The role of emotion regulation in affective disturbance and psychotic-like experiences in adolescent inpatients

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Low intensity treatment for older adults in IAPT: A service evaluation

ABSTRACT

Introduction: Prevalence of common mental disorders such as depression and anxiety is highest among those aged 45-54, and lowest in those aged 75 or older.

Method: Longitudinal analyses of secondary data were conducted using the data collected routinely in a London-based Improving Access to Psychological Therapy (IAPT) Service (N=77; f=39; m=38). Data were collected by IAPT clinicians and staff over a period of 4 years between 2008 and 2012. Demographical data, information regarding engagement with low intensity treatment as well as clinical outcome measures (PHQ-9, GAD7, W&SAS) were included in analyses.

Findings: T-tests reveal significant improvement on scores of depression on the PHQ-9 ($t=3.101$; $p=.003$), anxiety on the GAD 7 ($t = 3.623$; $p=.001$). Wilcoxon signed-rank tests were run for W&SAS scores of functioning ($r=2.507$; $p=.011$), showing significant improvement from assessment to end of treatment. Linear regression showed that the type of treatment is a predictor of recovery from depression ($t = 3.836$, $p=.000$), but not from anxiety ($t= -.307$, $p = .760$). MBCT and Behavioural Activation seem to be the most engaging therapeutic options, while guided self-help, psycho-education and workshops on stress and anger have the highest rates of drop-out and failure to engage.

Conclusions: Low intensity treatments offered to older adults referred to the IAPT service prove efficacious in decreasing anxiety and depression symptoms and increasing overall functioning in people who engage with the treatment. Engagement of older adults with the service may improve by further exploring the acceptability of low intensity treatments in this population while adaptations and adjustments may be needed in order to increase participation. Future investigations might need to consider the characteristics of people who fail to engage or drop out and reasons for disengagement with treatment

1. INTRODUCTION

Overall project aim or purpose of the audit:

To evaluate the Step 2 (low intensity) treatment received by older adults in an IAPT service in SLaM.

Specific objectives:

To describe the client group of older adults offered Step 2 (low intensity) treatment through:

- Demographic characteristics
- Types of treatment (i.e. face to face, group, face to face & telephone etc) and number of episodes

To examine older adult engagement with Step 2 treatment through

- Attendance rates
- Reasons for discharge

To evaluate the clinical outcomes of older people completing low intensity treatments

- Routine measures including PHQ-9, GAD-7 and W&SAS

2. LITERATURE REVIEW

To understand how a primary care psychological service performs in terms of providing treatment for older adults, there are several questions that may be important to take into account.

First, what is the need for treatment and what does epidemiological data indicate in terms of prevalence of anxiety and depression in older population? Second, how do older people access psychological therapies? Are there any barriers to equal access compared to the rest of adult population and if yes, how can these barriers be addressed? Third, how acceptable and efficacious are evidence-based treatments for depression and anxiety for the older population and are there any adaptations needed? The following section outlines a brief discussion of each of these points.

1.1 Anxiety and depression in older adults – Epidemiology

Depression has 16% prevalence in older adult population living in inner London according to epidemiological data (Livingston, 1990). Moreover, rates of major depressive disorder amongst older people are not more frequent when compared to other age groups (Futterman, A., Thompson, Gallagher-Thompson, and Ferris, 1995). In terms of prognosis for depression, current evidence is mixed, however indicating that people over 70+ are at greater risk of relapse and recurrence (Reynolds, Frank, Perel, Imber, Cornes, Miller, and Kupfer, 1999).

The Adult Psychiatric Morbidity Survey (McManus, Meltzer, Brugha, Bebbington, and Jenkins, 2007) shows that the prevalence of common mental disorders such as depression and anxiety is highest among those aged 45-54, and lowest in those aged 75 or older. The Survey indicates that in Western countries, although people 55 years and over have more physical disorders and are more likely to face the loss of partners, friends and family, the older age group suffers less anxiety and depression compared to younger people. IAPT targets are calculated using this particular survey (McManus, 2007).

2.2 Access to psychological therapies in older adults

Literature suggests that where staff have a special interest in psychological therapies adapted for older adults, the service does better in terms of access equality reflected in higher equity of access scores (EoA) of 33% (Wong, 2010) compared to 15.3% reported historically in IAPT services (Cobb & Shephard, 2010). An EoA score of 100 would mean that older people have equal access compared to the rest of the adult population (Boddington, 2011).

Furthermore, in terms of providing psychological therapies to older adults, Boddington argues that treating older people 'like everyone else' is not, perhaps, the best approach for at least three reasons: older adults are less likely to seek advice (Boddington, 2011); it is likely that GP misdiagnose depression in the older adult population and, finally, "treatments are not offered readily" (p. 12). Rather, a targeted activity for primary care to improve the mental wellbeing of older adults.

The access to psychological therapies can be measured by examining the referral process. However, referral rates are not the only indicator of equal access, as Boddington suggests (2011). Specific, adapted and target provision that offers 'sufficient flexibility' (p. 13) should also be taken into account as indicators of equal access to psychological therapies for older adults.

2.3 Adapting evidence-based treatment for anxiety and depression

Several reviews conducted over the past 20 years examined the effectiveness of psychological interventions for geriatric depression. Scogin, Welsh, Hanson, Stump, and Coates' revie2 (2005) suggests that, firstly, treatment choices are across a range of theoretical frameworks and therapeutic modalities. Secondly, the viability of psychological treatments for depressed elders although promising, needs to be recognized by other disciplines in order to improve access to these treatments. Finally, the review suggests that there is an opportunity to provide training in evidence-based treatments for present and future providers to the growing number of older adults (Scogin et al., 2005).

An earlier review of 17 controlled studies by Scogin and McElreath (1994) found an average effect size of 0.78, indicating that treated participants were approximately three fourths of a standard deviation more improved than control participants on post-treatment measures of depression. Moreover, the effect sizes obtained for cognitive therapy and reminiscence therapy were substantial and comparable to the overall effect. Similarly, Engels and Vermey (1997) conducted a quantitative review of the literature of nonmedical treatment for depression in older adults and found a similar but somewhat attenuated effect size of 0.61 in their review of 17 studies. Pinquart and Sorensen (2001) conducted a meta-analysis of the entire psychosocial intervention literature for older adults. For studies in which depression was measured, they found an effect size of 0.43 for self-rated depression compared with 1.03 for clinician-rated depression.

Moreover, a number of narrative reviews are added to the meta-analytic reviews already mentioned (e.g., Arean and Cook, 2002; Karel and Hinrichsen, 2000; Teri and McCurry, 2000; Bartels, Dums, Oxman, Schneider, Arean and Alexopoulos, 2003), and seem to strongly support the availability of effective psychologically based treatments for depressed older adults.

Although self-help for depression and anxiety disorders has been examined in many studies, it is not clear whether it is equally effective as face-to-face treatments. Cuijipers and colleagues (2010) carried out a systematic review and meta-analysis of comparative studies of guided self-help and face-to-face psychotherapies in 21 studies including 810 participants. The review found that the difference between guided self-help and face-to-face psychotherapy at post-test was $d=-0.02$, in favour of guided self-help. At up to 1 year follow-up there were no significant differences between the two types of treatments. Moreover, there was no significant difference found between the drop-out rates in the two treatments formats. The authors concluded that guided self-help and face-to-face treatments can have comparable effects. It is time to start thinking about implementation in routine care.

2.3.1 Cognitive Behavioural Therapy for depression in older adults

Derived primarily through the work of Beck and colleagues (1979), the main goal of CBT is to provide depressed older adults with an understanding of maladaptive

information processing and with skills that enable clients to challenge or reconsider these information processes. In addition, behavioural techniques are also incorporated. Such techniques can include Behavioural Activation, relaxation training and assertiveness.

A comprehensive conceptualization of depression in older age was developed by Laidlaw (2004) with several additions to the initial developmental cognitive model that Beck proposed (1967, 1987) that included: cohort beliefs, transitions in role investments, intergenerational linkages, socio-cultural context and, finally, health conditions. These additions are important in relation to older age as they take into consideration context-specific environmental factors (i.e. family values, social stereotypes of aging), as well as individual factors relevant to aging (i.e. health conditions).

Gould, Coulson and Howard (2012b) reported a meta-analyses evaluating cognitive behavioural therapy (CBT) for depression in older people and factors associated with its efficacy. The review included 23 RCTs and 1083 participants aging 55 and over with a mean age of 68.4. The review concluded that CBT for depression in older people was more effective than being on waiting list or treatment as usual. Efficacy was not demonstrated over active controls or other treatment. Moreover, the authors suggested that there is a need for more high-quality RCTs comparing CBT with active controls in order to draw firm conclusions regarding the efficacy of CBT for depression in older people. Also, the inclusion of both self-reported and clinician rated depression is desirable for future studies.

2.3.2 Cognitive Behavioural Therapy for anxiety in older adults

In terms of anxiety disorders, a recent comprehensive review by (Wolitzky- Taylor, Castriotta, Lenze, Stanley, & Craske ,2010) highlighted several significant findings: first, that anxiety disorders are common among older age individuals, however less common than in younger adults; second, the assessment of symptoms in older compared to the younger population indicates an overlap between anxiety symptoms of younger and older adults, although there are some differences as well as limitations to the assessment of symptoms among older adults; third, a high comorbidity of anxiety disorders with depression was found in older adults; fourth, anxiety disorders are also

highly comorbid with other medical illnesses; fifth, associations between cognitive decline and anxiety have been noted; sixth, late age of onset is infrequent; and seventh, both pharmacotherapy and CBT have demonstrated efficacy for older adults with anxiety.

Furthermore, a systematic review and meta-analysis of randomized of CBT for anxiety late-life anxiety disorders (Hendriks, Oude Voshaar, Keijsers, Hoogduin, & Van Balkom, 2008) found that anxiety symptoms were significantly reduced following CBT compared to an waiting-list control condition and an active control condition and that, additionally, CBT significantly alleviated accompanying symptoms of worrying and depression.

A meta-analysis and meta-regression of randomized controlled trials was carried out by Gould, Coulson and Howard (2012a) to examine the magnitude and duration of factors associated with effects of CBT for anxiety in older people. The review included 12 studies and confirmed the effectiveness of CBT for anxiety in older people, however suggested lower efficacy in older compared to working-age adults. The authors found a low effect size in favour of CBT over an active control suggesting that there is a need to investigate other treatment approaches that may be used to replace or augment CBT to increase treatment effectiveness for anxiety in older adults (Gould et al., 2012a).

2.4 Setting the context: The IAPT service

This service evaluation was carried out in a London-based IAPT service reporting (Wong, 2010) 4.4% of referrals of people of 65+ years old, over a period of over 2 years (from Nov 2008 to June 2010). Unpublished report from the same service revealed that the percentage of older adults referrals continued to be around similar figures from 2010 onwards. In this service, the 65 and overpopulation represented 13.3% of the total adult (18+) population (Wong, 2010). This service has a higher Equity of Access (EoA) scores of 33% than the national average (Boddington, 2011).

It is estimated that 24,259 older people aged 65 and over live in the London borough served by the IAPT service audited here. Those aged under 74 years comprise the largest proportion of this group (5,835 males, 6,731 females) (GLA, Round Population

Projections, 2007).

