some films and TV shows, anxiety and depression have been discussed, and the serious consequences of mental illness have been also mentioned. Sometimes I think I may have had depression, because I have experienced the mentioned symptoms, such as bad appetite, insomnia, feeling tired, and low efficiency. This is just my guess, without any professional assessment. Actually, I don't know what the professional assessment is....There are many ways to get information about these problems, like talks in the church. There are also some workshops about mental health problems organised by the student counselling service at the University". (Student F, male, MSc International Banking & Finance)

In the focus groups, many students overly mentioned their physical symptoms such as tiredness, headaches, sleeping difficulties and poor appetite. Some described seeking help for such physical symptoms even when they acknowledged a possible underlying psychological cause. There were no mention of loss of libido, or change in weight among these participants:

"I felt very tired, uncomfortable, and a headache last week, and couldn't sleep well. I went to see my doctor, but he couldn't find the specific condition. I

talked with my friends; they said I might be too much pressure. I really need a break”. (Student A, female, MSc Management)

An important source of understanding depression and anxiety was identified as being through online searches. Participants also stated that watching films and TV series where characters experienced life stressors, losses and challenges, and struggled with low mood or anxiety aided their understanding:

“I have seen lots of films and TV series relating to the psychology, such as “Lie to me”, “Silence of the Lamb” and “black swan”. From these films, I have learnt some key words like depression, anxiety and Schizophrenia. The mental illnesses showed and described in these films are really exaggerated, which makes me feel scared. I always use the words like depression and anxiety when I feel down, but I have no idea about the details of such problems”. (Student F, male, MSc International Banking & Finance)

Another student indicated that:

“I will google the key terms of mental health problems, such as low mood and depression, by myself, and read the related information about these problems. Those sources may be not that academic and professional, but, such information is quite suitable, acceptable, and easy to understand for us”. (Student N, female, MACC International Accounting & Financial Management)

Students reported that more specialised and easily accessible information sources are required, in order to get more professional and reliable mental health related information.

6.3.3 Treatments/Help-seeking

Treatments for mental health problems and help-seeking behaviours among this group of students were also stated in the focus groups. Students indicated that when experiencing mental health problems, few of them would seek help from others. Keeping themselves busy, such as participating in activities, travelling, and going to clubs, was encouraged by almost every students interviewed in the focus groups.

Referring to the social support, majority of students insisted that they choose to keep difficulties or emotional problems to themselves because they felt these problems imply personal failures:

“I think I can solve the problems all by myself. I am a shy person, and not used to share my personal thoughts and feelings with others.....My friends think I am a very wise person, so, I cannot let them know my weaknesses and problems. I don't want to lose face in front of others”. (Student D, female, MSc Chemical Studies)

Some students preferred to share their emotional feelings and thoughts with their friends rather than their parents, since they did not want their parents to worry about them. One student mentioned that he would like to seek professional support from mental health services, like attending psychological courses, face-to-face counselling, or group therapy. Additionally, attendance at pre-planning courses, that aim to help students prepare for overseas study, such as different study and life styles that they may experience, and potential difficulties or problems that they may face up when they studying overseas, was identified as helpful.

One student reported her experience of attending to the pre-planning course before coming to Glasgow:

“We can have some pre-planning courses before coming to the UK. In these courses, such Chinese international students can be informed that it is difficult to live, to learn, and to prepare for the difficulties. They can get useful information, and do some preparation. So, they will feel much better and more suitable when they arrived in the UK. I think the pre-work is quite important. If we have been aware of these difficulties before coming here, we could have some preparation for these problems”. (Student A, female, MSc Management)

Another student pointed out that:

“I have never told my parents about something negative relating to my study and life in Glasgow. I think as an international student, some problems are normal; we should adjust by ourselves all the time. So, I never ask someone for help associated with the problems that I have faced up. I think I can do it by myself...”. (Student A, female, MSc Management)

For those students who were more inclined to express their physical symptoms, if such physical causes were not found by the doctor, they seemed to not continue to seek alternative causes or services that are mental health in nature:

“When the exam season comes, I often feel stressed. I cannot sleep well, and have bad appetite. Also, I often experience headache and stomachache. I would find a doctor to get some sedative analgesic pills, or buy some mood smoothing oil products. But, that’s not useful. I think I can cope with these problems by myself”. (Student D, female, MSc Chemical Studies)

6.3.4 The *Living Life to the Full* (LLTTF) intervention and proposed evaluation

Participants were asked about their perceptions of the LLTTF package after looking through the recruitment website, online course, worksheets, research website, and support

types. Positive points of the LLTTF package, negative aspects of the intervention, improvement that could be made to be culturally relevant, and support preferences were discussed. Specifically, participants positively evaluated the design, colour, layout, website, interactive session, and support types of the LLTTF package.

Participants identified some points of the site that need to be improved. These included the option to skip introduction/welcome session of the website, adding a menu of course content on the home page, adding more pictures to the website, adding the language setting options (e.g. English/Chinese) and support types options (e.g. emails/telephone):

“These pictures are ok! The online course seems to be attractive to the Chinese-speaking international students...The website is quite good, really good. It’s clear and quite easy to find everything through this website”. (Student C, female, MSc International Corporate Finance & Banking)

Negative points of the LLTTF package included:

“It looks like the academic English book. But if it is in Chinese, it will be better. The pictures are quite simple. These pictures are too young and simple for the adult. For me, I do prefer the video style with a people who can teach you with those courses and life skills.... if I don’t understand some points, and I want to go back to listen again, but, it cannot go forward and backward”. (Student G, male, MFin International Finance)

All students mentioned their Chinese language preference when using the LLTTF package:

“To be serious, Chinese version definitely! It’s the project to help you release low mood, depression and anxiety. For the majority of the Chinese-speaking international students, language is a big problem, which can make these Chinese-speaking population feel anxiety. Just like me, sometimes, when I see something in English, I will feel unhappy. I will feel uncomfortable to something or some words. But if you have the Chinese version, these students may be interested in this online course, and then, it’s possible for them to find the original English sentences. Therefore, I do prefer everything in Chinese”. (Student D, female, MSc Chemical Studies)

6.3.4.1 Comments concerning the recruitment website

Students negatively assessed the recruitment website, especially for having too many words (perhaps due to the need of including the approved Participant Information Sheet) and the use of English language alone– where Chinese was preferred:

“It is really hard to follow the recruitment website, because it has too many words. So many English words make me feel a little flustered. Actually, I don’t have the patience to read all of them”. (Student N, female, MSc Psychological Studies)

6.3.4.2 What kind of support do students wish to receive?

Different support types including weekly support emails, live chat, telephone support, and face-to-face support were suggested.

One student reported his support preference:

“The patient can receive at least one email per week from the support worker. Weekly email! For example, after finishing the first week’s course, some people may forget to do the next module, at that time, if the worker can send him/her an email, it will be a good reminder for him/her to do the continuing module. Weekly email seems not disturbing, and can remind you to do the next step”. (Student C, female, MSc International Corporate Finance & Banking)

Another student mentioned the use of telephone support:

“Telephone support is important. But, sometimes at some unavailable situations, the use of the telephone support maybe a little bit annoying. So, you can send a message before calling him/her”. (Student N, female, MSc Psychological Studies)

Face-to-face support has been also suggested by some students:

“For me, I prefer to talk with some professional support workers, so that I can ask some questions about those problems. I do prefer the face-to-face counselling, it’s much more direct. If I type something, some true ideas or meaning will be lost. If I talk to someone, it will be the voice from my heart...so, if I talk to someone directly, some main points can be focused”. (Student N, female, MACC International Accounting & Financial Management)

6.4 Discussion

The findings of this focus group study have provided an in-depth understanding of how Chinese-speaking international students conceptualise mental health problems like stress, low mood, anxiety and depression. The focus group study has also explored students’ attitudes towards the online intervention, recruitment website and support types required.

6.4.1 Chinese-speaking international students’ understanding of mental health problems

Researchers find that educational, social and interpersonal changes and challenges including language differences, academic difficulties, and poor management skills are

regarded as the main causes of mental health problems. The findings have supported the previously discussed views in background chapters that Chinese culture suggests a more introverted personal style, whereas modern Western culture tends to be more extroverted in orientation (Yip, 2005). Western people are often encouraged to assert their own rights and preferences; while Chinese people are encouraged to restrain or control their emotions or desires, which can help them maintain a peaceful mind and life (Yip, 2005). However, when moving abroad, many of the usual supports (families and friends) have removed, and the danger of isolation is high-made more marked by the differences in culture, attitude and language locally in Scotland.

Moreover, some of the moral standards in social and interpersonal interactions in Chinese culture, such as being kind, considerate, faithful and humane, are very important to Chinese people. Chinese students rarely complain, and tend to put up with difficulties rather than asking for help. This group of students might avoid conflict, for example, by avoiding raising issues or asking for changes. Chinese-speaking international students therefore often experience culture shock and challenges when they live and study overseas, which may lead them to experience a high degree of stress and distress, and easily encounter various types of mental health problems and crises like anxiety and/or depression (Lin, 2010). Such views were clearly voiced in the focus groups. Thus, it seems to be important to conduct culturally sensitive outreach programs to increase these students' awareness of help-seeking, and to normalise their problems or difficulties when studying overseas in the future substantive study.

The results of the current study show that language difficulties appear to be one of the most challenging issues for Chinese-speaking international students. All students participating in this study report low level of English language ability. Poor language skills often result in academic problems, such as difficulties in writing papers, expressing ideas and conducting studies. Therefore, students with poor language skills may feel dissatisfied with their academic performance and experience a high degree of distress or stress. Furthermore, some students indicate that they are unwilling to seek help or support from mental health services because of their low levels of English language skills which may make them feel difficult to accurately describe and express their problems in English. These language and academic difficulties, and avoidance of seeking mental health support may in turn negatively affect their psychological well-being. These findings are in line with the sources of mental health problems among Chinese international students viewed earlier in background chapters.

Interestingly, our results do not fit the suggestion by many previous studies (Wong and Poon, 2010; Guo and Hanley, 2014) examining Chinese-speaking people in China and in other settings, that they fail to use terms such as depression and anxiety. Chinese-speaking international students participating in this study report that they tend to use the terms stress, low mood, anxiety, or depression. They have learned to use these concepts through seeing them portrayed in films and on TV shows. They also identify many physical symptoms linked to a presentation of distress. For example, some students report “feeling tired”, “headache”, “feeling dizzy”, and “no appetite”, when describing their feelings in facing up with difficulties and problems. They have often sought medical help for their physical complaints, even when those problems may stem from psychological stressors.

This finding seems to be consistent with previously suggested concept of mental health in Chinese culture which indicates that Chinese people tend to manifest stress through their physical symptoms (Liu, 2009). Due to this, in later pilot study, support workers could provide Chinese-speaking international students with rational understanding of their physical complaints, and should determine whether these students experience mental health problems when reporting physical complaints. Moreover, according to the participants in the focus groups, stigma of mental health problems, like embarrassment and losing face, may prevent Chinese-speaking international students from seeking professional mental health services. This is in keeping with the findings of Liu (2009). These students prefer to keep their difficulties or mental health problems to themselves rather than sharing with others, because such difficulties may imply personal failures. Under these influences, their vulnerability to mental health problems will increase in turn (Heppner et al., 2006). Our findings have supported this view. Because of the stigma of mental illness among Chinese-speaking international students, future required support work could be conducted in an anonymous or relaxed style, without mentioning and emphasising too many professional psychiatry or psychology related content.

Referring to such students’ knowledge of mental health problems, Chinese-speaking international students’ understanding of mental health problems seem to be not that comprehensive, which may be due to their introverted nature and preference of reporting physical complaints. Specifically, when talking about mental health problems, symptoms of mental illness, especially somatic symptoms, are often mentioned first. The adverse effects of these mental health problems on work and life, such as reduced working efficiency, the deterioration of interpersonal relationships, and low life satisfaction are also

focused upon. However, deeper understandings of mental health problems, such as suitable assessment methods, effective treatment, and the use of medications, are rarely recognised and mentioned. Based on these findings, we can easily find that Chinese international students have limited knowledge about mental illness, with most of the knowledge being information and lay views coming from websites or public media.

Moreover, when talking about sources of mental health related information, website, public media, and related books are mentioned. However, in many film and television works and public media, mental illness and psychology related information are often exaggerated, which may provide these students with some unreliable and not realistic information. Such unrealistic information may, to some extent, mislead these students. Consequently, reliable, realistic, and easily accessible sources of mental health related information are required.