Historically, Southwark older adults primary care psychology service was a tailored provision for older adults funded by the Guy's & St Thomas's Charitable Foundation between November 2004 and February 2008, and by the corresponding NHS Trust for the another eight months. The service was a uni-disciplinary psychology service that accepts referrals from primary care (GP), community mental health teams, social workers and a physical health team (Wong and Boddington, 2011). The service has carried out an extensive publicity campaign to GPs and other potential referrers starting with 2005 (ibidem). This campaign results in significant increase in the number of referrals, for example, from four referrals received between May-July 2005 to 31 referrals received between August-October 2008. Historically, most referrals (83%) are made to the service by GPs.

In 2008, the older adults primary care psychology service was merged into the Southwark IAPT service which has a policy of 'open referrals' for all the residents of the borough who experience a common mental disorder such as depression or anxiety (Wong and Boddington, 2011). The service has a specific focus to increase access of older adults, ethnic minorities and vulnerable young people.

In terms of increasing access to the older population, the service put in place several measures such as a separate waiting and opt-in list, home visits, adjustment of pace, length, frequency and number of sessions offered as well as ways to collect routine measures; a possibility to opt-out of the telephone triage that was implemented routinely in the service with the rest of the adult population (Wong and Boddington, 2011). Training to high-intensity and low-intensity staff was also provided.

2.5. Types of low intensity treatments (Step 2)

The service provides several types of individual and group treatments between 2008 and 2012.
The following descriptions are verbatim-transcribed descriptions of treatments as they are presenting to clients.

2.5.1 Individual treatments

2.5.1.1 Guided self-guided

Guided self-help involves:

- reading a workbook (or a series of booklets) about depression and/or anxiety
- carrying out the exercises or activities suggested in the workbook
- following an agreed schedule for working through the workbook, usually spread over 6-8 weeks
- opportunities to discuss your progress through the workbooks on the telephone or face-to-face with a clinician

Guided self-help can help clients:

- learn more about the difficulties you have been experiencing, e.g., become more informed about the causes of depression and anxiety
- learn about cognitive behavioural therapy (CBT)
- become your own therapist, applying CBT techniques for yourself, learning skills that you can continue to use to stay well in the future
- recover from depression and/or anxiety: research suggests it can be as effective as one-to-one therapy for some people. It can also reduce the number of one-to-one therapy sessions needed to for recovery. Guided self-help is recommended by the National Institute for Health and Clinical Excellence (NICE) for depression and some anxiety problems

To benefit from the program, you need to:

- be willing to set aside regular time each week to do the reading
- be willing to spend time carrying out the suggested exercises
- have a reasonable understanding of written English (we are sorry we do not have workbooks in other languages at this moment)

Examples of workbooks and self-help books used are :

- Mind Over Mood (Padesky and Greenberg,1995)
- Overcoming Depression (Wiliams, 2009)
- Overcoming Anxiety (Williams, 2012)
- Overcoming Low Self-Esteem (Fennell, 2009)

Some come as workbooks we can give you; others can be borrowed from the library on the **Books on Prescription** scheme.

2.5.1.2 Behavioural Activation: Enhanced Guided Self-help for Depression

What is Behavioural Activation (BA)?

- BA is a psychological treatment for depression
- It is a very practical approach, with a focus on the present rather than the past. It looks at the causes of depression in everyday life, and how to make changes to lift the depression
- There is good evidence that it can be helpful for many people with both more severe and milder forms of depression, and therefore it is recommended by NICE (National Institute for Clinical Excellence)

What does the enhanced guided self-help program involve?

Behavioural Activation is a structured program based on nine short booklets, supported by six weekly face-to-face or telephone sessions, plus a review session activities and ideas to try out between sessions

To benefit from the program, the clients need to:

- be willing to set aside regular time each week to look over the booklets and carry out the suggested exercises
- have a reasonable understanding of written English (we are sorry we do not have the booklets in other languages at the moment)

2.5.1.3 Online support: E-Couch

What is E-Couch?

- E-Couch is a computer program with helpful resources for people with depression and anxiety. E-Couch is based on the 'Beating the Blues' program based on Cognitive Behavioural therapy and consists of eight online sessions which last approximately 1 hour to help clients understand the links between thinking and how this influences mood and behaviours. The program teaches strategies to clients cope better in the short term and workable skills for life ((http://www.beatingtheblues.co.uk, last accessed 13 May 2014).

How to access E-Couch?

- E-Couch is a free resource, which can be accessed online at https://ecouch.anu.edu.au/welcome.
- If you do not have access to a computer, you can come to the E-Couch clinic on Tuesdays from 1-3pm in Pembroke House, near Elephant and Castle.
- You can use computers in the IT suite to access E-Couch alongside others working

through the same program (there are screens between the computers and headphones for privacy) with support from a clinician from Southwark Psychological Therapies Service (however, we do not have the facilities for individual interviews at the clinic).

• If you have finished your session before the clinic closes you can do some free internet surfing or stop for a cup of tea.

2.5.2 Courses and groups

2.5.2.1 MBCT

Who is it for?

• MBCT is for people who have had depression

• It is especially helpful for those who have been depressed several times

What does it involve?

• an introductory session followed by 8 weekly classes each 2 hours long

• intensive training in mindfulness meditation

• daily home practice, using CDs for guidance

• learning about the nature of depression

What is mindfulness?

• Mindfulness is being awake to what is happening in the present moment, moment-by-moment, rather than being on 'automatic pilot'

• Mindfulness meditation is a form of self-awareness training, leading us to know ourselves more fully

• Being mindful means adopting a kind, compassionate, open attitude, stepping outside the mind's tendency to judge anything and everything

• Being mindful gives us the opportunity to respond to difficult events and situations in new ways, rather than just following old patterns

• Mindfulness is a skill that we all have and can develop further.

What is required?

• A commitment to attend all 8 classes

• The time for daily practice (45 minutes a day)

• An attitude of openness and patience

2.5.2.2 Behavioural Activation group for depression

Group aims and objectives

Understand how depression works or is maintained, particularly the links between what

you *do*, where you do it, how you do it, and how it makes you feel.

- Identify particular areas of your life where the way you're responding to depression whilst understandable may not be helping
- Help identify individualized, realistic and achievable 'mini' goals from week to week - the activation part.
- Learn to identify and approach difficult situations rather than avoid them

Give information on basic skills in how to manage common difficulties in depression e.g. problem solving, sleep, relaxation and basic mindfulness.

2.5.2.3 Mindfulness-Based Stress Reduction / Cognitive Therapy Group (MBSR/CT)

This group is for people living with long-term health conditions

MBSR/CT is based on an established stress reduction program which enhances psychological and physical health and well-being. It has been specifically designed for people with long-term health conditions such as chronic pain, chronic fatigue, heart problems, COPD, and diabetes, and who experience stress or low mood as a result. MBSR/CT teaches you skills which you can use to improve your health throughout the rest of your life.

2.5.2.4 Depression and Anxiety Group for People who have Long-Term Health Conditions and Medically Unexplained Symptoms

Do you have a long-term condition such as a heart problem, chest problem, high blood pressure, diabetes or arthritis?

Have you also been suffering from stress, feeling low, anxious or depressed?

Do you want help understanding and managing these feelings?

If so, this group is for you!

The group will help you to:

- Learn how to manage stress, anxiety and low mood
- Have the opportunity to reflect on the impact of your physical condition
- Gain support from peers with similar experiences
- Gain support from facilitators trained in general practice and psychology
- Review and evaluate what's most important to you
- Understand behaviours and thinking affecting low mood and stress levels

Learn some skills to help in the future

2.5.3 Workshops

What are 'How to Improve your Wellbeing' Workshops?

· FREE day-long psycho-educational workshops

· for people living or working in Southwark

· held on Saturdays at the John Harvard Library

· using CBT (Cognitive-Behavioural Therapy) methods which have been found to be very helpful for people with depression and anxiety problems.

What would I gain from attending a 'How to Improve your Wellbeing' workshop?

· an opportunity to learn about CBT

· an opportunity to meet other people who might be facing similar problems.

· learn strategies you can take away and use in your everyday life

What kinds of workshops are available?

2.5.3.1 Improve Your Self-Confidence Workshop

These workshops aim to help you become more aware of when you do not feel so confident about yourself and offers you a chance to learn the different ways of handling those times.

We believe that low self-confidence is a common problem. It happens when:

• we have had a number of things go wrong in our lives

• we have lost important people or important things (e.g. death of a loved one, loss of a job)

• we have continuing problems (e.g. difficulties at home or at work)

• we are in new situations where we do not know the rules

This workshop offers you a chance to:

• learn not to put yourself down

• learn to handle difficult situations better

• be more effective in what you do (e.g. be assertive, solve problems)

2.5.3.2 How to improve your Sleep

These Workshops aim to help people become more aware of the causes of sleep problems and offer you a chance to learn different ways of improving your sleep.

Many people suffer from poor sleep, and for a variety of reasons. Things that cause,

maintain, and worsen sleep problems include:

- not being able to switch off from the activities of everyday life
- difficult episodes in life (e.g. losing a loved one, an accident)
- worrying about problems (e.g. stress at work or home)
- poor sleep itself - getting into a vicious cycle, worrying about not
- getting the sleep you need, struggling to break poor sleeping patterns

Our workshops offer you a chance to learn about:

- what sleep is
- different factors that can make a sleep problem worse
- how you can use different methods that will improve your sleep

2.5.3.3 Handle Your Stress workshop

These workshops aim to help people become more aware of stress and offers a chance to learn different ways of handling the stresses in your life. We believe that stress is normal.

It happens when:

- we change our lives e.g. move house, change job
- things happen to us e.g. death of a loved one, an accident
- we have continuing problems e.g. difficulties at work or home
- we are so busy that we do not have enough time for ourselves

Our workshop offers you a chance to:

- look at how we get over-stressed and then have problems
- learn about what you can do to cope when you are feeling stressed (e.g. techniques to help you relax and unwind, both mentally and physically)
- learn about what you can do to cope positively with Stress (e.g. be assertive, manage your time better, solve problems)
- learn about spotting your own early signs of stress

2.5.3.4 Manage Your Anger workshop

These workshops aims to help people better understand what anger is and highlights ways to manage anger and express it appropriately in different situations.

Anger is a common response experienced by everyone. Sometimes anger can become problematic and situations when this happens can be when:

- Someone does something we do not like or were not expecting
- When something happens that annoys us
- We feel we are being blamed or punished for something that we believe is not our fault
- When we feel we are being criticized

Our workshop offers you a chance to:

- Learn to understand what anger means to different people
- Learn to be more effective in how you express and react to your angry feelings
- Learn to handle difficult situations better.

3. METHOD

Longitudinal analyses of secondary data were conducted using the data collected routinely in a London-based IAPT Service. These data were available through IAPTUS (Psychological Therapy Patient Management System). All data were collected by IAPT clinicians and staff over a period of 4 years between 2008 and 2012.

Demographical data, information regarding engagement with treatment as well as clinical outcome measures were included in analyses.

3.1 Demographical data

A total of 77 older adults were offered Step 2 low intensity treatment over a period of 4 years between 2008 and 2012 (change the years?). Data about gender, ethnicity, nationality, religion, sexual orientation, marital status as well as disability were collected routinely by IAPT staff.

3.2 Referral, assessment and treatment process

This audit reports data regarding the referral, assessment and treatment process in terms of duration (in days) between referrals being received and accepted, waiting time for an assessment, as well as the time relapsed between assessment attended and treatment start date.

3.3 Engagement with treatment

Engagement with treatment was measured by identifying the total number of sessions offered including assessment, review and follow-up and the total number of sessions attended by clients. An average number of sessions offered and attended by patients was also calculation. The total number of DNAs, cancellations by patients and health professionals were also counted.

3.4 Clinical outcome

Assessment outcome measures (first measure available) and end of treatment measures (last measures available) were collected and compared by using non-parametric tests. The reason for using non-parametric tests is because the data are not

normally distributed. Comparisons between assessment and end of treatment on three measures were performed. The measures included in analysis were PHQ-9 (depression scale), GAD-7 (anxiety scale) and W&SAS (functioning scale).

3.5 Ethical issues

No identifiable data is reported and patients' details are anonymized by using assigned identification codes. Only the service evaluation researcher had access to the identification codes and details about these codes will be kept in a secured folder on SLaM network.

3.6 Measures

Depression - PHQ-9 (Kroenke et al., 2001)

The nine item version of the Patient Health Questionnaire (PHQ-9) was designed to facilitate the recognition and diagnosis of depression in primary care patients. It can be used to monitor change in symptoms over time and provides a depression severity index score as follows:

0 – 4 None

5 – 9 Mild

10 – 14 Moderate

15 – 19 Moderately Severe

20 – 27 Severe

The recommended cut-off for the PHQ-9 severity index is a score of 9. Anyone who scores 10 or above can be considered to be suffering from clinically significant symptoms of depression. This is referred to as meeting "'caseness'".

Generalized Anxiety Disorder - GAD7 (Spitzer et al., 2006)

Though designed primarily as a screening and severity measure for generalized anxiety disorder, the GAD7 also has moderately good operating characteristics for three other common anxiety disorders – panic disorder, social anxiety disorder, and post-traumatic stress disorder.

The index scores are as follows:

0 – 4 None

5 - 10 Mild Anxiety

11 – 15 Moderate Anxiety

15 - 21 Severe anxiety

The recommended cut off for the GAD7 severity index is a score of 7. Anyone who scores 8 or above can be considered to be suffering from clinically significant anxiety symptoms.

Work and Social Adjustment Scale (WSAS) (Mundt et al., 2002)

The Work and Social Adjustment Scale (WSAS) is a simple 5-item patient self-report measure, which assesses the impact of a person's mental health difficulties on their ability to function in terms of work, home management, social leisure, private leisure and personal or family relationships. The WSAS is used for all patients with depression or anxiety as well as phobic disorders.

3.7 Data analysis

Descriptive statistics and comparisons tests were run to identify changes in depression, anxiety and function scores. Normality tests were run (Appendix 3.7) and it was found that assessment data for the PHQ-9 and the GAD-7 were normally distributed, however the assessment WSAS and the end of treatment data are not normally distributed. Parametric tests were used in analysis for scores of depression and anxiety. Non-parametric tests were used for scores of functioning. Comparison tests were used to identify any change between assessment and end of treatment.

'Recovery scores' were computed by subtracting end of treatment scores from assessment scores. These recovery scores for depression, anxiety and functioning were used in linear regression analyses as a dependent variable while the type of treatment was used as an independent variable.

4. FINDINGS

4.1 Demographics

A total of 77 older adults were offered Step 2 low intensity treatment over a period of 4 years between 2008 and 2012.Demographical data collected by IAPT staff included information on gender, ethnicity, nationality, religion, sexual orientation, marital status as well as disability.

Gender

Figure 4.1 suggests that a similar number of older males and females were seen for low intensity treatments.

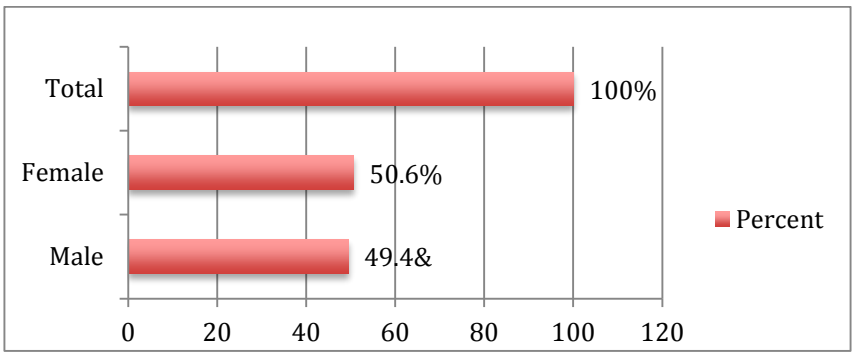

Figure 4.1.1 Gender

Nationality and ethnicity

In terms of nationality (Figure 4.2), 76.6% of clients being seen were British and over 10% were nationals of the European Union.

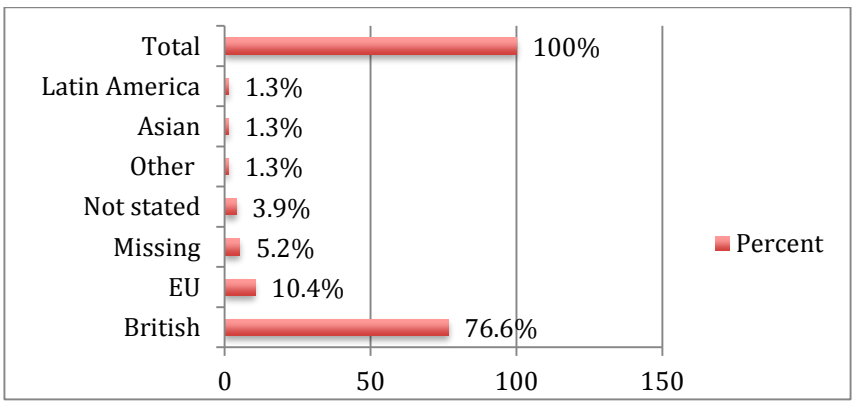

Figure 4.1.2 Nationality

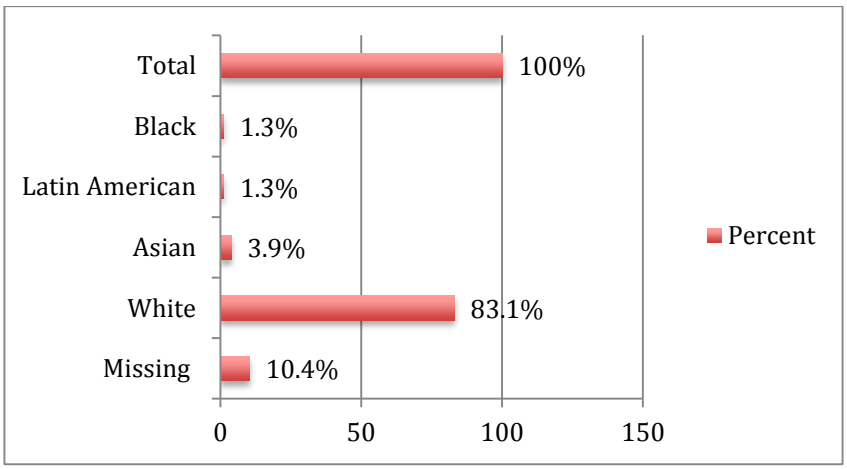

Figure 4.1.3 Ethnicity

Marital status

Overall, as shown in Figure 4.4, approximately 30% of participants were married, almost 12% were single and 10.4% were separated, while almost 8 % were widowed.

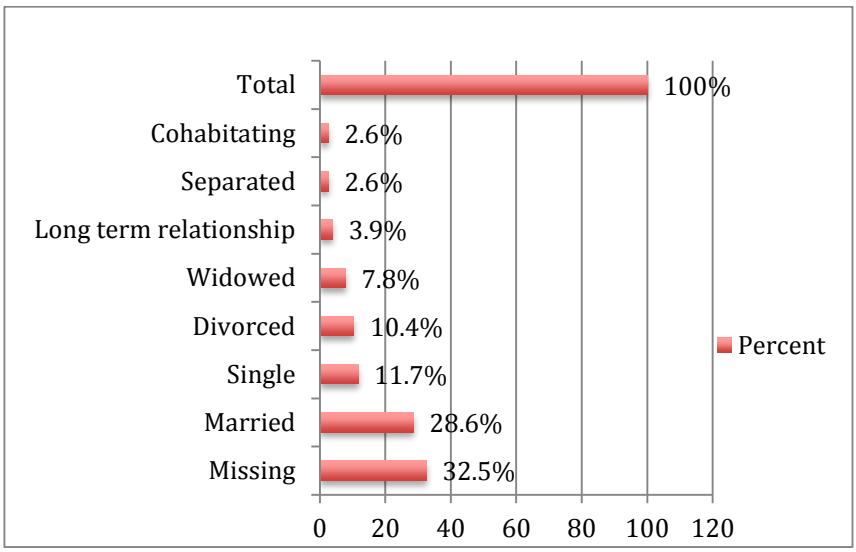

Figure 4.1.4 Marital status

Disability

Only 4% of participants declared not having a disability (Figure 4.5), while 35% reported having a long term, chronic condition (i.e. back pain), hearing or mobility difficulties. Data regarding disability from 61% was not available.

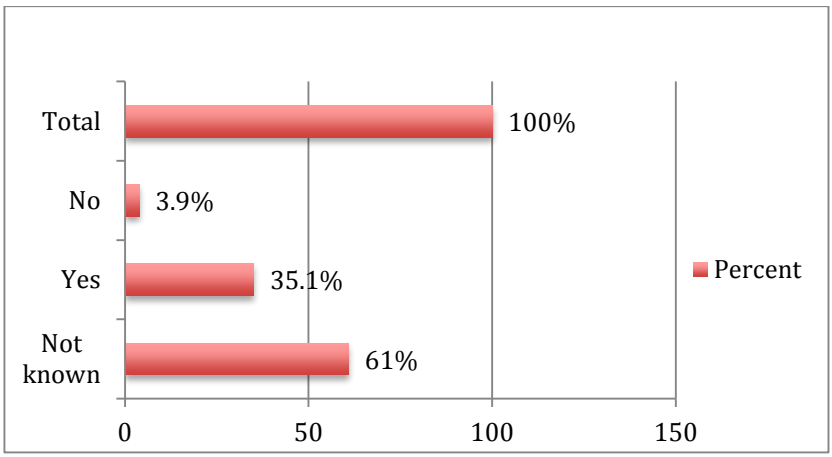

Figure 4.1.5 Disability

Religion

The majority of participants declaring their religion were Church of England or Catholic (Figure 4.6). A small majority reported to be atheist/agnostic (3.9%) or of other Christian religion (5.2%).