6.4.2 Chinese-speaking international students' attitudes towards the online intervention

In general, participants positively evaluate the online intervention – the Chinese version of the LLTTF package. Users said they are willing to use the online course, and the course is helpful for reducing their stress and emotional problems. Based on the results of this study, positive points of the LLTTF package, such as the design of the website, colour of each page, website layout, interactive session, and required support types, have been identified. The design of the online intervention, including the content of each module, different colours for different sessions, interactive part and worksheets/books are appreciated. Students are more inclined to use the Chinese version course, and want to have the opportunity to choose the different support types. They report the willingness to use the course and appreciate the practical life skills it teaches.

Negative points of the LLTTF package are mainly focused on the recruitment website. These are identified as having too many words, and only using the English language. Improvement points of the recruitment website such as adding the introductory section, adding research team related pictures, and setting up language choosing options and support types options are also suggested.

Regarding to the LLTTF Chinese package, participants suggest that it would be better to make the Welcome module switch automatically, to add more pictures to the website so that the dashboard area would be more attractive, and to set up language and support types choosing options. These improvement points could make such package clearer and more acceptable for the target population.

Based on the results, language difficulties appear to be one of the most challenging issues for Chinese-speaking international students.. Low English language fluency is likely to affect those students' text comprehension, capacity of expression, and academic performance, which in turn negatively affects their self-confidence and psychological well-being (Mori, 2000). When discussing the research process itself, all participants mention that they prefer to receive questionnaires and all related materials in Chinese language. They suggest that it would be better to translate all materials involving questionnaires, recruitment website, online course, e-books, worksheets, and weekly support emails into Chinese language, which would make the content familiar, comfortable, and easy to follow.

6.4.3 Requirement of support types

Support preferences such as support emails, live chat, telephone support, and face-to-face support have been identified by the participants. We have confirmed that Chinese-speaking international students do not want to share their difficulties and mental health problems with others, since such difficulties may imply personal failure and lack of problem-solving ability. Therefore, when talking about support types, students pay great attention to the nature of privacy, anonymity, and confidentiality. This perhaps explains why the majority of students participating in this study prefer to receive support remotely as this avoids any direct face-to-face contact. For example, support types like weekly support emails, live chat, and telephone support are preferred and suggested. With the help of these support types, students can actively share their own difficulties and problems with others without feeling embarrassed, and being worried about disclosure of personal privacy and failure.

Some participants also report that they would like to receive face-to-face support like counselling. They indicate that professional counselling may be effective in helping them deal with difficulties and problems directly. Additionally, all participants identify that it would be better to organise and translate required support types into Chinese language.

Support workers who speak Chinese would be required in the future pilot RCT study to reduce the tension and discomfort caused by language barriers during the treatment.

6.4.4 Strengths and limitations

The study has a number of strengths. Chinese-speaking students are recruited across a range of courses and course years. Both female and male students of different ages and from different Chinese-speaking communities are recruited. Saturation of themes has been achieved. Limitations are that the research took place in a single University in Scotland, so some results may not be generalisable to other settings.

6.5 Chapter summary

This focus group study used a sample drawn across course years in order to establish and refine the delivery of the intervention and evaluation. It allowed the testing of recruitment, and obtained a greater understanding of how Chinese-speaking international students conceptualise mental health problems such as low mood, stress, anxiety and depression. It also explored these students' opinions on the LLTTF package, like research website, worksheets, modules, and booklets, research questionnaires and process, and how support should be offered for the website.

This focus group study suggests that delivering the online course to Chinese-speaking international students who report mild to moderate low mood, anxiety and depression may be a feasible and desirable way to help them. It also suggests that Chinese language translation and weekly email support are important to the online course. The results of the focus group study can help to inform a future substantive study, which involves adaptation to fit Chinese-speaking international students' lifestyle, as well as changes relating to the course content to reflect their different ways of understanding and expressing of stress and distress.

Chapter 7: A pilot randomised controlled trial of evaluation and treatment of low and anxious mood in Chinese-speaking international students

7.1 Introduction

7.1.1 Background

As outlined in Chapter 2, an increasing number of international students who speak Chinese choose to study overseas including in Scotland. These students face many differences such as adjusting to the foreign educational, social, economic, interpersonal and political environment. They can also experience significant fresh challenges to world views like different perceptions of democracy, freedom, openness, equality, liberty and individualism.

Our focus group study (described in Chapter 6) examined attitudes of Chinese-speaking international students towards online cognitive behavioural therapy resources (Chinese version of the LLTTF package), and also explored the language and concepts used by students in describing and understanding depression and anxiety. The focus group study identified a number of educational, social and interpersonal changes, and challenges including language difficulties, academic difficulties, and poor management skills as the main perceived causes of mental health problems. Language difficulties appear to be one of the most challenging issues for these Chinese-speaking international students. They strongly expressed a preference to receive all support types and therapies in Chinese language. Furthermore, the existing literature suggests (see Chapter 2) that Chinese-speaking international students tend to manifest stress, low mood, anxiety, or depression through their physical symptoms, and thus they often seek medical help for their physical complaints, such as eating problems, sleeping problems, dizziness, headache, or stomach ache, even though those problems may stem from psychological stressors. Our focus group study has confirmed this, but also surprisingly identified that students were comfortably using terms such as anxiety and depression, and had an understanding and use of these concepts.

The purpose of this work is to provide a unique understanding of mental health problems among Chinese-speaking international students, in order that the content of any required treatment resources could be culturally adapted to address and engage this group of students.

As described in Chapter 3, NICE recommends that access to CBT can also be provided using so-called low-intensity approaches such as CBT-based books and also delivery via computerised CBT (cCBT). CBT resources are recommended for the treatment of depression and anxiety in patients who have mild to moderate mental health problems. However, the effectiveness of cCBT resources for use in Chinese-speaking populations has only been investigated to a limited extent (Chapter 5).

No studies to date have used computerised CBT that has been culturally adapted for Chinese-speaking international students. Such package might provide an effective intervention for students facing low mood, anxiety and depression. Gellatly et al., (2007) have suggested that the offer of such resources is more effective when guidance/support is provided.

7.1.2 Aims

In this chapter, a pilot study is conducted of an educational life skills package, *Living Life to the Full* (LLTTF) – Chinese version, with the option of Mandarin and Cantonese Chinese language resources, and support study among Chinese-speaking international students with mild to moderate mental health problems. The online course teaches key life skills and is based on an existing CBT model with a strong educational focus (Williams et al., 2011). Many areas of uncertainty, such as the ability to recruit, gather data, deliver and support the course, have been clarified in the focus group study. In line with this, all of the research materials (including advertisements and questionnaires) and the online intervention were re-written in the Chinese language. This included the modules and linked books and worksheets (already translated several years ago as the part of another project), but also included new work to translate the menu items and other written information on the home page into Chinese.

The online course would be supported (as recommended by NICE) and in line with the focus group results, it was decided to offer support sessions via email and in the Chinese language. A volunteer Chinese-speaking employed staff working at the University of Glasgow student counselling service (Mei Hong) offered support help to provide weekly emails to participants.

The aim of the study is to recruit Chinese-speaking international students based in the West of Scotland and experiencing symptoms of depression and/or anxiety. It included both those diagnosed with depression as well as those with lowered mood scores without a formal

diagnosis. In this pilot study, the main aim is to investigate take-up, drop-out and completion rates of the online course, and the completion rates for data in order to reduce uncertainty in the future delivery of a substantive randomised controlled study. Secondary outcomes are changes in the Patient Health Questionnaire 9 (PHQ-9) (Spitzer, Kroenke and Williams, 1999) and the Generalised Anxiety Disorder 7 (GAD-7) (Spitzer, Kroenke, Williams and Lowe, 2006) scores, which can provide data relating to the effects of the intervention on depression and anxiety levels.

7.2 Methods

7.2.1 Overview

This is a pilot study with a randomised controlled design to test the possibility of delivering the culturally adapted LLTTF online life skills resource to Chinese-speaking international students. In this RCT, 50% of participants were randomly allocated to receive immediate access (IA) to the LLTTF online intervention and another 50% to a delayed access control group (DAC). The primary end point is 3 months at which point the control arm was invited to begin the intervention. A further follow-up point at 6 months post-randomisation allows a test of the sustainability of any changes in the intervention arm. This 6-month time point was chosen as a comparative, reasonable follow-up length to fit the structure of the academic year.

7.2.2 Participants

We aimed to recruit up to 50 participants in total to provide an indication of the take-up, use and impact of the course on low mood, anxiety or depression; and identify any problems with recruitment, delivery of the intervention and completion of evaluation measures. This sample size is in line with the recommended sample size for pilot studies (Billingham, Whitehead and Julious, 2013; Sim and Lewis, 2012).

Inclusion criteria:

To enter the study, individuals had to be Chinese-speaking (Mandarin or Cantonese) international students aged 18 years of age or more, registered as students (undergraduate or

postgraduate) at the University of Glasgow and living in the UK for the next two months. This is to ensure they are in the UK when using the intervention so that appropriate support can be offered in the event of identified risk. Current symptoms of depression with the score of 5+ on the PHQ-9 (Spitzer, Kroenke and Williams, 1999) depression questionnaire and/or a score of 5+ on the GAD-7 (Spitzer, Kroenke, Williams and Lowe, 2006) scale (Chinese language versions) had to be present for eligibility. Participants were required to have broadband web access, and also be willing and able to use the online course.

Exclusion criteria:

Participants were excluded if they did not fulfill the inclusion criteria or were currently receiving specialist mental health treatment or current psychotherapy/counselling. Students who are on antidepressants were not excluded, but the drug, dose and length of time on the medication were recorded.

7.2.3 Procedure for recruitment

Chinese-speaking international students (undergraduate and postgraduate) were recruited directly from the community. This could be predominantly through the Glasgow University Counselling and Psychology Service and also using posters, direct emails and adverts; as well as through the University Chinese society.

Individuals who responded to the adverts were directed to the study recruitment website where they could read the Participant Information Sheet and find out more about the study and how to take part. They could then contact the research team to ask for further information. A consent form was sent to all potential participants along with an Eligibility Questionnaire, and a further copy of the Participant Information Sheet.

The consent form requested permission to use anonymised eligibility data even if a participant was not suitable for the study in order that we could better understand take-up and drop-out and describe basic demographic details of those not taking up the study. The eligibility questionnaire collected demographic information, such as participants' age, date of birth, current education status, gender, whether they have access to the internet, information regarding previous or ongoing mental health treatment and also whether they have at any point been diagnosed with low mood, anxiety or depression. The eligibility pack

includes the PHQ-9, (Spitzer, Kroenke and Williams, 1999) and GAD-7, (Spitzer, Kroenke, Williams and Lowe, 2006) in order to assess participants' mood states.

7.2.4 Randomisation

Once eligible participants had completed the consent form, they were then randomly assigned to one of two groups. Participants' ID numbers were passed to a separate researcher (Carrie-Anne McClay - a research assistant in the department and colleague of CW) who used the randomisation function in Excel to remotely assign participants to the immediate access (IA) group or the delayed access control (DAC) group. As it is a pilot study, we did not stratify for any variables during randomisation. The randomisation was done remotely by a researcher who was not involved in the final data analysis. After randomisation, the two groups of participants were followed up in exactly the same way. The most important advantage of remote randomisation is that it minimises allocation bias, balancing both known and unknown prognostic factors, in the assignment of treatments.

All participants were then emailed the necessary information regarding the study. Those participants allocated to the immediate access group also had the option of contacting the research team to get practical support in accessing the online course. All contacts were recorded in a contact log (participant, time/frequency, and content of support).

Immediate Access (IA) group:

Participants randomised to IA were given log in details for the LLTTF online intervention and received

- 1). Weekly support via automated emails in either Mandarin or Cantonese.
- 2). In addition, personalised short weekly support sessions were offered via emails from a Chinese-speaking counsellor. Support focused on encouraging module completion and practicing what has been learned. Copies of emails were retained to check adherence to the Plan, Do, Review model (Williams and Chellingsworth, 2010) of support. This model uses two worksheets (Planner and Review sheets) to help plan and apply what is learned in practice.

Delayed Access Control (DAC) group:

Participants randomly allocated to the delayed access control (DAC) group were informed that they would be given access to the online course after a delay of 3 months. Before the DAC group participants began to receive treatment, information about whether they have received any forms of specialist mental health treatment or psychotherapy/counselling, consulted their GP, or taken an antidepressant while waiting to access LLTTF were collected via email to examine whether there is a possibility of contamination. As in the IA group, all participants continued with treatment as required.

7.2.5 Intervention

The Chinese version of *Living Life to the Full* package is used as an intervention in the study. The package contains eight modules that teach a range of CBT-based life skills. The details of the LLTTF package have been discussed in Chapter 4. Each module involves a visual slideshow with audio, takes between 20- 45 minutes to complete, and focuses on a different common problem faced by people when they feel low or anxious.