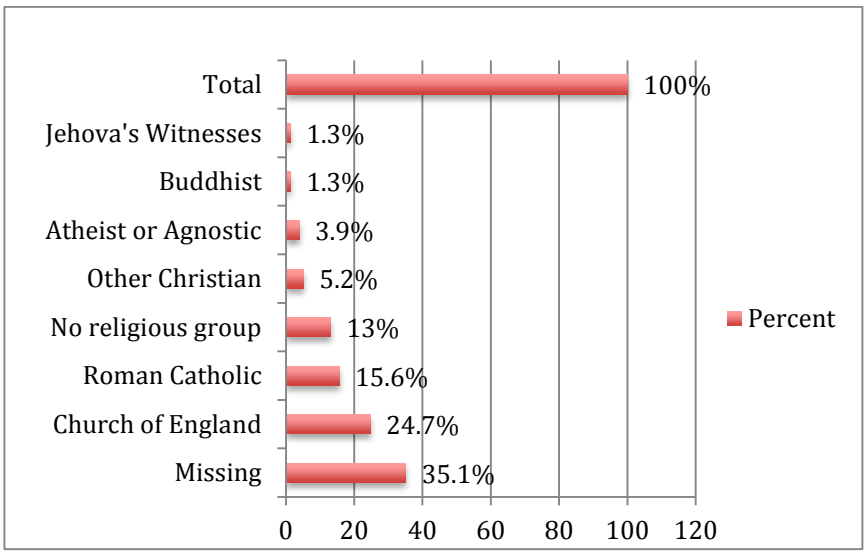

Figure 4.1.6 Religion

Sexual orientation

A large proportion of participants did not declare or were not asked about sexual orientation (54.5%) as seen in Figure 4.7. The majority of the participants were heterosexual.

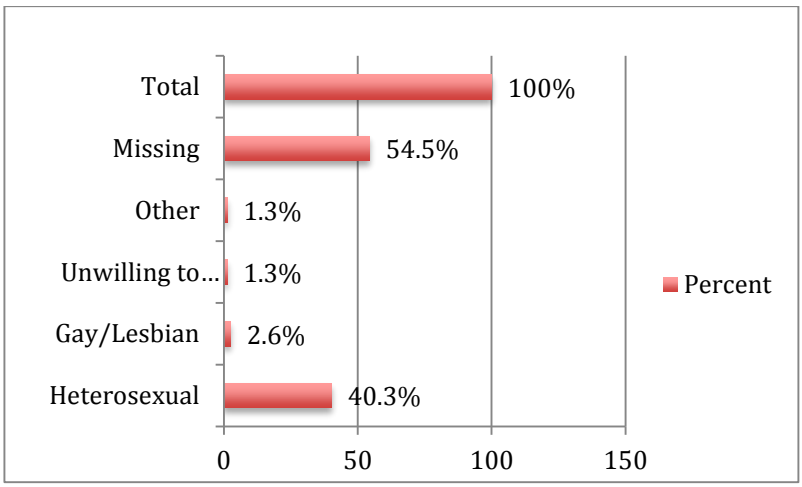

Figure 4.1.7 Sexual orientation

Diagnosis

The majority of participants (over 50%) received a diagnosis at assessment (Figure 4.8). The most prevalent diagnoses are depression or anxiety, or mixed anxiety and depression.

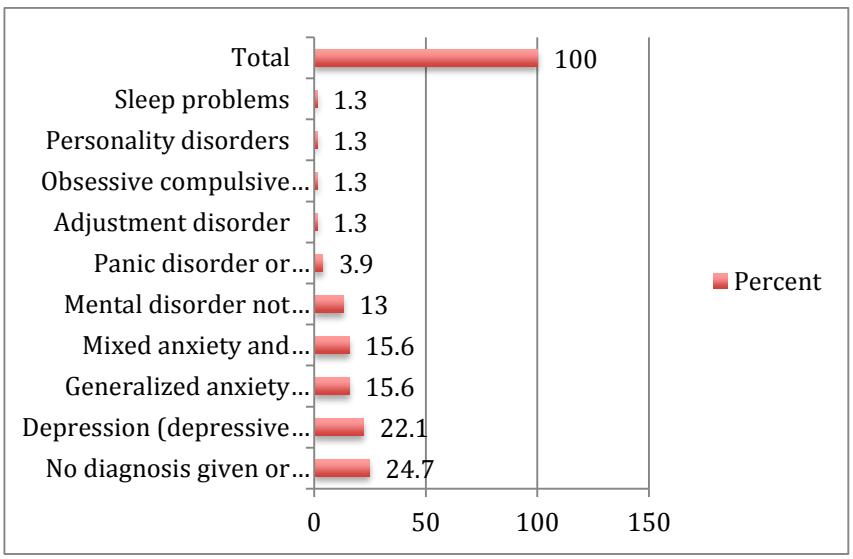

Figure 4.1.8 Diagnosis

Diagnosis by gender

Although statistically significant differences were not found between men and women in terms of diagnosis, Figure 9 shows that depression tended to be found in men more than in women, whereas anxiety, including panic disorder was found more in women than in men.

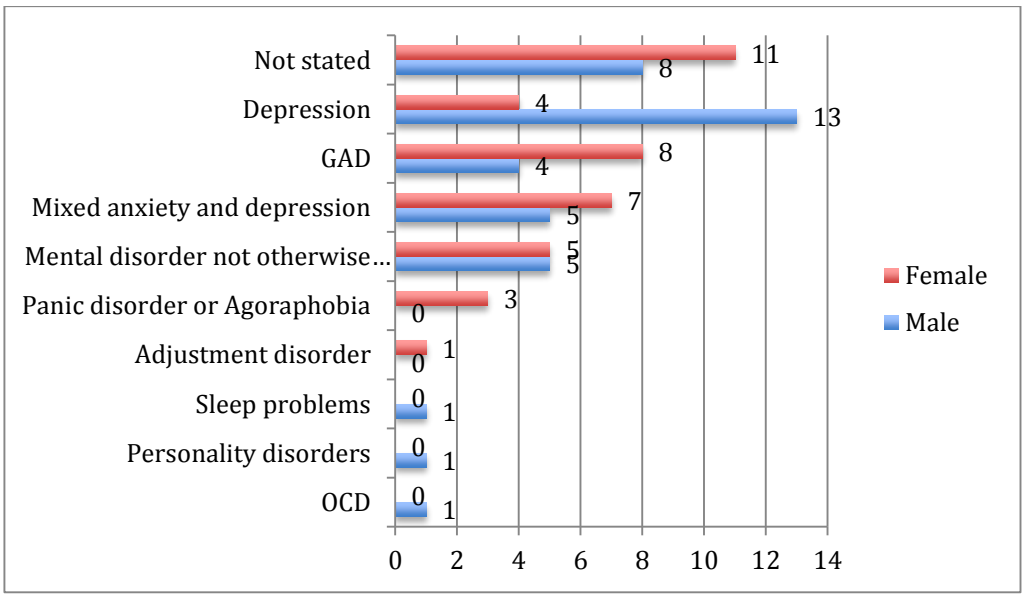

Figure 4.1.9 Diagnosis by gender

4.2 Referral, assessment and treatment process

Table 4.2.1 suggests that the average number of days between receiving and accepting referrals is 3 days, although most of the time the referrals are accepted within 1 day.

Table 4.2.1. Duration (days) of referral acceptance

(Duration) Days	N	Min	Max	Mean	SD
Time to referral accepted (days)	77	0	30	3.44	5.924
Time to assessment (days)	76	0	149	34.16	27.866
Time to start of treatment (days)	69	0	186	64.64	42.595
Duration of treatment (days)	68	0	559	74.04	87.378

The time relapsed from when the referral was accepted to when the assessment was attended by the client is on average 34 days. Clients spend on average 64 days from assessment to the start of treatment and around 74 days in low intensity treatment although the variability in the duration of treatment is significant. This variability may depend on the start dates for the workshops or groups to which the clients are referred or may as well depend on the clients' availability and health.

Individual and group treatments

The majority of clients referred to Low intensity treatments received individual therapy (Figure 4.2.1). Moreover, 92.2% of therapies were carried out face-to-face (Figure 4.2.2).

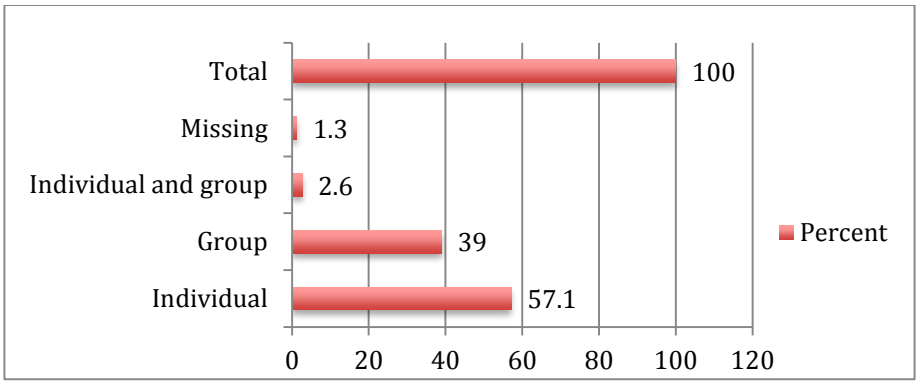

Figure 4.2.1 Individual and group treatments

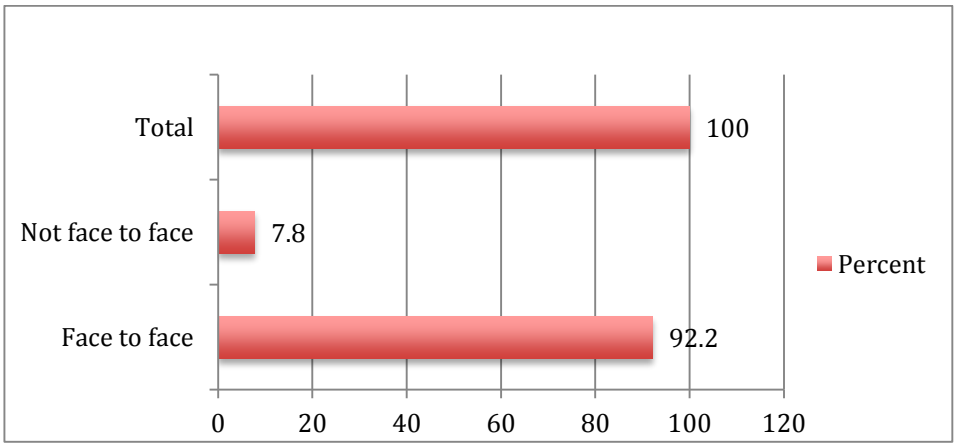

Figure 4.2.2Face to face and non-face to face treatments

Figure 4.2.3 shows a detailed picture of the types of treatment offered, indicating that a large proportion of clients were offered guided self-help (27.3%), whereas nearly a quarter of participants took part in workshops on stress and sleep (20.8%)