The 8 modules are:

- 1: Why do I feel so bad?
- 2: I can't be bothered doing anything
- 3: Why does everything always go wrong?
- 4: I'm not good enough: (low confidence)
- 5: How to fix almost everything
- 6: The things you do that mess you up
- 7: Are you strong enough to keep your temper?
- 8: 10 things you can do to help you feel happier straight away

(See Chapter 4).

Cultural adaptations: based on the previously discussed Chinese students' perceptions of the LLTTF package (Chinese version) in the focus group study, some cultural adaptations have been made. Simple/traditional Chinese, Mandarin and Cantonese versions of the materials have been made available. All of the research materials (including advertisements and questionnaires), items on the web pages (including menu and text icon), and the online intervention have been written in the Chinese language. All western-based cases used in the course have been modified to fit Chinese culture (involving describing Chinese food and

living habits). Furthermore, key words relating to psychological points and CBT content have been translated into simple, common and colloquial Chinese language. For example, “automatic thoughts” or “altered thoughts” can be rephrased as “thought traps” or “unreasonable thoughts”. In addition, the support sessions have been delivered by a Chinese-speaking support worker via weekly emails to participants. The support is protocol driven and focused on encouraging use and application of the intervention. All details referring to cultural adaptation are shown in Table 7-1.

Table 7-1: Cultural adaptations of the LLTTF package

Item	Original English version	Modified Chinese version
Language	English	Chinese (all materials including recruitment website, questionnaires, items on the web pages, online courses, support emails etc.)
Introduction	No real mention of the author or their qualifications	Author described as a Dr, Professor and expert. This fits the Chinese perspective of respect for experts
Case vignette/Example	Western-based cases	Chinese-based examples, Chinese food, Chinese figures, Chinese living habits etc.
Keywords/Phrases	Using Westerners' preferred and favourite examples, e.g. images of porridge to reflect healthy eating	Using Chinese people's preferred and favourite expressions; and using simple, common and colloquial phrases and psychology- or CBT-related keywords (like “thought traps”, “unreasonable thoughts”, etc.)
LLTTF website	Default English settings	Setting up language (English/Chinese – Cantonese and mandarin audio) and support types (automated support emails/support worker) choosing options on the home page
Support work	Automated weekly support emails which could be turned on (default) or off by participants	Personalised support sessions delivered by a Chinese-speaking support worker via emails
Support emails	All in English language; reminding participants to use the site, and describing recommended next modules	All in Chinese language; focusing on encouraging use and application of the intervention; providing some suggestions; asking participants about course completion and feelings

7.2.6 Support work

Participants could have the option to sign up to receive weekly automated support emails

from the website with the option of traditional and simple Chinese script. As previously indicated in the focus group study, the personalised support element has been also added; delivered by a Chinese-speaking trained counsellor based at the University Student Counselling via email. The support was protocol driven and focused on encouraging use and application of the intervention. It was designed to encourage an individualized plan to be made at the end of each session using a Plan, Do, Review structure, with a focus on making changes in their lives and using the materials to support them in doing this. Therefore, the online intervention used a structured, guided self-help approach that may be appealing to students.

The Chinese-speaking support worker contacted participants each week to monitor their progress. These support emails used a standardised format for the “Welcome” email, and a structure based on encouraging the participants to systematically work through the course, taking time to make specific plans to apply what they have learned. Around this template the support worker could provide flexible support tailored to any concerns mentioned in reply emails. It was agreed the support would focus on using the online course to provide solutions, rather than offering any wider advice or counselling. Emails were written in Chinese, as this was expressed as important by participants in previous discussion, and copies of all emails were retained.

7.2.7 Outcomes and measurement

The main follow-up point was at 3 months with an additional follow-up assessment at 6 months (See Table 7-2). Baseline measures included age, gender, course type (Undergraduate/Post-graduate), ethnicity, mood, anxiety, social function, antidepressant medication, and current psychiatric treatment.

The following measures were completed online:

1). Patient Health Questionnaire-9 (PHQ-9 Spitzer, Kroenke and Williams, 1999):

The PHQ-9 is an open access mood rating questionnaire consisting of nine questions mirroring DSM-IV depression diagnostic criteria and each rated 0-3 giving a maximum score of 27. The use of PHQ-9 in Chinese general hospital outpatients showed a Cronbach's alpha coefficient of 0.857, suggesting the good internal consistency (Bian, Li, Duan and Wu, 2011). Cut-off scores are used to label depression severity as:

- 0-4, Minimal depression;

- 5-9, Mild depression;
- 10-14, Moderate depression;
- 15-19, Moderately severe depression;
- 20-27, Severe depression.

2). *Generalised Anxiety Disorder 7 (GAD-7 Spitzer, Kroenke, Williams and Lowe, 2006):*

The GAD-7 is a seven-item questionnaire focusing on symptoms of anxiety. Each item is rated according to the frequency of the described problem in the past 2 weeks. The responses are scored as follows: 0 = 'not at all', 1 = 'several days', 2 = 'more than half the days', 3 = 'nearly every day' with a maximum score of 21. A previous study examining use of the GAD-7 in Chinese general hospital outpatients found a Cronbach's alpha coefficient of 0.898 and the test-retest reliability was 0.856, indicating good reliability and validity (He, Li, Qian, Cui and Wu, 2010). Scores of 0-5 on this measure indicate mild anxiety, 6-10 = moderate anxiety, 11-15 = moderately severe anxiety and 15-21 = severe anxiety.

3). *Work and Social Adjustment Scale (WSAS Marks, 1986):*

The Work and Social Adjustment Scale (WSAS) assess social functioning. The WSAS is a five point questionnaire and addresses issues relating to the individual's everyday life and functioning and how their mood disorder is affecting these areas. Responses are given on a scale of 0-8, with higher scores indicating higher level of impairment. Those scoring over 20 are likely to have significant problems in their social functioning. The Cronbach's alpha coefficient of the Chinese version of WSAS with Chinese College students was 0.849 (Fang, Wo and Lin, 2005).

4). *The Client Satisfaction Questionnaire (CSQ-8 Nguyen, Attkisson and Stegner, 1983):*

The English language version of the CSQ-8 was administered post intervention as a measure of satisfaction. The CSQ-8 is an 8-item questionnaire, rated using a 4 point Likert scale. Scores range from 8-32, with higher scores indicating greater satisfaction with the intervention in question. The internal consistency of the CSQ-8, measured by Cronbach's alpha coefficient, ranged from 0.83 to 0.93 in English-speaking populations (Nguyen, Attkisson and Stegner, 1983).

Table 7-2: Measures taken during the study

Baseline	3 months	6 months
Demographic data	PHQ-9	PHQ-9
PHQ-9	GAD-7	GAD-7
GAD-7	WSAS	WSAS
WSAS	CSQ-8 (<i>IA group only</i>)	CSQ-8 (<i>DAC group only</i>)

In addition, a check of contamination (use of the website by the DAC), use of other online/book resources, and any adverse consequences of using the site in the IA arm were assessed at 3 months.

7.2.8 Statistical analyses

Demographic variables were compared for participants in the IA and DAC groups, including data on use/drop-out. All are described using descriptive statistics. The main outcomes in the substantive study were planned to be the PHQ-9 depression and GAD-7 anxiety measures. To inform the future study, the data collection and drop-out are required at the time of primary outcome (12 weeks), as well as calculating measures of effect of the intervention. Finally, after advice from Caroline Haig (statistician at the Robertson Centre), it was decided to complete linear regression analyses to test the effectiveness of the Chinese version of the LLTTF package. As a pilot study, we would not necessarily assume a positive result.

In the linear regression, baseline values for the PHQ-9, GAD-7 and WSAS measures included in the regression analyses were centred at the mean as suggested by Kraemer and Blasey (2004). Separate regression analyses were run with the relevant centred variables. The treatment conditions (immediate versus delayed access) were entered as the independent variables, and the follow-up scores for the relevant outcome measures as the dependent variables.

7.2.9 Ethical considerations

There are a number of ethical considerations that have been taken into account. Ethical approval was sought and granted by the University of Glasgow Institute of Health and Wellbeing Ethics Committee (Ref No. 200120022). Key ethical issues in the study include:

Recruitment: Recruitment used a project specific recruitment site, as well as emails, posters and other advertisements. This involved liaison and support from the University of Glasgow Counselling service, and the University Chinese Society. No individuals were recruited from NHS sites, and this model of recruitment could be widely introduced into University settings.

Consent: We only recruited participants who were aged 18 years or over. Participants will only be given access to the intervention once eligibility has been established and informed consent provided.

Risk management: The Participant Information Sheet gave suggestions for sources of additional/urgent support needed if the person felt they urgently needed help. This included contacting their GP, phoning NHS24, approaching student counselling, attending A+E or contacting the Samaritans. Additionally, the study website contains a tab detailing sources of urgent help.

Finally, all participants were assigned a Chinese-speaking support worker based at the University Student Counselling who contacted them each week to monitor their progress. Therefore, participants would have the opportunity to discuss any serious deterioration in their mood, in which case the support worker would inform the clinical lead of the project, CW, as well as offering support as usual within student counselling.

Confidentiality: Any personal information or collected data were kept in a locked filing cabinet in the researchers secure office or in password protected files or memory sticks which only the researchers have access to. Data sets used for analysis were held only participant ID numbers, not personally identifying information. Personally identifying information were linked to a study ID number and details kept in a separate password-protected Excel file. In order to ensure confidentiality and protect personal privacy, all electronic and paper versions of the original materials, including personal information, data, questionnaires, information sheets, consent forms, and copies of all emails from participants, the support worker, and research team, will be completely deleted or destroyed seven years after the research project is completed.

7.3 Results

7.3.1 Demographic statistics

We aimed to recruit up to 50 participants. Three of them in the IA arm dropped out after randomisation but before starting the intervention. Two participants in the DAC arm were excluded because they did not fulfill the inclusion criteria, with their scores being lower than required by the inclusion criteria. Therefore, results were calculated and described excluding these people.

All participating students were students registered at the Glasgow International College (GIC) (a language centre used to help undergraduate students pass required language courses before attending the University of Glasgow), or the University of Glasgow (GU), aged 18 years and above. Demographic characteristics for each sample have been described in Table 7-3.

Table 7-3 Demographic characteristics of participants

Variables	Groups		Significance statistics
	IA (n=23)	DAC (n=22)	
Males	11 (47.8%)	11 (50.0%)	$X^2 = 0.022, p = 0.557$
Females	12 (52.2%)	11 (50.0%)	
Age (Years)			$t = 0.788, p = 0.218$
M (SD)	25.23 (2.91)	23.71 (2.52)	
Education			$X^2 = 3.183, p = 0.182$
English language centre (GIC)	2 (8.7%)	3 (13.6%)	
Undergraduate (GU)	5 (21.7%)	8 (36.4%)	
Postgraduate (GU)	12 (52.2%)	10 (45.5%)	
PhD (Glasgow University)	4 (17.4%)	1 (4.5%)	
Previous mental health treatment			$X^2 = 2.154, p = 0.171$
No previous support	7 (30.4%)	10 (45.5%)	

Support from friends/families/self-help resources	11 (47.8%)	10 (45.5%)	
Professional support (psychotherapies/counselling)	5 (21.7%)	2 (9.1%)	
Taking antidepressants at baseline	0 (0.0%)	0 (0.0%)	None
Language preference for online sources			$X^2 = 0.302, p = 0.430$
Chinese/Mandarin	15 (65.2%)	14 (63.6%)	
Chinese/Cantonese	6 (26.1%)	5 (22.7%)	
English/English	2 (8.7%)	3 (13.6%)	

Based on demographic statistics, 37.8% of the participants reported receiving no support for mental health difficulties before participating in this study, while 46.7% mentioned that they have received various types of support from their friends, families or self-help resources. Only 15.6% of the participants reported that they had received psychotherapies or counselling before.

Comparison between groups at baseline showed no clinically significant differences between the IA and DAC groups in terms of gender (Chi test), age (independent t test) and other key demographic variables (see Table 7-3).

It is worth mentioning that all DAC group participants did not receive any mental health treatment, consult their GP, or take an antidepressant during the delayed waiting period. These participants said that because of their academic assignment, they did not pay much attention to the research project during the waiting period, but only completed their PHQ-9 and GAD-7 at the beginning.

7.3.2 Use of the site in both IA and DAC groups

Data reflecting completion of the online modules are summarised in Table 7-4. It is believed that 45 participants both in the IA and DAC arms have completed all 8 main modules, with 2 in the IA group and 1 in the DAC group missing the welcome module.

Table 7-4 Use of the site in both IA and DAC groups

Use of the site	Groups	
	IA (n=23) completed immediately	DAC (n=22) completed after a 3-month delay
Completion of the Welcome module	21 (91.3%)	21 (95.5%)
Completion of the 8 main modules	23 (100%)	22 (100%)

7.3.3 Support help received from the support worker

The support worker sent weekly emails routinely to every IA and DAC participants over 6 weeks. Figure 7-1 summarises the number of emails sent to the support worker from the IA and DAC arms participants (n=23/n=22) during the support period over 6 weeks. It is reported that only 3 participants in the IA arm failed to reply to the support worker before starting the intervention. The majority of participants (18 in the IA group and 19 in the DAC group) replied more than three emails to the support worker (six support emails in total) during the support period.

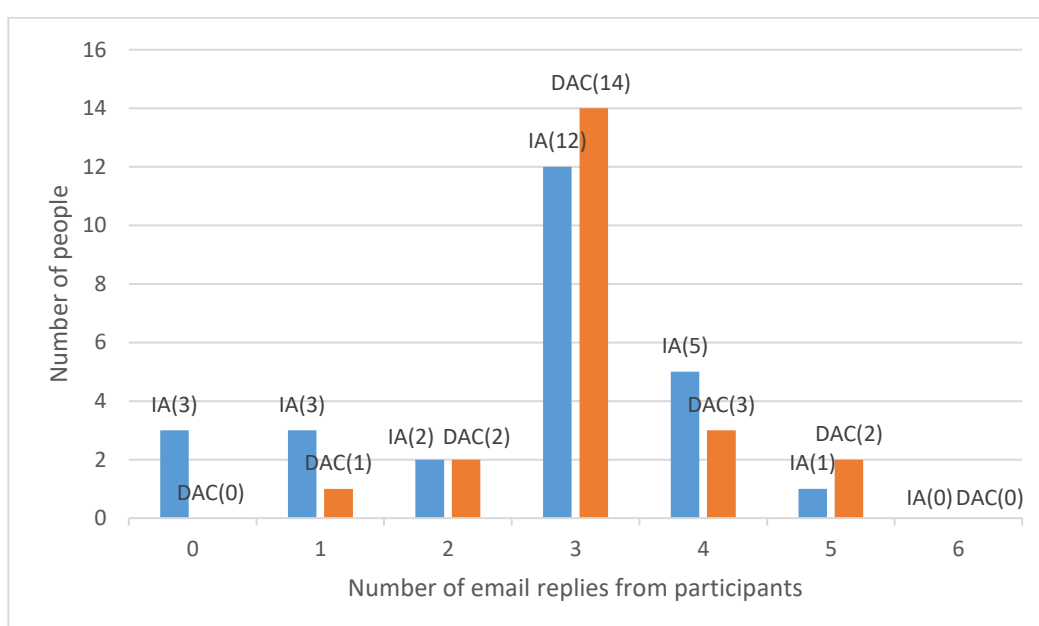


Figure 7-1 The number of email replies from participants

7.3.4 Before-after changes in key questionnaires scores

Table 7-5 summarises baseline and follow-up changes in questionnaire scores. Pre- and post-treatment means and standard deviations (SDs) for the overall PHQ-9 (the proposed future primary outcome), GAD-7 and WSAS measures between baseline and 12 weeks for participants grouped by intervention condition are shown in Table 7-5.

**Table 7-5 Means and SDs for total PHQ-9, GAD-7 and WSAS measures
grouped based on treatment condition**

	Groups			
	IA (n=23)		DAC (n=22)	
	Mean	SD	Mean	SD
PHQ-9				
Pre-treatment	5.63	0.91	5.50	0.80
3-month	3.91	0.72	5.41	1.05
6-month follow-up	3.30	0.86	3.95	0.84
GAD-7				
Pre-treatment	5.09	0.79	5.36	0.73
3-month	3.57	0.77	5.23	0.81
6-month follow-up	3.48	0.50	3.36	0.66
WSAS				
Pre-treatment	24.57	4.20	24.27	3.92
3-month	20.74	2.80	24.73	2.71
6-month follow-up	20.04	2.48	20.59	3.79

Table 7-6 T test for the two groups for measures

Measure and group	Pre to 3-month within group t test (<i>p</i>)	3-month to 6-month follow-up within group t test (<i>p</i>)	Baseline between group t test (<i>p</i>)
PHQ-9			$t = -0.25, p > 0.05$
IA (n=23)	8.478 ($p < 0.01$) **	2.366 ($p < 0.05$) *	
DAC (n=22)	0.322 ($p > 0.05$)	5.054 ($p < 0.01$) **	
GAD-7			$t = -1.068, p > 0.05$
IA (n=23)	5.893 ($p < 0.01$) **	0.439 ($p > 0.05$)	
DAC (n=22)	0.587 ($p > 0.05$)	8.361 ($p < 0.01$) **	
WSAS			$t = 0.239, p > 0.05$
IA (n=23)	6.223 ($p < 0.01$) **	2.194 ($p < 0.05$) *	
DAC (n=22)	-0.448 ($p > 0.05$)	4.165 ($p < 0.01$) **	

Notes: * $p < 0.05$; ** $p < 0.01$

The mean depression and anxiety scores for both groups at baseline were similar, with slightly above the score of 5 for mild depression and anxiety (see Table 7-5). There were no significant differences between IA and DAC groups for PHQ-9, GAD-7 and WSAS at baseline ($p > 0.05$), but there were significant differences between IA and DAC groups for all measures at 3 months follow-up (see Table 7-6 and 7-7).

7.3.5 Statistical analysis of treatment effects

Both IA and DAC groups showed the decrease in levels of depression and anxiety symptoms after taking the online package. The mean PHQ-9 depression scores in the IA group significantly decreased from 5.63 to 3.91 ($t_{(22)}=8.478, p < 0.01$), while remaining relatively stable from 5.50 to 5.41 ($t_{(21)}=0.322, p > 0.05$) in the DAC group at 3-month follow-up.

During the same time period the GAD-7 anxiety scores showed similar significant improvement in the IA group from 5.09 to 3.57 ($t_{(22)}=5.893$, $p<0.01$), and showed no significant change in the DAC group from 5.36 to 5.23 ($t_{(21)}=0.587$, $p>0.05$).

The mean WSAS scores in both groups at baseline were above 20, reflecting significant problems in social functioning. WSAS scores in the IA arm decreased significantly from 24.57 to 20.74 ($t_{(22)}=6.223$, $p<0.01$) from pre-treatment to 3-month follow-up, compared to no decrease in the DAC arm from 24.27 to 24.73 ($t_{(21)}=0.448$, $p>0.05$).

After 12 weeks, the DAC group participants began to receive treatment and support using the online site. Both arms were then followed up to another 12 weeks providing two useful sources of data (between 3 months and 6 months follow-up):

1. In the IA arm, changes were sustained over a follow-up period of an additional 3 months ($t_{(22)}=2.366$, $p<0.05$; $t_{(22)}=0.439$, $p>0.05$; $t_{(22)}=2.194$, $p<0.05$);
2. In the DAC arm, participants showed similar benefits after they received access to the intervention.

After the completion of delayed treatment, the DAC group showed significant reduction in PHQ-9, GAD-7 and WSAS scores from 3-month to 6-month follow-up (see Table 7-5 and 7-6, $t_{(21)}=5.054$, $p<0.01$; $t_{(21)}=8.361$, $p<0.01$; $t_{(21)}=4.165$, $p<0.01$).

Interactions between group membership and time of assessment in PHQ-9, GAD-7 and WSAS are illustrated in Figures 7-2, 7-3 and 7-4.

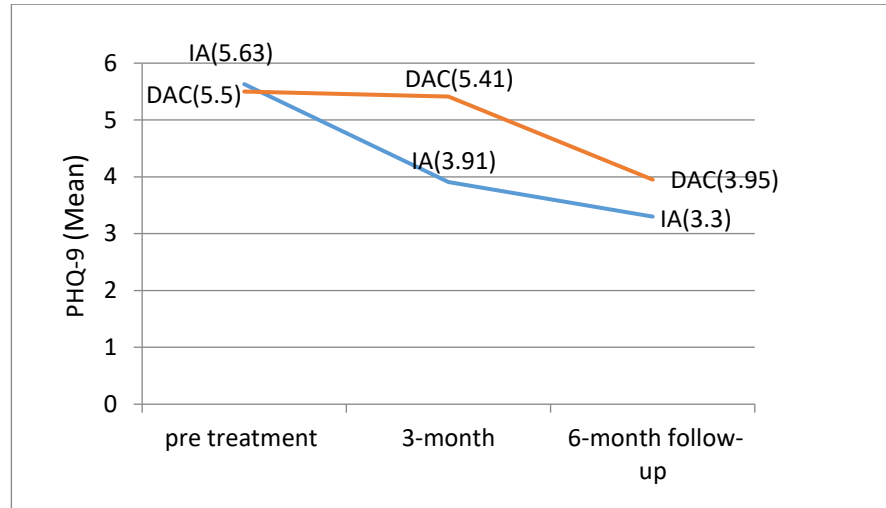


Figure 7-2 Effect of treatment on change in PHQ-9

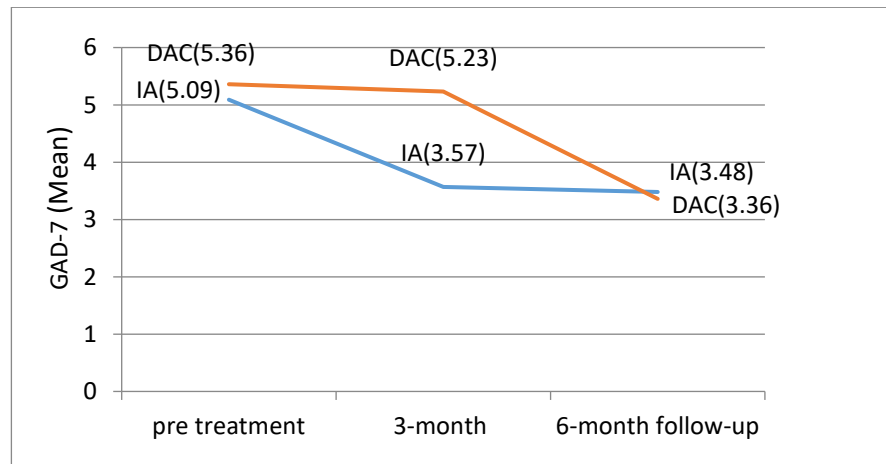


Figure 7-3 Effect of treatment on change in GAD-7

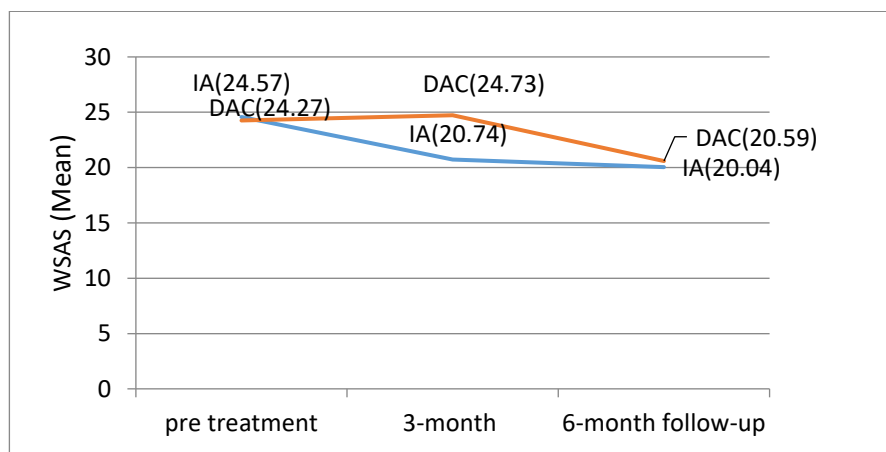


Figure 7-4 Effect of treatment on change in WSAS

Table 7-7 shows linear regression analyses for the overall PHQ-9, GAD-7 and WSAS

measures, indicating significant effects for treatment on levels of depressive and anxious symptoms between IA and DAC groups at 3 months follow-up. The linear regression analyses indicated that there were significant differences between IA and DAC groups for PHQ-9, GAD-7 and WSAS at 3 months (see Table 7-7, $F_{(2, 42)}=28.179, p<0.01$; $F_{(2, 42)}=129.813, p<0.01$; $F_{(2, 42)}=49.847, p<0.01$). The PHQ-9, GAD-7 and WSAS scores decreased significantly from pre-treatment to 3-month follow-up for participants in the IA group, with non-significant effects for these measures in the DAC group (see Table 7-6).