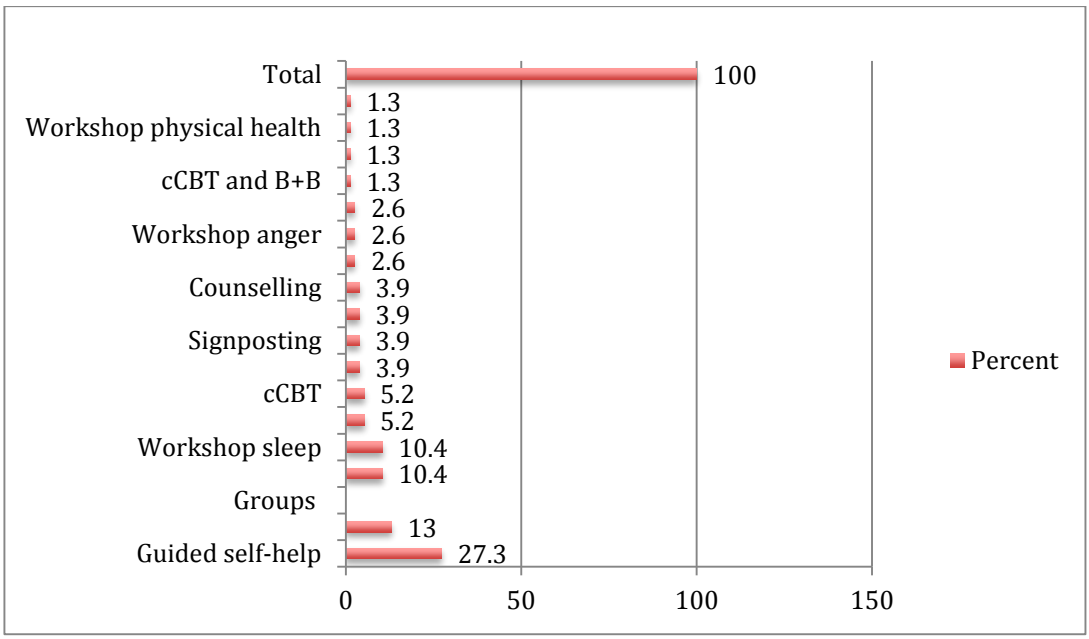

Figure 4.2.3 Types of treatment offered

4.3 Engagement with Step 2 treatment

In order to examine the engagement to treatment, only people who have been attended at least one treatment session were included in the analyses, as data for people who failed to engage after assessment were not available (Table 4.3.1).

Table 4.3.1 Sessions offered, attended, DNA and cancelled

Sessions	N	Mean	SD	Min	Max	Sum
Total offered	77	5.64	4.289	0	27	434
Total attended	77	4.52	4.074	0	27	348
Treatment DNA	77	0.56	1.006	0	4	43
Treatment cancelled by patient	77	0.35	0.602	1	2	27
Treatment cancelled by health professional	77	0.04	0.253	0	2	3

Table 4.3.2 shows that on average, clients were offered 5-6 sessions each. Overall, clients attended on average 4 sessions.

Overall, in the sample of 77 older adults, there were a total of 43 sessions not attended by clients without giving warning, 27 sessions were cancelled by clients and 3 sessions were cancelled by health professionals. Out of the 434 sessions offered to the 77 clients, 348 sessions were attended.

Figure 4.3.1 shows in more detailed how many clients missed 1 or more sessions. Overall, 43% of the clients attended all the sessions offered and nearly 45% of the clients missed 1 or 2 sessions. Only 12% missed more 3 or more sessions.

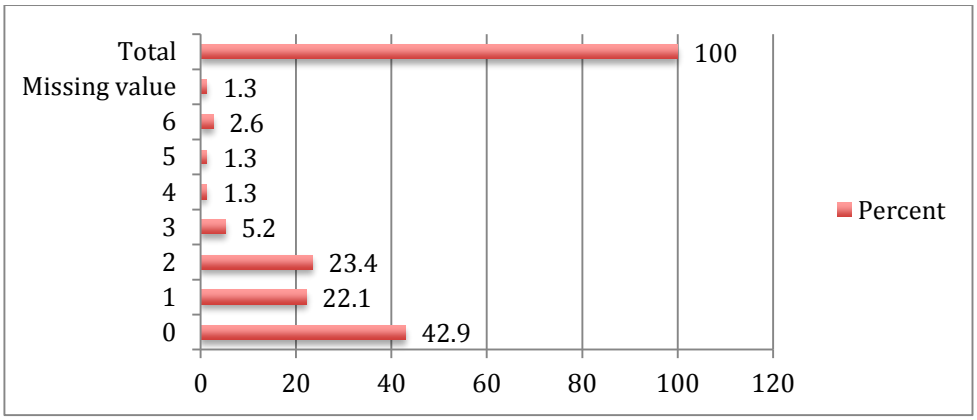

Figure 4.3.1 Percentages of clients by number of missed sessions

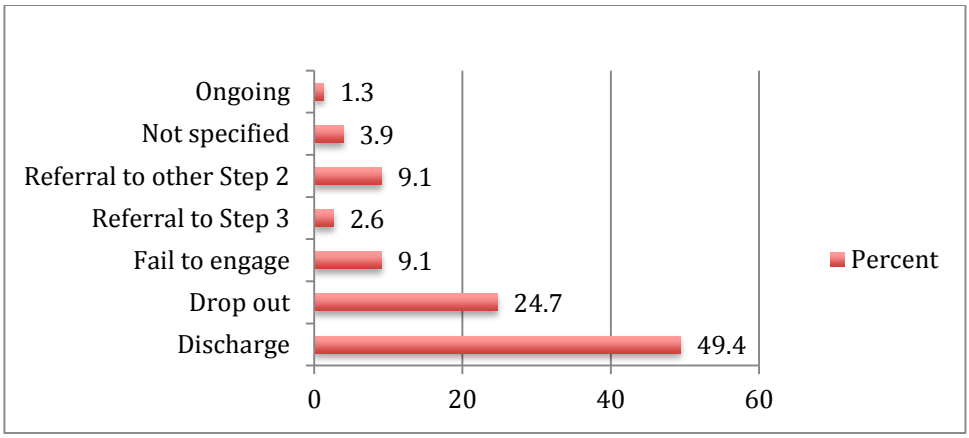

Figure 4.3.2 Reasons for ending treatment

In terms of reasons for discharge, half of the clients were discharged after a first episode of low intensity psychological treatment, whereas 25% dropped out after one or more sessions, nearly 10% failed to engage after assessment meaning that they did not start treatment. From the 77 participants, 12% clients were referred to further treatment, most of them to another low intensity treatment and nearly 3% were referred to step 3 treatment (Figure 4.3.2). There were no statistically significant gender differences in reasons for discharge with similar number of men and women discharged and dropping out. However, more women tend to fail to engage to treatment than men (Figure 4.3.3).

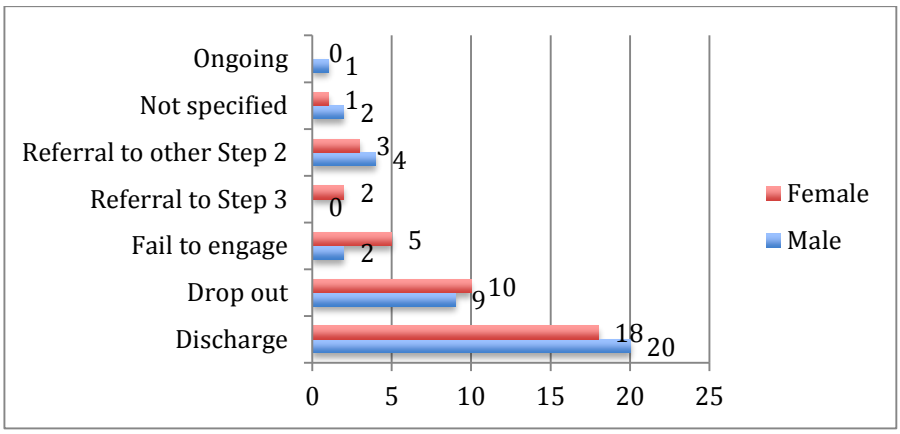

Figure 4.3.3 Gender differences in reasons for end of treatment

The sample was too small to calculate any relevant differences between different ethnic groups in terms of reasons for ending treatment.

Table 4.3.2 shows that Behavioural Activation and the MBCT treatment options have the lowest rates of drop-out and failure to engage. It seems that the guided self-help, psycho-education, the workshops on stress and anger have the higher rates of drop out and failure to engage in comparison with numbers of clients discharged from these treatments.

Table 4.3.2 Reasons for ending treatment and type of treatment

Treatment	Discharge	Drop out	Fail to engage	Other (i.e. re-referral)
Behavioural Activation	7	0	1	2
MBCT	4	0	0	0
Workshop Stress	3	4	1	0
Guided self-help	9	6	2	4
cCBT	3	1	0	0
Psychoeducation	1	2	0	0
cCBT and B+B	0	0	0	1
Signposting	1	0	0	2
Other	0	1	0	1
Workshop confidence	0	1	0	0
Workshop anger	0	1	1	0
Workshop sleep	6	2	0	0
Workshop physical health	1	0	0	0
Workshop self-esteem	2	1	0	0
MBSR	1	0	0	0
Step 3 Counselling & CBT	0	0	2	2
Total	38	19	7	2

4.4 Clinical outcomes

Average scores of depression and anxiety show overall moderate levels of older adults attending the service over the 4 years period.

The IAPT outcome measures cut off scores for clinical ‘‘caseness’’, scores above which correlate with diagnosis of a disorder are 10 and above for depression on the PHQ-9 and 8 and above for anxiety on the GAD7 (Table 4.4.1)

Table 4.4.1 Descriptive Statistics. PHQ and GAD scores at assessment and end of treatment

	N	Mean	SD	Minimum	Maximum
PHQ_A	71	9.90	5.979	0	27
GAD_A	71	9.44	6.047	0	21
WSAS_A	70	10.06	7.980	0	40
PHQ_E	52	8.37	6.441	0	23
GAD_E	52	7.27	5.622	0	21
WSAS _ E	50	8.34	7.515	0	30

Tables 4.4.2 and Table 4.4.3 summarize the number of “cases” and “non-cases” based on depression and anxiety scores at assessment and at the end of treatment.

Table 4.4.2 Recovery in depression scores (PHQ-9) for older adults

Frequency		Assessment	End of treatment
Valid	‘caseness’	33	17
	Non-’caseness’	38	35
	Total	71	52
Missing	System	6	25
Total		77	77

Table 4.4.3 Recovery in anxiety scores (GAD) for older adults

Frequency		Assessment	End of treatment
Valid	‘caseness’	40	22
	Non-’caseness’	31	30
	Total	71	52
Missing	System	6	25
Total		77	77

Overall, there seem to be more cases of anxiety than depression and, as seen in Tables

4.4.2 and Table 4.4.3, there is decrease of ‘‘caseness’’ from assessment to end of treatment in both anxiety and depression symptoms.

Statistical tests were run to determine whether these positive changes over the duration of treatment are significant.

T-tests and Wilcoxon test reveal statistically significant improvements in anxiety, depression as well as in overall functioning from assessment to end of treatment (Table 4.4.4).

Table 4.4.4 Mean scores for PHQ and GAD at assessment and end of treatment

		Mean	N	SD
Pair 1	PHQ_A	10.62	52	5.838
	PHQ_E	8.37	52	6.441
Pair 2	GAD_A	10.04	52	5.667
	GAD_E	7.27	52	5.622

Table 4.4.5 Differences in depression, anxiety and functioning scores between assessment and end of treatment (T-Test and Wilcoxon Signed Ranks Test)

	t	df	Sig. (2-tailed)
PHQ_A - PHQ_E	3.101	51	.003
GAD_A - GAD_E	3.623	51	.001
Wilcoxon Signed Ranks Test - Based on positive ranks			
	Z	Asymp. Sig. (2-tailed)	Exact Sig. (2-tailed)
WSAS_A – WSAS_E	-2.507	.012	.011

‘Recovery scores’ were computed by subtracting end of treatment scores from assessment scores.

These recovery scores for depression, anxiety and functioning were used in regression analyses as a dependent variable while the type of treatment was used as an independent variable.

It was found that the type of treatment did not predict recovery scores of anxiety (t= -

.307, p = .760). Recovery from depression was predicted by type of treatment (Table 4.4.6).

Table 4.4.6 Treatment as predictor of recovery

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.133	1.078		3.836	.000
	Type of treatment	-.320	.140	-.308	-2.291	.026
a. Dependent Variable: PHQ_recovery						

5. DISCUSSION

The aim of this audit was to evaluate the low intensity treatment offered to older adults in a London-based IAPT service.

The objectives of the project were to:

- Characterize the older adult client group demographically and clinically
- Describe the overall client engagement with treatment
- Evaluate the clinical outcomes of clients completing the treatment

5.1 Summary of findings

5.1.1 Demographical and clinical picture

Affective disorders and gender

Overall**,** similar numbers of male and female were referred and accepted into low intensity treatment. Moreover, although no statistically significant differences were found in diagnosis between female and male, anxiety disorders were more prevalent in females, while depression was more prevalent in males.

These findings do not fit entirely with the clinical picture described by epidemiological data and previous studies. Literature suggests that affective disorders including anxiety and depression, are disproportionately (almost doubled) prevalent in women (Cyranowski et al., 2000; Bijl et al., 2002; Kessler, 2003; Leach et al., 2008). The greater vulnerability of women varies with the age in that while in younger women the prevalence rates for depression are lower than in boys, after 19 years old the prevalence of depression almost doubles in the female population until 54 menopause (Cairney and Wade, 2002) and declines during older age (Bebbington et al., 1998; Cyranowski et al., 2000; Leach et al., 2008).

However, there are some studies that reported higher prevalence and incidence rates of affective disorders in women, even after menopause (Cairney and Wade, 2002; Bijl et al., 2002). For example, a study of a community sample of 2363 participants examined the relationship between disorders, age and gender and concluded that after menopause (and the corresponding age for men) the rates of cases who experienced an affective

disorder for the first time did not distinguish between the two sexes (8.6% females vs 5.8% males for depressive disorders, and 5.1 % females vs 4.4% males for anxiety disorders (Faravelli et al., 2013).

The relationship between gender and diagnosis is relevant for the understanding of the etiology of affective disorders. Inconsistent findings regarding this relationships seem to provide insufficient data to either confirm or disconfirm the hormonal hypothesis after menopause (Solomon and Herman, 2009; Oldehinkel and Bouma, 2011). It therefore seems that after menopause the risk for new cases is similar in the two genders, independently of the assumption of hormonal replacement therapy, as already suggested (Bijl et al. 2002; Cairney and Wade, 2002). Other theories that explain gender differences are gonadic theory (according to which hormone levels of women fluctuate cyclically over a much larger range than those of men, affecting brain regions known to be involved in the modulation of mood and behavior r e...,prefrontal cortex, hippocampus) (Oldehinkel and Bouma,2011).

Other hypotheses suggest that males and females present with different environmental risk factors (e.g., childhood adversities, psychosocial and economic factors) (Leach et al., 2008; Oldehinkel and Bouma, 2011). Nevertheless, the sharp change in the risk of affective disorder for women at the menopausal age, in contrast with the slower and smaller variations of the psychosocial factors, is a factor in favor of the hormonal position (Faravelli et al., 2011).

On the other hand, studies of community samples have shown that the generally higher prevalence of anxiety disorders in women compared with men continues throughout life (Bekker et al. ,2007). These differences seem independent of specific health care settings in the countries where such data have been collected, indicating that biological and psychosocial factors, either interacting or working alone, are responsible for the sex/gender differences in the prevalence of these disorders (Gatter et al., 1998).

Affective disorders and other demographical characteristics

Over three quarters of older adults (83%) referred and completed low-intensity treatment were White British. While 10.4% of ethnicity data were missing, 6.5% of

clients reported of being of ethnic minority. According to ONS, (Census 2001), in Southwark borough 81% of people with ages between 65-74 are of White ethnicity, while 92% of people over 75 years old are White British. Of the total population of over 65, 0.7% of men suffer of a severe mental illness, whereas 1.2% of women suffer of a severe mental illness (QMS Contract Focus 2008).

There is relatively little research into the mental health of older population if an ethnic minority in the United Kingdom (UK) (SCIE, 2008). Reports from over a decade ago - such as the Audit Commission's (2000) *Forget me not* and the Department of Health's Social Services Inspectorate (SSI) audit report *They look after their own, don't they?* (SSI, 1998) highlighted the challenges of commissioning and providing services for older people of ethnic minority and the need to raise awareness of mental health needs and provide care through a person-centred approach (ibidem). Despite this, progress in achieving good-quality culturally acceptable services has been uneven and strategies among the public sector remain underdeveloped (Manthorpe et al, 2008).

The Royal College of Psychiatrists report (2009) on psychiatric services for Black and minority ethnic older people highlight that the prevalence of depression among older people from different Black and minority ethnic groups in the UK, from population-based epidemiological studies, is generally similar to or higher than that among indigenous older people (Bhatnagar & Frank, 1997; Lindesay *et al*, 1997*a*; McCracken *et al*, 1997; Richards *et al*, 2000; Livingston *et al*, 2001). Several studies were conducted in London using convenience samples and found that the prevalence of depression of elderly Bengalis and Somalis in east London was higher than in the indigenous White British group (Silveira & Ebrahim, 1995, 1998), but lower in a convenience sample of elderly Gujaratis in north London (Ebrahim *et al*, 1991; Silveira & Ebrahim, 1998).

Depression among Black and minority ethnic older people from several different groups has been shown to be associated with chronic health problems, stroke, subjective ill health, functional disability, increasing age, poor housing, low family support, reported need for community services, poor socioeconomic status, female gender and poor fluency in English (Silveira & Ebrahim, 1995, 1998*b*; McCrakken *et al*, 1997; Livingston *et al*, 2001; Stewart *et al*, 2001*a*).

There may be several factors that contributed to low numbers of older people of ethnic minority in this sample. One is ‘awareness and views of depression’. A recent study carried out in Islington London found that African–Caribbean older people compared with White British older people in Islington were more likely not to view depression as an illness, choose not to consult their GP or psychiatric services, perceive depression as stigmatising, and feel that spiritual help may be more appropriate (Marwaha & Livingston, 2002).

Moreover, the RPCL report suggests that Black and minority ethnic older people are often **unaware of available services** and of the procedures to apply for these services, are more likely to be turned down for services and, if accepted, are more likely to be dissatisfied (Lindesay *et al*, 1997*b*; Bowes & Wilkinson, 2003). However, there is evidence that this may be changing (Redelinghuys & Shah, 1997; Richards *et al*, 1998; Odutoye & Shah, 1999; Livingston et al., 2002; Bhatkal & Shah, 2004).

These conclusions suggest that “there is a need for more service and research development for mental health needs of Black and minority ethnic older people as, regrettably, this is still a neglected area” (RCPL, 2009, p. 32).

5.1.2 Client engagement

Overall, engagement with treatment was measured by sessions attended and not-attended compare to total sessions offered. The findings suggest good engagement of people who completed treatment with an average of one session missed when the mean number of sessions attended was five.

Almost 50% of people offered treatment were discharged after completion, while a third (33.8%) dropped out or failed to engage, and approximately 13% were referred for further treatment or are currently receiving treatment.

While similar numbers of men and women are discharged or drop out, it seems that more women tend to fail to engage than men, meaning that they do not start treatment. It might be that this is because of the type of treatment offered, as findings show that the most engaging types of treatment are Behavioural Activation and MBCT, while the

least engaging seem to be the workshops on anger and stress, guided self-help, psycho-education.

MBCT and Behavioural Activation involve active participation from clients as well as a very structured therapeutic program including individual homework during the week. Moreover, it may be that in these treatment options, the therapists are much more engaged and actively participating to sessions themselves allowing for a better therapeutic relationship to be established. While the literature suggests that guided self-help is as efficacious and other face-to-face therapy (Cuijipers et al., 2010), this may not be the case for older adults. Decline in cognitive abilities as well as different awareness and familiarity with psychological concepts are several possible factors that impact on client engagement with self-guided treatment options.

5.1.3 Clinical outcomes and treatment efficacy

The findings indicate a decrease in 'caseness' for both depression and anxiety and a significant improvement in depressive and anxiety symptoms between assessment and discharge.

The mean for depression in this sample was 9.90, (SD=5.97) while the cut-off score for 'caseness' is 10. For anxiety, the mean of 9.4 (SD=6.04) represents a higher score than the cut-off score for 'caseness' which is 8. In the case of anxiety, the mean score at the end of treatment was under 7.

As expected, for a primary care service, the scores for depression and anxiety indicate moderate levels at assessment, that fall into the non-problematic range after treatment. The results suggest that the treatment is efficacious, however due to high drop-out rates, it might be important to consider the acceptability and relevance of low intensity treatment for older adults.

The type of treatment did not predict recovery in anxiety and functioning scores, however it did predict recovery in depression scores. This is meaningful when taking in consideration the type of treatments with the highest number of clients and that seem most engaging. These treatments are Behavioural Activation and MBCT, both being developed and targeting depression. The findings confirm the existing research evidence

suggesting that Behavioural Activation and MBCT are efficacious for the treatment of depression.

5.2 Implications for practice

Self-report data clearly indicates a reduction in depressive and anxiety symptomatology as well as an improvement in overall functioning. This suggests that low intensity treatment options respond to the needs of this client group and prove to be efficacious. However, only approximately 50% of the clients completed treatment and were discharged. Higher rates of drop out and failure to engage to treatment suggest that there is scope to improve the access and relevance of this treatment for older adults. While treatment types seem to be a good predictor of recovery from depression, similar structured low intensity treatments targeting anxiety symptoms as well as overall functioning may need to be developed and trialed for this client population. This has implications for IAPT low intensity staff and for the development of IAPT services as a whole.

5.3 Future investigations

Future audits may consider in more details reasons for drop out or for failure to engage with treatment in order to identify factors that might suggest adaptations and adjustments to treatment. A qualitative study exploring the acceptability and relevance of treatment for older adults offered low intensity treatment may also prove useful. Comparisons between younger and older adults offered similar treatments may reveal important information that may help understand older people's engagement with psychological treatment and reasons for treatment success.