Table 7-7 Linear regression analysis summary of primary outcome variables (at 3 months)

	B	SE	B	F (p)	T (p)
PHQ-9	-0.611	0.127	-0.481	28.179 (0.000) **	-4.796 (0.000) **
GAD-7	-0.653	0.052	-0.732	129.813 (0.000) **	-12.650 (0.000) **
WSAS	-0.471	0.071	-0.552	49.847 (0.000) **	-6.585 (0.000) **

Notes: * $p<0.05$; ** $p<0.01$

7.3.6 The impact on higher scorers (“cases”) of depression and anxiety

In view of the low initial mean scores at entry, it was initially planned that a sub-analysis would be completed to describe the impact of the online package on those initially scoring more than 9 on the PHQ-9 and GAD-7 (i.e. presenting with a score of 10+ representing moderate depression). However, none of the recruited sample scored in this range, and it was not possible to complete this analysis.

7.3.7 Satisfaction with the intervention

A self-administered questionnaire, the Client Satisfaction Questionnaire (CSQ - 8) (Nguyen, Attkisson and Stegner, 1983), was used to evaluate participants’ satisfaction with the Chinese version of the LLTTF intervention. Higher scores indicate higher satisfaction. Participants in both the IA and DAC groups reported high satisfaction with the intervention, with scores

of M= 23.39 (SD= 1.01) in the IA group at 3 months, and M= 23.41 (SD= 1.10) in the DAC group at 6 months after the 3-month intervention.

Moreover, in the weekly support emails, students' views on gains after participating in the course have been mentioned. Questions such as “whether you can successfully complete this course” and “whether you have gained something from the course” were asked in the support emails. The majority of the participants reported they were willing to complete the course, and appreciated the content and settings of the course in the reply emails. Almost all the students replied that they have learned some life skills (including the Five Areas model, emotional control skills, Easy 4 Step Plan, problem-solving skills) from the online intervention, which have helped them solve some of the difficulties in their daily lives. Specifically, some students said that they have applied techniques taught in the course for managing their anger, resolving practical problems, and improving mood states in real life, which has positively impacted their overseas study and life.

7.3.8 Data collection rates at 3 and 6 months

An element of the study is to test the ability to recruit, deliver and gather data (evaluations) through the pilot. Data gathering rates are described in Table 7-8.

Table 7-8 Data gathering rates

	Percentage of returned questionnaires	
	IA (n=23)	DAC (n=22)
At baseline	23 (85.2%)	22 (91.7%)
At 3 months	23 (100%)	22 (100%)
At 6 months	23 (100%)	22 (100%)

7.4 Discussion

This study aimed to investigate take-up, drop-out and completion rates of the online course, and to explore the efficacy of the Chinese version of the *Living Life to the Full* (LLTTF) package for Chinese-speaking international students.

7.4.1 Recruitment, randomisation and ability to obtain data at follow-up

In testing the feasibility of delivering a larger version of the pilot study, we have tested the key elements of delivery. We were successfully able to recruit 45 people in 6 months using local posters, adverts and word of mouth, suggesting that a future larger study could successfully recruit participants.

7.4.2 Is it likely the package has a helpful impact on low mood and anxiety?

The original English version of the LLTTF package had been empirically examined in a UK sample and showed effectiveness in reducing users' low mood, stress, anxiety and depression levels when delivered face-to-face in classes (Williams et al., 2013). Based on the results, the Chinese online version of the LLTTF intervention showed statistically significant effectiveness in reducing participants' scores on depression and anxiety questionnaires from pre- to post-treatment. All participants however scored only as experiencing mild depression at baseline (scores 5-9). They are not therefore a particularly unwell group -- falling below thresholds where a depression diagnosis would be considered or where antidepressant medication might be offered.

According to the results of this study, there are drops of 1.72 points and 1.55 points from baseline to 3 months follow-up on the PHQ-9 and GAD-7 scores after treatment. Although statistically significant effectiveness of the LLTTF has been shown, the baseline scores are so low, at best it is possible to conclude that the package shows some benefits in those using it, however interpretation is made difficult by the low initial scores, meaning that scores reflect, with a drop from mild to no symptoms category.

No participants in this study met PHQ-9 and GAD-7 criteria for moderate/severe levels of depression and anxiety, with baseline scores slightly above 5 in both IA and DAC groups, regarded as mild depression and anxiety. Therefore, the decline in the scores represented only minor gains. The statistical findings support the likely helpful impact of the Chinese version of the LLTTF package however more research is required- especially of those with

higher initial depression and anxiety scores.

The results of the improved anxiety, depression and social function scores, plus high satisfaction responses and participants' positive views on the intervention mentioned in emails made it clear that participants were satisfied with the online package, and reported that they had benefited after receiving the treatment. These findings are encouraging, and suggest that for some Chinese-speaking international students, at least, this package led to benefits. The overall improvements in the current study are consistent with low-Intensity CBT resources reducing mental health problems like stress, anxiety and depression in Chinese-speaking populations (see Chapter 5). However further research is needed to test the impact of the study in a more severely unwell sample.

Three participants dropped out from the IA group because they did not respond to our research team at three months, and two from the DAC group since they did not meet the inclusion criteria with the scores of 5+ on the PHQ-9 and GAD-7. Many participants said that they had to complete academic assignments at the same time as receiving treatment, which could lead them to forget to reply to the weekly support emails, and fail to continue taking the course. This can be a factor in understanding the drop-out. Furthermore, all participants actively took part in this research project through Glasgow University Counselling and Psychology Service or through posters, direct emails and internet advertisements, and completed the program without any payment in three months time. These participants may have been highly motivated to follow the self-help intervention before they were able to use the LLTTF package, and their high levels of motivation may have decreased after long-term use of the LLTTF package.

7.4.3 Can we deliver support, and encourage users to complete the online package?

Based on previously discussed studies relating to self-help resources for depression and anxiety, it is suggested that self-help intervention resources, accompanied with effective and acceptable support, can be efficient for motivating users to engage in treatment (Newman et al., 2011). In the current study, results have shown low drop-out and high completion rates for the intervention in both groups. The support is protocol driven and focused on encouraging use and application of the intervention; and the weekly contacts from the support worker may have added a sense of commitment, support, encouragement and

potentially responsibility to work on the package.

Moreover, as stated earlier, Chinese people have great respect for professionals, authority and experts, and prefer an educational model when receiving the intervention (Kam and Ng, 2009). Consequently, the LLTTF package, with a focus on teaching useful life skills and making changes in participants' lives, supported by professional support workers, seems to be appealing to Chinese students to continuous use. Its educational model fits well with Chinese students' preferred "student" role and learning style. Moreover, the life skills they learned in online sessions and practised at home are practical. These perhaps explain the exceptionally good (100%) completion and retention rates. However, these figures are far better than those reported in other populations (McClay et al., 2015; Williams et al., 2014; Pittaway et al., 2009) where often only one or two modules in a course are completed.

7.4.4 Are any mood changes sustained?

At the 6-month follow-up point, statistical analyses revealed that scores on the PHQ-9, GAD-7 and WSAS were sustained in the IA group, and nearly 85% of the IA group participants no longer met scores for any symptoms of depression and/or anxiety (i.e. scored less than 5 on the PHQ-9 and the GAD-7). These results were obtained with less than 1 hour of total staff support time for each participant, which is considerably less than typically required in face-to-face treatments. Potential savings of treatment time can be achieved by using the self-help computerised intervention website and off-course materials, which teach many life skills and provide information usually taught by the therapist.

7.4.5 Why were initial scores for depression and anxiety so low?

Interestingly, a large proportion of participants using the LLTTF package failed to meet PHQ-9 and GAD-7 criteria for high levels of depression and anxiety, with baseline scores slightly above 5 in both IA and DAC groups, compared to previous Western-based cCBT program samples (Clark et al., 2009; Robinson et al., 2010). Although the Chinese versions of the PHQ-9 and GAD-7 have been demonstrated as valid screening tools for symptoms of depression and anxiety amongst Chinese-speaking populations (Bian et al., 2011; He et al., 2010), these may not have been sensitive screening tools in our sample.

It is possible that Chinese-speaking populations have higher PHQ-9 and GAD-7 thresholds for reporting depression and anxiety due to cultural differences in expression of symptoms, and fears of social stigma and shame (Chang et al., 2008; Liu, 2009). For example, as mentioned in the previous literature and focus group study (see Chapter 6), Chinese-speaking international students prefer to report physical symptoms such as tiredness, headaches, sleeping difficulties and poor appetite. Some describe seeking medical help for physical complaints even when they acknowledged possible underlying psychological causes. The higher rates of subclinical cases may perhaps reflect lower mental health literacy among the Chinese-speaking sample in recognising the symptoms of mental health problems and seeking appropriate services. Moreover, based on the previously discussed Kramer et al. study (2002), in Chinese culture, mental illness is stigmatising; it reflects personal weakness and can influence an individual's expression and recognition of mental health problems. Therefore, Chinese individuals might avoid excessively exhibiting their emotional and mood problems in avoidance of losing face.

The Chinese version of the PHQ-9 and GAD-7 used in the study are translations of the PHQ-9 and GAD-7 questionnaires developed in the USA and based on DSM-IV (Spitzer, Kroenke and Williams, 1999) depression and anxiety criteria. It might be therefore the content asking about areas of life that are not perceived to have altered during times of depression and anxiety, and relatively overlooking the more “physical” presentation often described amongst the Chinese-speaking population. For example, the PHQ-9 comprises 9 questions, of which only four (or five if concentration is included) are clearly seen as more “physical” than emotional or cognitive aspects of depression (which make up the majority of the other questions). It is possible therefore that in this population there is an under-scoring of depression and anxiety.

It is also possible students underplayed mood symptoms but more accurately reflected social impacts of low mood (i.e. the WSAS scores showed greater initial impairment than anxiety or depression). According to previous studies reviewed in Chapters 2-3, it is believed that Chinese clients are more used to analysis of their physical or practical problems rather than the expression and sharing of their inner thoughts and feelings (Kam and Ng, 2009; Liu, 2009). These emotional and affective feelings tend to be presented through individuals’ physical complaints or complaints about their interpersonal relationships and practical problems of social life. Referring to the WSAS, individuals’ ability to do certain day-to-day tasks in their lives, such as ability to work, home management, private leisure activities and

close relationships, are focused and rated. Under these influences, it is possible Chinese international students accurately rated social impacts of low mood, and showed greater WSAS initial impairment than anxiety or depression.

Future studies could use more sensitive screening tools for measurement. This might include culturally sensitive clinical interviews such as the SCAN/Present State Examination interview, developed by the World Health Organization to detect depression across different cultures (Wing et al., 1990). A final possibility is that we failed to recruit a depressed or anxious population, and that only those with low scores were interested in joining the study—perhaps to improve their study and English language skills. Additionally, participants in this study are ordinary Chinese international students recruited directly from the University, we cannot confirm whether these students could be diagnosed with high levels of depression and/or anxiety. It may be to do this we would need to recruit in other ways, such as recruiting Chinese-speaking students already attending practitioners or GPs for treatment.

7.4.6 Possibility of contamination

In this pilot RCT study, DAC group participants would be given access to the online course after a delay of 3 months. According to the results, no DAC group participants received any mental health treatment, consulted their GP, or took an antidepressant during the waiting period, which could avoid additional effects coming from other treatments. However, although participants did not receive other forms of treatment during this waiting period, there also seems to be a possibility that contamination may have occurred. Although students were not able to access the LLTTF package itself as this was locked unless a registration code was entered, perhaps some participants might have gained information from the recruitment website and evaluation questionnaires, or other independent sources like internet. When DAC group participants begin to receive the treatment, they may be affected by such information, which could confound the results.

7.4.7 Satisfaction with the intervention

Based on scores from the CSQ-8, and participants' views on the intervention mentioned in emails, participants in both groups showed high satisfaction with the use of the Chinese version of the LLTTF package. They viewed this intervention package as attractive,

acceptable, culturally adapted and easily accessible. Students replied that they have learned some life skills from the online intervention, which have helped them solve some problems and difficulties in their daily lives. In these circumstances, it is believed that the Chinese version of the LLTTF package has incorporated cultural expressions and beliefs to make this package acceptable and relevant to Chinese-speaking populations, which is likely to improve the possibility of engagement in treatment and promoting adaptive coping skills among this group of students.