5.4 Limitations

There are several limitations that need to be mentioned. First, in terms of characterization of the sample, it is worth considering that there are missing data and as a consequence, a clear conclusion could not be drawn in terms of marital status, sexual orientation or disability. Moreover, this audit reports data on the first episode and treatment for each participant and did not take into account further episodes that followed after the first course of treatment. Further investigation into treatment following a first episode may be need.

5.5 Dissemination of findings

The findings of this audit will be presented during the service clinical team meeting and they are intended for publication in due course.

5.6 Conclusions

Low intensity treatments offered to older adults referred to the IAPT service prove efficacious in decreasing anxiety and depression symptoms and increasing overall functioning in people who engage with the treatment. Moreover, clients seem to engage best with structured treatments such as Behavioural Activation and MBCT and less with guided self-help, psyco-education, and workshops on stress and anger. Treatment types predict recovery from depression, however it did not predict recovery from anxiety and improvement in overall functioning.

Engagement of older adults with the service may improve by further exploring the acceptability of low intensity treatments in this population while adaptations and adjustments may be needed in order to increase participation. Furthermore, future investigation might need to consider the characteristics of people who fail to engage or drop out and reasons for disengagement with treatment. Engaging older adults of ethnic minority seem to be difficult as efforts of increasing access of this population to psychological therapies continue to be on the health agenda of psychology services.

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Main Research Project

The role of emotion regulation in affective disturbance and psychotic-like experiences in adolescent inpatients

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The role of emotion regulation in affective disturbance and psychotic-like experiences in adolescent inpatients

Abstract

Background & rationale: Improving child and adolescent mental health is a national priority. Evidence suggests that effective psychological intervention at the earliest opportunity can reduce the likelihood of a severe and enduring course across a broad spectrum of disorders. Poor emotion regulation (ER) is implicated in the development and persistence of a range of psychopathology, including affective disturbance, post-traumatic symptomatology, and persisting psychotic-like experiences (PLEs). As all of these factors contribute to childhood vulnerability for persisting future mental health problems, including clinical psychosis, understanding their inter-relationships with emotion regulation, and with clinical recovery, could improve interventions to reduce future mental health risk and promote resilience. The current study is the first, to author's knowledge, to investigate the associations between ER, affective disturbance, trauma, and PLEs and their transdiagnostic roles in clinical recovery from mental health crisis in adolescents.

Method: Forty-two adolescent inpatients, aged 12-18 years, completed measures of general psychopathology, affective disturbance, ER, trauma, and PLEs at the start of admission, and a measure of recovery at discharge. A subset repeated the assessment measures at discharge.

Results: Participants showed severe ER difficulties at admission, which were strongly associated with affective disturbance, but only weakly associated with trauma and PLEs. Substantial functional recovery occurred over the course of the inpatient stay, but this was unrelated to specific self-report clinical measures at admission. Of these, only ER showed significant change from admission to discharge, independently of functional recovery.

Conclusions: Emotion regulation was found to be a key feature of adolescent mental health crisis, and a worthwhile target of inpatient interventions. However, functional and regulatory improvements during the admission were not mirrored by change in self-reported clinical symptoms. Future research should consider the longevity and later impact of improvements in ER: inpatient interventions may require ongoing targeted community support around areas such as improving access to ER strategies to effect symptomatic improvement and thereby reduce future mental health risk.

CHAPTER 1 INTRODUCTION

1.0 Overview

The overall aims of this thesis are to examine the regulatory processes involved in managing difficult emotions in young people who are admitted to an inpatient ward following an acute mental health episode and to examine the associations of emotion regulation with trauma, affective disturbance and psychotic-like experiences.

A secondary aim was to identify patterns of change in emotion regulation over time (from admission to discharge) and their potential influence upon improvements in clinical symptoms and functional recovery.

The introduction will, therefore outline a theoretical framework for emotion regulation, review literature on the role of emotion regulation in general psychopathology, and in the development and maintenance of psychosis and psychotic-like experiences in adults, children and young people, and present the rationale for the study, together with its aims and hypotheses.

The purpose of the literature review is to better understand ER in inpatient adolescents in general and its role in adolescent psychotic-like experiences in particular. The review also focuses on ER and PLEs and ER and psychosis in clinical and non-clinical groups in the adult population. Key findings from the wider literature on ER and psychopathology in children and adults are discussed where relevant, to understand how PLEs and acute episodes compare to other mental health problems. However, an in-depth review of this substantial literature is not the primary focus of this thesis.

The first chapter begins with a brief overview of the conceptual and definitional difficulties in researching ‘emotion’ and its regulation, beginning with attempts to understand emotion regulation as a unitary construct or process, and key linked processes. This is followed by an outline of the main currently accepted multifactorial model of emotional regulation, elucidating the component processes and recent modifications.

The second section moves on to consider the evidence supporting the role of emotion regulation in adult psychopathology, with a short summary of findings related to affective and behavioural problems, the association of emotion regulation with trauma, and the mediating role of emotion regulation in the pathway from adverse life events to general psychopathology. These areas have, to date, been the main focus of emotion regulation research.

The more limited literature on emotion regulation in adolescents, and its role in emerging psychopathology is then reviewed in depth, followed by the recent literature considering the association of emotion regulation with psychosis, and with psychotic-like experiences in adults, and then in children and adolescents. Preceding this section, a summary of continuum and dimensional models of psychosis is provided, to contextualize the non-clinical studies.

The literature review concludes with a brief summary of the prevalence and impact of adolescent mental health difficulties, and of current care options, with a particular focus on inpatient care.

The rationale for the current study precedes a list of the primary and secondary hypotheses to be tested, which completes the first chapter. The remaining chapters describe the study methodology (Chapter 2), and the results (Chapter 3), before summarizing the theoretical and clinical implications and directions for future research in the discussion and conclusions (Chapter 4).

1.1 Definitions and scope

1.1.1 Emotions: definitions and theories

Emotions are recognized as complex, multifaceted, and difficult to define or comprehend by means of a single, unifying theory (Smith & Lazarus, 1990). Nevertheless, their central role in normal human functioning, and in the development and maintenance of psychopathology, makes them a prominent focus of clinical research and a key target for interventions designed to promote wellbeing and reduce distress.

Current consensus, as delineated by e.g. Niedenthal, Krauth-Gruber, and Ric (2006) and Scherer (1984) is that emotion is best conceptualized as a biological, cultural, social and relational phenomenon (Williams, 2001; Strongman, 1996), comprising several components: a) subjective feelings or emotional experiences; b) expressive motor behaviour such as facial displays; c) cognitive appraisals and styles which intervene in processing affective information (Lazarus, 1991; Shachter and Singer, 1960); d) physiological arousal (James-Lange, 1922; Cannon, 1927); and e) readiness to take particular action. There is also shared recognition of the variance in intensity and duration of emotions leading to the identification of three different types of emotional state (Turner, 2004): moods, emotions and sentiments.

According to Turner (2004), a 'mood' is "generally treated as a low intensity, short duration state for the actor and has limited organizing effect on social interaction" (p.149). In contrast, emotions: "are intense and transitory states signified by intense behaviour of actors. They often occur in response to experienced situations or acts of others and are thus instantiated in ongoing interaction" (p.148). Finally, sentiments are "generally conceptualized as of lesser intensity than emotions, but of longer duration".

The definitional complexities concerning emotion are not the focus of this thesis and therefore, for the purpose of this study, the terms 'emotion' and 'affect' will be used interchangeably and incorporate states of varying intensity, without discriminating according to conceptual framework. This is consistent with the majority of research into psychopathology, where affective disturbance is measured according to intensity, frequency, duration and impact (e.g. Watson, Clark, & Tellegen, 1988; Spielberger, Jacobs, Russell, & Crane, 1983). However, positive and negative affect will be discriminated, as they have been considered to play different roles in the development and persistence of psychological problems, and, although both requiring regulation, may involve different management strategies (Watson, et. al., 1998, Clark & Watson, 1991).

1.1.2 Emotion regulation (ER): definitions

The adaptive management of emotions is critical for social functioning and psychological well-being (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Denham, 1998; Eisenberg, Fabes, Guthrie & Reiser, 2000). Emotion regulation refers to processes that influence the experience and expression of emotions, and their current and ongoing impact on behaviour (Gross, 1998). Emotion regulation is defined by Thompson (1994) as "both intrinsic and extrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (pp. 27-28).

ER has been conceptually linked to, and it is sometimes considered to be synonymous with, a range of other emotion-related constructs, mechanisms, and developmental processes. These will be briefly reviewed in the following section, before moving on to consider the currently accepted, multi-process accounts.

1.1.3 Distinctions and commonalities: ER and other emotion-related constructs

1.1.3.1 ER and attachment

An important concept in the understanding of ER is *attachment* (Bowlby, 1969; Kobak, Cole, Ferenz-Gillies, Fleming & Gamble, 1993; Cassidy, 1994; Copper, Shaver & Collins, 1998; Bowlby, 2005; Mikulincer & Shaver, 2008). In a seminal paper, Cassidy (1994) integrated work on the adaptive function of ER (Bretherton, Fritz, Zahn-Waxler & Ridgeway 1986; Campos, Barrett, Lamb, Goldsmith & Stenberg,1983), with research into the social role of emotions, and their specific importance as regulators of interpersonal relationships (Charlesworth, 1982; Izard, 1977), to outline a model of how a child's formative interactions and attachment history may shape individual differences in the development of the self-monitoring, regulation and soothing strategies that comprise emotional regulation. A significant body of research has considered the inter-relationship of ER and attachment. However, as this thesis is concerned primarily with understanding the *effects* of poor emotion regulation, factors implicated in its *development* will not be considered in depth; the literature will be touched on briefly in later sections in relation to psychosis, but for the purpose of this thesis, it is sufficient to recognize the socio-developmental origins of, and influences upon, ER.

1.1.3.2 ER and affective instability

Although a consequence of poor ER, instability of mood is frequently considered to be synonymous with ER. Marwaha, Broome, Singh, Scott, Eyden and Wolke (2013) systematically reviewed the definition and measurement of "affective instability" (AI) which they defined as the consequence of poor emotion regulation, alongside similar constructs including: affective lability, affective (dys)regulation, emotional dysregulation, emotional lability, mood lability, mood instability, mood swings. The review proposed a definition of affective instability which incorporated ER, as "rapid oscillations of intense affect, with a difficulty in regulating these oscillations or their behavioural consequences' (Marwaha, Broome, Singh, Scott, Eyden and Wolke, 2013a). Although these authors found emotion regulation to be used interchangeably in the literature with affective instability or with other terms denoting emotional instability, for the purposes of the current study, emotion regulation is not meant in the sense of instability. Rather, in the present study, reference to emotion regulation is meant in the sense defined by Thompson (2004) as a complex interplay of general processes of monitoring, evaluating and modulating emotional responses.