7.5 Conclusion

The results of this chapter have supported the effectiveness of the LLTTF package. It is believed that the LLTTF intervention (Chinese version) shows significant effectiveness in reducing Chinese-speaking international students' symptoms of depression and anxiety, and this improvement can be sustained during the follow-up period. The results of the pilot study relating to changes in PHQ-9 and GAD-7 scores could inform and guide practitioners about the mental health needs of Chinese international students and the difficulties faced when they study overseas. However, the current study has limitations in sampling and controlling the contact between participants and research assistants. Future in-depth studies could examine the Chinese version of the LLTTF package in a larger, representative sample. Given that the current study used self-selected samples, and the research took place in a single University in Scotland, the findings cannot be generalised to populations from hospitals or outpatient clinics in other settings.

The overall results support the effectiveness of the LLTTF package (Chinese version) and provide preliminary evidence for the efficacy and acceptability of this intervention protocol for treating symptoms of depression and anxiety among Chinese-speaking international students.

Chapter 8: Overview, discussion and recommendations for further research

8.1 Overview of the thesis

The current research project has investigated the evaluation and treatment of low, depressed and anxious mood in Chinese-speaking international students studying in Scotland, and tested the delivery of an educational life skills package, *Living Life to the Full* (LLTTF) – Chinese version, with the option of Mandarin and Cantonese Chinese language resources.

Based on previously reviewed background chapters (Chapters 1-3), it has recommended the use of self-help resources based on a cognitive behavioural therapy (CBT) model for low mood, anxiety and depression, and suggested the need to culturally adapt CBT treatments for Chinese-speaking populations. However, the effectiveness of cCBT resources for use in Chinese-speaking populations has only been investigated to a limited extent (Choi et al., 2012; Kwok et al., 2014). There was a need therefore to complete a systematic review of the evidence base to date concerning cCBT used in Chinese-speaking populations.

Low-intensity interventions offer the possibility of widening access to support for the Chinese-speaking populations, and the evidence base for low-intensity CBT resources in this population has been reviewed in a systematic review (Chapter 5). This specifically examined low-intensity CBT resources, such as CBT manuals, computerised CBT, and guided self-help, for use in Chinese-speaking populations.

The findings indicated that low-intensity CBT resources, such as the self-help websites, online courses, and skills training DVDs, seem to be effective in reducing mental health problems such as stress, anxiety, depression, and PTSD among Chinese-speaking populations. However, no work, to date, has examined specifically low-intensity CBT resources, especially the computerised CBT resources, for use in Chinese-speaking international students. There is a need therefore to produce and evaluate an intervention for such students facing low mood and anxiety.

8.1.1 The focus groups and creating a culturally tailored package

Content from a pre-existing widely used free-access website was used. The *Living Life to the Full* Chinese version intervention is an online set of resources including e-books, printable worksheets – together with linked audio modules. The package contains eight modules plus a welcome module that teach a range of CBT-based life skills. Each Module involves slides with images and audio and takes between 25-45 minutes to complete. Each focuses on a different common problem faced by people when they feel low, anxious or depressed.

However, before evaluating the package, a degree of cultural adaptation was required. It may be that the content of any CBT resources, like the Chinese version of the LLTTF package, need to be adapted to address and engage Chinese-speaking populations, such as Chinese-speaking international students. This may involve adaptations to fit the Chinese-speaking students' lifestyle, as well as changes to reflect their different understanding and expression of distress. Also, more information is required regarding the support types needed in this group of students. The focus group study tested the attitudes of Chinese students towards the mental health problems, and Chinese version of the LLTTF package.

The findings of this focus group study have provided an in-depth understanding of how Chinese-speaking international students conceptualise mental health problems like stress, low mood, anxiety and depression. The focus group study has also explored students' attitudes towards the online intervention, recruitment website and support types required, and identified further cultural adaptations of the LLTTF package (Chinese version) required to reflect cultural differences in expression of low mood, anxiety and depression, as well as adaptations to fit Chinese-speaking international students' lifestyle and preference. In addition, key aspects of the planned pilot randomised controlled study have been clarified, including problems of acceptability, delivery of the intervention, recruitment and retention, supporting the course, and language preference.

Specifically, the focus group study identified a number of educational, social and interpersonal changes, and challenges including language difficulties, academic difficulties, and poor management skills as the main perceived causes of mental health problems. Language difficulties appear to be one of the most challenging issues for these Chinese-

speaking international students. They strongly expressed a preference to receive all support types and therapies in Chinese language.

Importantly, Chinese students were comfortably using terms such as anxiety and depression, but, like UK-born students, had limited knowledge of clinical diagnosis and effective treatment of depression and anxiety. Students also stated that when experiencing mental health related problems, few of them would seek help from others. The findings support the view that the stigma of mental illness, that is, feeling embarrassed and losing face, may prevent Chinese international students from seeking mental health services (Liu, 2009). These students may choose to keep their emotional problems or difficulties to themselves because they may imply personal failures (Heppner, et al., 2006). Referring to these students' attitudes towards the online intervention, they positively evaluated the design, colour, layout, website, interactive aspects, and existing support types of the LLTTF package. Different support types including weekly support emails, live chat, and telephone support were also suggested by this group of students.

This focus group study suggested that delivering an online CBT (the Chinese version of the LLTTF package) to Chinese-speaking international students who report mild to moderate low mood, anxiety and depression may be a feasible, acceptable and desirable way to help them. The study also sought participants' comment on the course content in order to understand how best to provide support that engages and encourages to use. Moreover, Chinese language translation and weekly email support were identified as important additions to the online course. The results of the focus group study helped inform the next step of the thesis, which involved adaptations to fit Chinese-speaking international students' lifestyle and different understanding of distress (smartphone deliverable, simple, common and colloquial Chinese language, Chinese cases and Chinese language support emails encouraging use and application of the intervention).

8.1.2 The pilot study

The pilot trial has clarified many areas of uncertainty of the Chinese version of the *Living Life to the Full* course that would need to be addressed before moving to a future larger substantive study. For example the ability to recruit Chinese-speaking international students, deliver the Chinese version course and support the course, and gather baseline and follow-up data.

Chinese-speaking international students based in the West of Scotland and experiencing symptoms of depression and/or anxiety were successfully recruited in the pilot RCT study. Both those diagnosed with depression and anxiety as well as those with raised mood scores without a formal diagnosis were included. In the pilot study, the take-up, drop-out and completion rates of the online course, and the completion rates for data collection have been investigated. Changes in the Patient Health Questionnaire 9 (PHQ-9) and the Generalised Anxiety Disorder 7 (GAD-7) scores reflecting the effect of the intervention on depression and anxiety levels were used. The pilot study has confirmed the feasibility of the study design – it is possible to recruit Chinese-speaking international students from a University setting, randomise participants and collect data at baseline, 3 months and 6 months.

The Chinese version of the LLTTF intervention showed significant effectiveness in reducing participants' symptoms of depression and anxiety from pre- to post-treatment. However, the mean levels of depression and anxiety at baseline were low (mild symptoms). This might reflect the sample recruited – perhaps those with lower scores were happy to present with “stress” whereas those with more severe depression perhaps avoided volunteering for the study. It is difficult to know whether high scoring students avoided the study because of stigma, or whether they were not reached using the advertising approach we undertook. However, adverts were placed and disseminated via Student Counselling, so it is possible higher scoring students are not presenting their depression and/or anxiety at all, which could be examined in the future study.

It is also possible that Chinese-speaking populations have higher PHQ-9 and GAD-7 thresholds for reporting depression and anxiety due to fears of social stigma and shame (Kramer et al., 2002; Chang et al., 2008; Liu, 2009). Based on Kramer et al.'s study (2002), in Chinese culture, mental illness is stigmatising; it reflects personal weakness and can influence an individual's expression and recognition of mental health problems. Therefore, this group of students might avoid excessively exhibiting their emotional and mood related problems in avoidance of losing face. This may explain the relatively higher social impairment – but only mild symptoms of depression and anxiety identified at baseline.

Another possibility is that the rating scales fail to detect higher levels of depression and anxiety correctly. The Chinese version of the PHQ-9 and GAD-7 used in the study are direct translations of the PHQ-9 and GAD-7 questionnaires - questionnaires developed in the USA and based on DSM-IV (Spitzer, Kroenke and Williams, 1999) depression and anxiety criteria.

It might be therefore the content asking about areas of life that are not perceived to have altered during times of depression and anxiety, and relatively overlooking the more “physical” presentation often described amongst the Chinese-speaking population. For example, the PHQ-9 comprises 9 questions, of which only four (or five if concentration is included) are clearly seen as more “physical” than emotional or cognitive aspects of depression (which make up the majority of the other questions). It is possible therefore that in this population there is an under-scoring of depression. This could have been clarified by undertaking a clinical interview of all participants in the research using a validated approach used previously and successfully in international diagnostic trials (such as the Present State Examination or SCAN interviews Wing et al., 1990). The current PhD which was unfunded lacked the resources and capacity to complete this however. The study was however able to successfully recruit the proposed sample size for the pilot, with participants who met the entry criteria.

Furthermore, the study has tested the extent that how much participants adhere to the online intervention. Results have shown low drop-out rates and high completion rates for intervention in both groups. With weekly support reminder emails, participants were encouraged to continue using the intervention. In addition, participants in both groups reported high satisfaction with the use of the Chinese version of the LLTTF package. They viewed the intervention package as attractive, acceptable, culturally adapted and easily accessible, and they were willing to keep working on the intervention package. Based on the previously discussed literature, Chinese people have great respect for professionals, authority and experts, and prefer an educational model when receiving the intervention (Kam and Ng, 2009). Consequently, the LLTTF package (Chinese version), with a focus on teaching useful life skills and making changes in participants’ lives, supported by a professional support worker, seems to be appealing to Chinese students.

In general, the overall results support the effectiveness of the LLTTF package (Chinese version) and provide preliminary evidence for the efficacy and acceptability of this intervention protocol in reducing depressive and anxious symptoms among Chinese-speaking international students.

8.2 Implications of the thesis

8.2.1 Importance of the project

Based on the current research project, it has been possible to modify and successfully test the Chinese version of the LLTTF package. This has incorporated cultural expressions and beliefs to make the package acceptable and relevant to Chinese-speaking international students, which is likely to improve the possibility of engagement in treatment and promote adaptive coping skills among this group of students. The project successfully recruited into the study and gathered data and has helped inform whether an online low-intensity CBT approach can increase access to treatment in this population. However, the sample evaluated scored far lower than expected on baseline depression and anxiety levels. In spite of this, positive improvements in PHQ-9 and GAD-7 ratings were found.

8.2.2 Knowledge added to the literature

This is the first study using cCBT for Chinese-speaking international students, and the results therefore add significantly to the current knowledge base. New learning relates to Chinese-speaking international students' perceptions of mental health problems, and cultural adaptation of the online intervention package.

However some significant questions remain. It is uncertain if the low baseline scores of those entering the study (mean scores reflecting “mild” symptoms) truly reflect minor symptoms. Perhaps the students recruited were not that depressed. If so, why did we not manage to recruit those with higher scores (as discussed earlier)? Or was this an issue to do with the failure of the rating scales used to adequately describe depression and anxiety as presented by Chinese-speaking students?

However, we do know that those who used the package liked it, engaged with it, and showed improvement in mood and anxiety scores. It may be therefore that the resource is best targeted as a universal intervention to all in an academic year, rather than just at those with high scores. The package might also potentially offer a preventative effect, reducing the risk of depression and anxiety occurring. There is currently significant interest in the use of online resources as preventative measures - including in students (e.g. Musiat et al, 2014). This study is an interesting one because it provided an online course to aim to reduce the

likelihood of mental health disorders occurring as the course progresses. We could explore this preventative effect in future follow-up studies.

8.2.3 Limitations

The research project has limitations in sampling and recruiting those with higher baseline levels of depression and anxiety, and in controlling the contact between participants and research assistants. Future in-depth studies could examine the Chinese version of the LLTTF package in a larger sample as part of the substantive randomised controlled study.

Importantly, a large proportion of participants in the study failed to meet PHQ-9 and GAD-7 criteria for high levels of depression and anxiety, with scores usually in the milder scoring range on both the PHQ-9 and GAD-7. Future studies could use more sensitive screening tools for measurement, such as the Present State Examination or SCAN interviews (Wing et al., 1990), and as outlined previously, cultural differences in the expression of symptoms of mental health problems among Chinese-speaking populations should be concerned during the assessment.

8.2.4 Future work

Future work could focus on producing high quality studies investigating how cCBT can be effectively implemented in existing healthcare systems, and clarifying whether the culturally adapted cCBT can provide particular benefits in treating mental health problems in Chinese-speaking international students.

Two possible models for future delivery and evaluation are therefore:

- 1). As an “universal” preventative approach offered to all students. The advantage of this is that it would avoid the issue of how to detect specific “at risk” students, and mean that access is open to all, even if they have not self-presented for help with low mood or stress. The current study confirms benefits in terms of mood scores, and it would be expected such changes could reduce the likelihood of future episodes of depression or anxiety.
- 2). Focus the intervention on those with higher scores. The current study suggests that the package can reduce depression and anxiety scores, however the mean baseline scores for

both were low. We were not able in this pilot study to recruit students with consistently higher scores of depression and anxiety at baseline. It may be to achieve this we would need to recruit in other ways, or change the study (for example delivering the package to those Chinese-speaking students already attending a practitioner for treatment).

Overall, the study suggests firstly that the package can effectively reduce depression and anxiety scores, and in addition has provided a valuable source of additional qualitative information that can inform and guide practitioners about the mental health needs of Chinese-speaking international students and the difficulties facing when they study overseas.

Participation within this project allows Chinese-speaking international students who are experiencing mild to moderate symptoms of anxiety and depression to take part in an online CBT-based course for stress and low mood in their own language. The completion and satisfaction data can help us to gain a key insight into how the online website can be best delivered and supported in this setting.

Given that the Chinese version of the LLTTF package is viewed as acceptable and easily accessible, it is suggested that University student centres and local mental health services could consider incorporating this culturally attuned intervention package into future models of service delivery among Chinese-speaking international students as a universal intervention.

8.3 Conclusion

Studies within this thesis provide preliminary support for the short-term treatment efficacy of the Chinese version of the LLTTF intervention package. Based on the results, it is believed that delivering the LLTTF intervention (Chinese version) to Chinese-speaking international students who report mild low mood, anxiety and depression may be a feasible and desirable way to help them. This is based on the significantly improved anxiety and depression scores, and a high level of acceptability of the package. Although those recruited had only mild levels of anxiety and depression, these improved as did social function and may have prevented some from developing more severe depression. Further study is needed to investigate the long-term efficacy of the Chinese version of the LLTTF package in larger samples and explore the influence of different application modalities, like the involvement

of mental health professionals, in the use of this package. Ways of identifying those with higher baseline depression and anxiety would also be helpful. I hope this thesis will make a difference and is recognised as my attempt to have a positive influence on the scientific and mental health communities. Indeed, I hope that this thesis has suggested several possibilities for addressing the mental health problems of Chinese-speaking international students.

Appendix 5.1: Clinical Trials Assessment Measure (CTAM)

Paper:

Rater:

Trial design area	Item	Score
Sample —two questions: maximum score 10	Q1: is the sample a convenience sample (score 2) or a geographic cohort (score 5), highly selective sample, e.g., volunteers (score 0) ^[SEP] Convenience sample—e.g., clinic attenders, referred patients or Geographic cohort—all patients eligible in a particular area ^[SEP]	
	Q2: is the sample size greater than 27 participants in each treatment group (score 5) or based on described and adequate power calculations (score 5)	
Allocation —three questions: maximum score 16	Q3: is there true random allocation or minimisation allocation to treatment groups (if yes score 10)	
	Q4: is the process of randomisation described (score 3) ^[SEP]	
	Q5: is the process of randomisation carried out independently from the trial research team (score 3)	
Assessment (for the main outcome)—five questions: maximum score 14 32	Q6: are the assessments carried out by independent assessors and not therapists (score 10)	
	Q7: are standardised assessments used to measure symptoms in a standard way (score 6), idiosyncratic assessments of symptoms (score 3)	
	Q8: are assessments carried out blind (masked) to treatment group allocation (score 10)	
	Q9: are the methods of rater blinding adequately described (score 3) ^[SEP]	
	Q10: is rater blinding verified (score 3)	
Control groups —one question: maximum score	Q11: TAU is a control group (score 6) and/or a control group that controls for non-specific effects or other established or credible treatment (score 10)	

16 ^[SEP]		
Analysis —two questions: maximum score 15	Q12: the analysis is appropriate to the design and the type of outcome measure (score 5)	
	Q13: the analysis includes all those participants as randomised (sometimes referred to as an intention to treat analysis) (score 6) and an adequate investigation and handling of drop outs from assessment if the attrition rate exceeds 15% (score 4) ^[SEP]	
Active treatment —three questions: maximum score 11	Q14: was the treatment adequately described (score 3) and was a treatment protocol or manual used (score 3)	
	Q15: was adherence to the treatment protocol or treatment quality assessed (score 5)	
Total		

Where the criterion is not reached for any question score 0
Total score: maximum score 100

Appendix 5.2: PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be	

		repeated.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	

Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

Appendix 6.1: Participant Information Sheet

Participant Information Sheet

Acceptance and use of Living Life to the Full educational online classes aimed at Chinese-speaking international students

Focus Group Study

We would like to invite you to take part in a research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Feel free to discuss the study with family and friends if you wish. Please ask us if there is anything that is not clear or if you would like more information.

Consumers for Ethics in Research (CERES) publish a leaflet entitled 'Medical Research and You'. This leaflet gives more information about medical research and looks at some questions you may want to ask. A copy may be obtained from CERES, PO Box 1365, London, N16 0BW.

What is the purpose of the study?

An increasing number of international students who speak Chinese choose to study overseas including Scotland. These students face many challenges including a completely different educational, social, economic, interpersonal and political environment. They can also experience significant fresh challenges to world views such as different perceptions of democracy, freedom, openness, equality, liberty and individualism. International University students suffer from a high degree of stress and distress, and encounter various types of problems and crises. Problems such as symptoms of low mood are common and can affect students' development and growth during their time studying overseas. Existing research has found high stress levels amongst students with low and anxious mood. The current study examines an online educational package that teaches key life skills based on a form of talking therapy called cognitive behavioural therapy (CBT).

We also hope to find out whether Chinese speaking students have different ways of experiencing and communicating feelings of low mood, depression and anxiety. It may be that the content of any CBT resources needs to be adapted to address and engage this group of students. This may involve changes to fit the student lifestyle, as well as to reflect different understanding and expressions of distress. This feasibility study will use a small sample of 15 students drawn from across course years in order to establish and refine the delivery of the intervention and evaluation.

What is the Online Course?

The online course is a website containing material derived from an existing widely used online package available in the English language. It is intended for use by those experiencing symptoms of stress and low mood. The focus of the site is to deliver key life skills through online modules with the aim to relieve mild to moderate symptoms of stress and low mood. Topics covered include problem solving, tackling low confidence, boosting mood and challenging negative thinking. Weekly automated emails accompany the course.

Why have I been asked to take part?

The study is being offered to Chinese international students (undergraduate and postgraduate) aged 18 years and above, in Scotland, who are experiencing mild to moderate symptoms of low mood, depression and/or anxiety.

What will happen now?

Should you agree to participate by emailing us, we will send you a short consent form along with an information pack, which will ask you about your age, date of birth, gender, education/employment status, and whether you have been previously diagnosed or received support for any mental health related condition. The pack will also contain questionnaires that will assess symptoms of low mood, anxiety or depression. Based on the answers and information that you give within this pack, we will then contact you to let you know if the study is right for you and ask you to consider taking part in the study. If you agree to take part in the study you would be asked to give full informed consent, the form for which you can sign and post to us at the address below, or scan and email back to us, or electronically sign and email back.

In the feasibility study, focus groups are linked to address understanding of depression and attitudes towards the online intervention and support types required. You will be assigned to one of three focus groups in order to understand attitudes towards low mood, depression, anxiety and concerning the online course. A semi-structured interview will explore your knowledge and attitudes towards low mood, anxiety or depression. We will seek comment back on the course content in order to understand how best to provide support that engages and encourages use. In addition we will explore what types of support in using such packages might be attractive to the target population (automated email, personalised email, online live chat, bulletin boards, face to face group, face to face or one to one telephone support).

Do I have to take part?

You do not have to take part. If you decide to take part you are still free to withdraw at any time, without giving a reason.

Are there any potential benefits of taking part in this study?

By using the package it is hoped that you may learn new skills to help with symptoms of low mood, anxiety or depression. In addition your opinions about packages will help us modify the approach so it is more suitable for the Chinese speaking international students who are experiencing symptoms of low mood, anxiety or depression.

Are there any disadvantages of taking part in this study?

The set of questionnaires you will be asked to complete before and after the study ask about symptoms of low mood, anxiety or depression. Whilst most people do not mind answering these questions, some people may feel upset. However, it is important that we ask these questions and find out if the online package is an effective way of helping Chinese speaking international students with low mood, anxiety or depression. Sometimes when people find out more about low mood and stress they can feel worse to start with. However this is usually just for a short time and most people feel better again quite quickly as they work through online courses like this one.

There are no other expected disadvantages associated with taking part in the study.

Getting extra support

Additional supports are available via your GP or student counselling for any problems you face such as feeling distressed or if you are struggling.

Will my taking part in the study be kept confidential?

The information you give is entirely confidential and will not be disclosed to anyone outside the immediate research team without your permission. However, if you suggest that you may harm yourself or we have specific concerns for your wellbeing, we will have to inform your GP. Wherever possible the research team would contact you before contacting your GP. In addition your GP will be routinely informed of your involvement in the study.

All the information collected will be stored securely according to the Data Protection Act 1998.

What will happen to the results of the research study?

We intend to present the results of the study as a scientific paper and also at research conferences. Additionally a copy of the results can be sent to you if you wish. No individuals will be identified in the research publications, which will contain only anonymous information.

Who is organising and funding the research?

The study is organised and funded by the Institute of Mental Health and Wellbeing at the University of Glasgow, who are working with the student counselling service for this project.

Who has reviewed the study?

This study has been reviewed and approved by the College of Medical, Veterinary & Life Sciences Ethics Committee at the University of Glasgow.

Who do I contact for further information?

More information about the study is available from the research team:

Mengyi Zheng: Email: m.zheng.1@research.gla.ac.uk

Mental Health and Wellbeing

Administration Building

Gartnavel Royal Hospital,

1055 Great Western Road,

Glasgow,

G12 0XH

Thank you for considering taking part in this research

Appendix 6.2: Full Consent Form



Participant ID No

Full Consent Form

Title of Project: 'Evaluation and treatment of low and anxious mood in Chinese speaking international students studying in the West of Scotland'

Name of Researchers: Chris Williams, Carrie-Anne McClay, Mengyi Zheng and colleagues

1. I confirm that I have read and understand the participant information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I agree that the information I give will be kept even if I am not eligible for the study.
4. I *agree* to take part in the above study.
5. I *agree* to taking part in one to one or group interviews for the study
6. I confirm I understand that additional supports are available for problems such as distress

Name of Participant	Date	*Signature
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[*participant may opt for e-signature and return via personal email address](#)

Researcher	Date received	Signature
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Appendix 6.3: Focus Group Study Topic Guide

Attitudes towards low mood and its treatment

Handout the short story about Zheng

I'm going to read you a short story about a student. And then I'll ask some questions to help understand how they are feeling at the moment.

Zheng is a Chinese-speaking student who has started a PhD course at University of Glasgow in Scotland. Zheng has been in Scotland for 6 months and is struggling on the course. These problems are occurring:

- Finding it hard to learn, and to keep up with the progress of other students
- Feeling embarrassed about their English language
- Struggling to get up in time for lectures and feeling tired all the time
- Preferring to stay at home all day in their spare time
- Feeling lonely and stressed with nerves while thinking about the upcoming exams
- Missing family and friends back home
- Not feeling right, with low confidence and also noticing tummy pains
- Not enjoying life as much as usual

Q. What do you think is happening to her?

Q. What could be causing these problems?

Q. What types of supports could help Zheng to cope with these problems?

Q. If you were Zheng, what would you do to help yourself feel better?

Q. Where do you find out information about problems like low mood and stress?

About the research

Show questionnaires (PHQ9/GAD7 english/Chinese and the recruitment poster and recruitment website)

Do you think all the paperwork used in the study should be available in traditional or simple Chinese versions – or just in english?

(things like the questionnaires and participant information sheets)

Bearing in mind the student calendar- how long do you think students should have access to the online materials to allow a reasonable follow-up

(one month, two months, three months, six months)

About the Course and worksheets (handout a printed copy)

- What did you like about the on line course/worksheets
- Anything you don't like?
- Do you think Chinese or English versions of the resources would be better for Chinese speaking students? Which would you prefer?

About the Online Books (handout a printed copy)

- Which books did you read?
- Would you prefer to use Chinese or English language books?

- What do you like about the books
- What don't you like about the books?

About the lltf4china website

- How do you find the site registration/logging in
- What are your thoughts about the site layout
- Is it needed having traditional and simple Chinese versions?/mandarin and canntonese?

Support in using the course

- What types of supports could help you use and apply the course?
- Would you personally like to receive weekly email supports or have access to a weekly live group chat?
- Sometimes face to face or telephone support could be made available. What do you think about the offer of something like this? If offered support- in what language and telephone/email/text/live chat
- What else do you think could help people use the course?

Overall: what did you like about the course?

And not like?

What could make the content more relevant to students?

Specific extra questions for the focus groups: cultural adaptation.

Appendix 7.1: Participant Information Sheet

Participant Information Sheet

Acceptance and use of Living Life to the Full educational online classes aimed at Chinese speaking international students

Pilot Randomised Controlled Study

We would like to invite you to take part in a research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Feel free to discuss the study with family and friends if you wish. Please ask us if there is anything that is not clear or if you would like more information.

Consumers for Ethics in Research (CERES) publish a leaflet entitled 'Medical Research and You'. This leaflet gives more information about medical research and looks at some questions you may want to ask. A copy may be obtained from CERES, PO Box 1365, London, N16 0BW.

What is the purpose of the study?

An increasing number of international students who speak Chinese choose to study overseas including Scotland. These students face many challenges including a completely different educational, social, economic, interpersonal and political environment. They can also experience significant fresh challenges to world views such as different perceptions of democracy, freedom, openness, equality, liberty and individualism. International University students suffer from a high degree of stress and distress, and encounter various types of problems and crises. Problems such as symptoms of low mood are common and can affect students' development and growth during their time studying overseas. Existing research has found high stress levels amongst students with low and anxious mood. The current study examines an online educational package that teaches key life skills based on a form of talking therapy called cognitive behavioural therapy (CBT).

The pilot study will randomise participants so that 50% have immediate access to an online life skills course, and 50% are offered access only after the end of the study (4 months). The length of follow-up has been chosen to fit the structure of the academic year.

What is the Online Course?

The online course is a website containing material derived from an existing widely used online package available in the English language. It is intended for use by those experiencing symptoms of stress and low mood. The focus of the site is to deliver key life skills through online modules with the aim to relieve mild to moderate symptoms of stress and low mood. Topics covered include problem solving, tackling low confidence, boosting mood and challenging negative thinking. Weekly automated emails accompany the course.

Why have I been asked to take part?

The study is being offered to Chinese international students (undergraduate and postgraduate) aged 18 years and above, in Scotland, who are experiencing mild to moderate symptoms of low mood, depression and/or anxiety.

What will happen now?

Should you agree to participate by emailing us, we will send you a short consent form along with an information pack, which will ask you about your age, date of birth, gender, education/employment status, and whether you have been previously diagnosed or received support for any mental health related condition. The pack will also contain questionnaires that will assess symptoms of low mood, anxiety or depression. Based on the answers and information that you give within this pack, we will then contact you to let you know if the study is right for you and ask you to consider taking part in the study. If you agree to take part in the study you would be asked to give full informed consent, the form for which you can sign and post to us at the address below, or scan and email back to us, or electronically sign and email back.

Once eligible participants have completed the full consent form, they will then be randomly assigned to one of two different intervention groups: **Immediate access** or the **Control Group (CG)**.

All participants will then be emailed or posted a 'getting started' guide detailing all necessary information regarding the study for the two different groups of participants. Participants will have the option of contacting the research team to get practical support with accessing the online package. All such contacts will be recorded in a contact log (participant, time/frequency and content of support need).

Do I have to take part?

You do not have to take part. If you decide to take part you are still free to withdraw at any time, without giving a reason.

Are there any potential benefits of taking part in this study?

By using the package it is hoped that you may learn new skills to help with symptoms of low mood, anxiety or depression. In addition your opinions about packages will help us modify the approach so it is more suitable for the Chinese speaking international students who are experiencing symptoms of low mood, anxiety or depression. We need to do studies such as this one to see if such packages are effective to Chinese speaking international students.

Are there any disadvantages of taking part in this study?

The set of questionnaires you will be asked to complete before and after the study ask about

symptoms of low mood, anxiety or depression. Whilst most people do not mind answering these questions, some people may feel upset. However, it is important that we ask these questions and find out if the online package is an effective way of helping Chinese speaking international students with low mood, anxiety or depression. Sometimes when people find out more about low mood and stress they can feel worse to start with. However this is usually just for a short time and most people feel better again quite quickly as they work through online courses like this one.

There are no other expected disadvantages associated with taking part in the study.

Getting extra support

Additional supports are available via your GP or student counselling for any problems you face such as feeling distressed or if you are struggling.

Will my taking part in the study be kept confidential?

The information you give is entirely confidential and will not be disclosed to anyone outside the immediate research team without your permission. However, if you suggest that you may harm yourself or we have specific concerns for your wellbeing, we will have to inform your GP. Wherever possible the research team would contact you before contacting your GP. In addition your GP will be routinely informed of your involvement in the study.

All the information collected will be stored securely according to the Data Protection Act 1998.

What will happen to the results of the research study?

We intend to present the results of the study as a scientific paper and also at research conferences. Additionally a copy of the results can be sent to you if you wish. No individuals will be identified in the research publications, which will contain only anonymous information.

Who is organising and funding the research?

The study is organised and funded by the Institute of Mental Health and Wellbeing at the University of Glasgow, who are working with the student counselling service for this project.

Who has reviewed the study?

This study has been reviewed and approved by the College of Medical, Veterinary & Life Sciences Ethics Committee at the University of Glasgow.

Who do I contact for further information?

More information about the study is available from the research team:

Mengyi Zheng: Email: m.zheng.1@research.gla.ac.uk

Mental Health and Wellbeing

Administration Building

Gartnavel Royal Hospital,

1055 Great Western Road,

Glasgow,

G12 0XH

Thank you for considering taking part in this research

Appendix 7.2: Eligibility Questionnaire

Information & Eligibility Questionnaire

Research Study: Evaluation and treatment of low and anxious mood in Chinese speaking international students studying in the West of Scotland

Date

Full Name:

Email:

Date of Birth (dd/mm/yy):

Age:

The following pages will ask you some questions about yourself. Please answer all of the questions. Some questions invite you to indicate all options that apply to you. For all other questions, please choose only one response.

Thank you for your help and time.

1. Will you be living in the UK for the next year? Yes No
2. What is your gender? Male Female Transgendered
3. What is your marital status?
Married / living as married Single Separated / divorced Widowed
4. Are you a Chinese international student registered at the University of Glasgow? Yes No

If Yes, What type of course(s) are you doing now? Tick all that apply

- Undergraduate Postgraduate Masters
BA BSc PhD MD Other
English language course

5 What is your preferred language for online resources?

- Written content: English Chinese
Audio content English Mandarin Cantonese

6. Are you currently taking part in any other mental health based research?

- Yes No

7. Do you have reliably available access to a computer with broadband internet connection and sound? Yes No

8). How long have you had your feelings of low mood, anxiety / depression?

I feel okay

0-2 months 2-6 months 1-2 years 2-4 years 5 years+

9. Have you ever been diagnosed as having depression? Yes No

10. Have you ever been diagnosed as having anxiety? Yes No

11. Have you ever received any treatment from a health service worker in the past for problems of low mood, anxiety / depression? Choose any that apply.

- No support
- General Practitioner (GP)
- Psychotherapy / talking therapy
- Counselling
- Group therapy
- Voluntary organisations
- Friends / family
- Self-help resources
- Other, please specify:

12. Are you currently taking antidepressant medication?

- Yes
- No
- Would rather not say

If you are taking an antidepressant which tablet (s) is it:

What does?

When did they start?

Have you changed the dose in the last 6 weeks?

13. Are you currently receiving any of the following treatment for low mood, anxiety / depression? Choose any that apply.

- No support
- Finding information online
- Friends / family
- Voluntary organisations
- Self-help resources
- GP
- Psychotherapy / talking therapy
- Counselling
- Group therapy led by a mental health worker
- Seeing a psychiatrist or mental health nurse
- Other, please specify:

Thank you for taking the time to complete this questionnaire! Please return by post or save then attach this file in an email back to me, Anita Zheng

Email: info@help4lowmood.com

Appendix 7.3: Patient Health Questionnaire (PHQ-9)

PHQ-9

Over the <u>last 2 weeks</u> , how often have you been bothered by any of the following problems? (Use “✓” to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself-or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite-being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3

9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
--	---	---	---	---

(FOR OFFICE CODING _____ + _____ + _____ =Total Score: _____)

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

**Not difficult
at all**

**Somewhat
difficult**

**Very
difficult**

**Extremely
difficult**

Appendix 7.4: Generalised Anxiety Disorder (GAD-7)

GAD-7

Over the last 2 weeks , how often have you been bothered by the following problems? (Use “✓” to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious pr on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

(For office coding: Total Score T = + +)

Appendix 7.5: Work and Social Adjustment Scale (WSAS)

Work and Social Adjustment Scale

Rate each of the following questions on a 0 to 8 scale:

0 indicates no impairment at all and 8 indicates very severe impairment.

1. Because of my *low mood*, my ability to work is impaired

0 means not at all impaired and 8 means very severely impaired to the point I can't work.

2. Because of my *low mood*, my home management (cleaning, tidying, shopping, cooking, looking after home or children, paying bills) is impaired

0 means not at all impaired and 8 means very severely impaired.

3. Because of my *low mood*, my social leisure activities (with other people, such as parties, bars, clubs, outings, visits, dating, home entertainment) are impaired.

0 means not at all impaired and 8 means very severely impaired.

4. Because of my *low mood*, my private leisure activities (done alone, such as reading, gardening, collecting, sewing, walking alone) are impaired.

0 means not at all impaired and 8 means very severely impaired.

5. Because of my *low mood*, my ability to form and maintain close relationships with others, including those I live with, is impaired.

0 means not at all impaired and 8 means very severely impaired.

Appendix 7.6: Client Satisfaction Questionnaire (CSQ-8)

CSQ-8

1. How would you rate the quality of service you received?

1, Excellent 2, Good 3, Fair (or moderate) 4, Poor

2. Did you get the kind of service you wanted?

1, No, definitely not 2, No, not really 3, Yes, generally 4, Yes, definitely

3. To what extent has the service met your needs?

1, Almost all of my needs have been met
2, Most of my needs have been met
3, Only a few of my needs have been met
4, None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?

1, No, definitely not 2, No, I don't think so 3, Yes, I think so 4, Yes, definitely

5. How satisfied are you with the amount of help you have received?

1, Quite dissatisfied 2, Indifferent or mildly dissatisfied 3, Mostly satisfied 4, Very satisfied

6. Have the services you received helped you to deal more effectively with your problems?

1, Yes, they helped a great deal 2, Yes, they helped 3, No, they really didn't help 4, No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the service you have received?

1, Very satisfied 2, Mostly satisfied 3, Indifferent or mildly dissatisfied 4, Quite dissatisfied

8. If you were to seek help again, would you come back to our program?

1, No, definitely not 2, No, I don't think so 3, Yes, I think so 4, Yes, definitely

Appendix 7.7: Emails Support

Emails support: Guidelines and suggested content

- Keep a copy of all support emails sent out – and also the patient’s replies/questions.
- Use a work email that is not a “personal email”.
- Try to only send one reply to participants each week (if they respond).
- Copy all replies and save them to a folder on the server (password protected and not open to all to read).
- Use the same subject line as a standard to help identify sessions e.g. Support Session 1.
- Once replied to, immediately delete any emails from individuals who have not consented to these being kept for research purposes.
- *Missed contact:* A missed contact for email support will be defined as the participant failing to reply to 3 consecutive emails without explanation.
- Flag up any problems or concern following the supervision standard operating procedures.

Suggested content for email 1:

Hi, my name is Hong Mei, I am a qualified counsellor based at the University of Glasgow. My role is to support and encourage you while you work through the online course. You may find that some tasks are difficult or you lose motivation so I am here to help.

*Have you managed to register and log on to the website?
How have you been doing? Did you find the first module helpful?*

It is important to complete one module a week to keep up momentum and improve how you feel. The Planner and Review sheets can be extremely helpful and it is important that you make a clear plan at the end of each module for what you would like to try and achieve in the coming week. Writing a plan down will help you achieve you goals.

Please do use me as a resource to help you get the most out of the course. I am here to help and all correspondence will be kept confidential, unless I am seriously concerned about your wellbeing.

I look forward to hearing from you.

Kind regards,

Hong Mei.

Subsequent emails should be sent weekly. These should be supportive, encouraging and personalised; referring to things the participant has said previously ex. How did you plan to go? Did you complete the review sheet to assess what went well/not so well?

Support emails should always mention the Planner and Review sheets and avoid “therapy”, always referring back to the online course and its content.

Other comments may include:

“Did you manage to complete a module this week? Which one? Was it useful?”

“Have you been practising the ACT? Are you noticing any changes in your mood?”

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