1.1.3.3 ER and other 'coping' mechanisms

Gross (1998) notes both 'coping strategies' and 'defenses' as other constructs associated with emotion regulation in the literature. Coping is distinguished by Gross from emotion regulation by its primary focus on decreasing negative emotion experience and by its use of the 'protracted organism-situation interaction' - or 'emotion episode' - as the preferred unit of analysis (in other words, one copes on a particular occasion, rather than 'coping' being an enduring characteristic of a person, Gross, 1998). ER, in contrast, is an overarching process, of which episodic coping examples may form a part. 'Defenses', like coping, typically have as their focus the (usually unconscious) regulation of negative emotion experience, particularly anxiety (Bond, Gardner, Christian, & Sigal, 1983). Again, defensive strategies may be part of an individual's ER landscape, but, like coping, are variable and specific subcomponents of a mechanistic whole, and should not be considered to be synonymous with ER.

1.1.3.4 ER and alexithymia

Barlow and colleagues (2004) suggested that *alexithymia* is a precursor of emotion dysregulation and defined alexithymia as an inability to articulate emotions in words, linked to the inability to distinguish feeling from thought, or physical arousal from emotional arousal. The authors argue that experiential *avoidance* might be the mediating variable by which alexithymia influences regulation of emotions or affective states. They demonstrated that alexithymic individuals had high levels of both emotion dysregulation and experiential avoidance, with the inability to use language effectively to identify and describe emotional states correlating strongly with emotion regulation difficulties, mediated by an inability to tolerate difficult emotions. Again, although this may be one component of ER, and a likely influencing factor, ER involves a wider range of other mechanisms, not all driven by difficulty with affect recognition and verbal description. In this thesis, ER difficulties are not limited to those associated with deficits in the understanding and processing of emotion.

1.1.3.5 ER and cognitive processes

ER, by definition, requires monitoring of emotional states and their influence on current and ongoing functioning. Attentional processes are therefore an inherent component of ER, and attentional biases a potential source of influence. In a substantial review of the literature on ER and attention, Todd, Cunningham, Anderson and Thompson (2012) conclude that although affect-biased attention is not typically considered to be a type of emotion regulation in itself, affective biasing of attention does have a role in regulating emotional responses by 'tuning one's filters for initial attention and subsequent processing'. Moreover, the authors argue that habitual affective filtering processes are often proactive or effortful rather than reactive suggesting that individuals can deliberately moderate their influence upon emotional responses, thereby regulating the emotion itself. For the purposes of this thesis, attentional processes in relation to emotions are considered as a possible component of regulatory strategies, and are viewed as overlapping, but not synonymous, with ER.

1.1.3.6 Neurocognitive underpinnings of ER

Evidence from neurological investigations of emotion regulation suggests that the interplay between *emotion* and *cognition* may be fundamental to the ability to adaptively regulate emotions even though, historically, emotion and cognition have

been considered to operate as separate, and sometimes opposing, subsystems (Dennis, 2010). Dennis reviews studies showing that scalp-recorded event related potentials (ERPs) reflecting emotion–cognition integration can be used as clinically meaningful indices of emotion regulation in children and adults, and have the potential to serve as biomarkers for emotion regulation and risk for specific affective disorders. Drawing on neuroscience and behavioural research, the author proposes a model in which ERP measures of emotion–cognition integration rather than opposition is the guiding principle for detecting neural markers for emotion regulation.

The extent of gene-environment interaction in shaping these neurocognitive processes is as yet unspecified: the hypothesized role of early attachments and interactions at a formative stage of brain development suggests an early role for environmental influences. However, later interactions would also be possible. For example, Beauchaine, Gatzke-Kopp and Mead (2005) reviewed studies of autonomic nervous system functioning in children with conduct problems, and the relationship between emotion dysregulation and conduct problems from preschool to adolescence. They propose a biosocial developmental model of conduct problems in which inherited impulsivity is amplified by a cycle of emotional lability and social reinforcement, maintaining inattention and behavioural difficulties. As the purpose of this thesis is ultimately to inform ER interventions, the focus is primarily upon ER characteristics which are accessible to verbal self-report. Neurocognitive underpinnings, although of interest in understanding the construct and its physiological substrates, are less directly relevant to psychological treatment, and will not, therefore, be a particular focus of this thesis.

1.1.3.7 Valence of affect and regulating positive emotion

Although ER is relevant to emotions of any valence and intensity, the majority of research has focused on the regulation of negative affect and associated disorders, rather than positive affect. In a recent theoretical review of the role of positive emotion regulation in emotional disorders, Carl, Fairholme and Gallagher, Thompson-Hollands, and Barlow (2013) present a transdiagnostic model of positive emotion disturbances and point out that, as disturbances in positive emotion regulation occur routinely across anxiety and mood disorders, treatment strategies may need adapting to target the

regulation of positive as well as negative emotions (see recent review by Hechtman, Raila, Chiao & Gruber, 2013). In an acute setting, regulation of positive emotion is particularly pertinent, not simply to promote wellbeing when positive emotional experience has been overly down-regulated, but also to manage excessive positive affect in grandiose and manic presentations. There is a small emergent literature on ER in these disorders, which is considered in section 2 of this chapter. In this thesis, ER will be considered in relation to positive as well as negative affect, as an important area of development.

1.1.3.8 Summary

The literature on ER and related constructs facilitates an understanding of the multifaceted nature of ER, its potential biosocial and developmental origins, candidate mediating and moderating influences, and consequent implications for practice and therapy. However, this literature has tended to hold ER as a unitary phenomenon, or consider only a single component of ER, rather than the complex system of interactive processes that must underpin the effective management of emotion. The next section of this thesis goes on to review an influential multifactorial account of ER in order to provide a framework for understanding the hypothesized role of ER in the current study.

1.1.4 Emotion regulation: mechanisms, functions and processes

A key and well-established approach to emotion regulation and psychopathology has been developed by Cicchetti, Ackerman and Izard (1995) who examined the role of emotions and emotion regulation in developmental psychopathology and noted that while the undifferentiated construct of emotion regulation is useful as a metaphor of balance, it is too broad to be useful as an explanation of specific behaviours. Understanding the process of regulating an emotion requires reference to component *control mechanisms*, *functions* and *processes* that both influence emotional intensity and coordinate emotion and action (Cicchetti et al., 1995). The following section briefly outlines each of these three dimensions of emotion regulation.

The authors identify four key characteristics of control *mechanisms*: i) control must concern the separable causes of felt emotion (i.e. neural, sensorimotor, affective, and cognitive inputs to the emotions system); ii) control structures must regulate

output/responses of the emotions system as well as inputs; iii) control structures should reflect the involvement of cognitive mechanisms and therefore can be considered affective-cognitive structures; and iv) control structures coordinate emotion and action, which includes expressive behaviour under voluntary control. Distinction needs to be made between problems of emotion regulation and *dys*regulation: the authors suggest that poor regulation results from inadequate control, leading to disruption of ongoing goals by emotional processes, or engagement in ineffective regulatory strategies; dysregulation requires existing control structures to operate in a maladaptive manner and direct emotion toward inappropriate goals. Most internalized and externalised disorders can be considered to reflect dysregulation of cognitive-affective structures.

Cicchetti et al. (1995) also identify two *functions* of emotion regulation. The *monitoring* function is based on emotion knowledge and awareness of self and others in terms of feelings, desires and impulses. Monitoring then serves the *modification* function, which moderates emotional inputs and links this to the co-ordination of emotion and action.

Finally, the *processes* of emotion regulation are considered to apply to both positive and negative emotions and to include: attenuation or deactivation of an on-going emotion; amplification of an on-going emotion; activation of a desired emotion; masking or disguising of an emotion feeling state.

This broad framework has been widely accepted in the field, but has been moderated and refined by later authors. Gross and Thompson (2007) noted that both conscious and unconscious regulation of emotion is possible, so not all strategies may be under an individual's control. Jazaieri, Urry and Gross (2013) identified that amplification/attenuation strategies may target intensity/magnitude and/or duration, and change different strategies may regulate each of these dimensions of emotion separately. Moreover, emotion regulation processes cannot be regarded as 'all good' or 'all bad', as the specific context determines the extent to which a certain strategy may be helpful for that context taking into consideration one's goals (Jazaieri, Urry and Gross, 2013).

This general theoretical model provides a framework within which to understand the component processes of ER, and specifies their purpose, function and characteristics. However, such models fail to operationalise the specific strategies that constitute ER for each individual. Of particular relevance for this thesis are those strategies that are accessible to the individual themselves, whether controllable or not, so that they can be routinely assessed using self-report instruments. These strategies are reviewed in the next section.

1.1.5 Types of emotion regulation strategies

In order to distinguish between different emotion regulation strategies, Gross (1998) proposed a process model of emotion regulation that differentiates between a) ***antecedent-focused emotion regulation*** strategies (such as *situation selection strategies, situation modification strategies, attentional deployment and cognitive change*) and b) ***response-focused emotion regulation*** (such as *response modulation*).

Situation selection refers to approaching or avoiding certain people, places, or objects in order to regulate emotions (Gross, 1998). *Situation modification* refers to active efforts to directly modify the situation so as to alter its emotional impact and constitutes an important form of emotion regulation. Such efforts have been referred to in the stress and coping literature as problem-focused coping (Lazarus & Folkman, 1984) and by Rothbaum, Weisz and Schneider (1982) as primary control.

Attentional deployment is one of the first emotion regulatory processes to appear developmentally (Rothbart, Ziaie, & O'Boyle, 1992). Strategies for changing attentional focus may be grouped loosely under the headings of *distraction*, *concentration*, and *rumination* (Gross, 1998). *Distraction* focuses attention on non-emotional aspects of the situation (Nix, Watson, Pyszczynski, & Greenberg, 1995) or moves attention away from the immediate situation altogether (Derryberry & Rothbart, 1988). Distraction also may involve changing internal focus (Gross, 1998). *Concentration* has the capacity to absorb cognitive resources whereby a task which requires the bulk of people's cognitive resources "absorbs" moods by preventing further preoccupation with mood-related thoughts (Erber & Tesser, 1992). Rumination also involves directed attention (Gross, 1998), however the attention is directed to feelings and their consequences. Ruminating

on the negative emotions characteristic of depression leads to longer and more severe depressive symptoms (Just & Alloy, 1997; Nolen- Hoeksema, 1993).

Cognitive change consists of modifying cognitive evaluations of situations (Frijda, 1986). One form of cognitive change that has received particular attention is reappraisal which involves cognitively transforming the situation so as to alter its emotional impact (Gross, 1998).

According to Gross (1998), *response modulation* refers to directly influencing physiological, experiential, or behavioural responding. In contrast with the emotion regulatory processes described above, response modulation occurs late in the emotion generative process, after response tendencies have been initiated. Attempts at regulating the physiological and experiential aspects of emotion are common (i.e. use of alcohol and drugs). This may be considered the most common form of emotion regulation represented by the modulation of expressive behaviour (Gross, 1998). Another form of response modulation widely researched is *suppression,* consisting of inhibiting the outward signs of inner feelings (Gross, 2002).

The valence of affect is important: for both adults and children, different mood states have been associated with different strategies. Recent research revealed positive correlations between positive affect and reappraisal as an ER strategy and a negative association between reappraisal and negative affect (Gross and John, 2003; Vredeveld, 2011). Similarly, research (Gross and John, 2003; Vredeveld, 2011) has found a negative association between positive affect and suppression as an ER strategy and a positive association between negative affect and suppression.

The most researched emotion regulation strategies are *suppression* (considered unhelpful) and *reappraisal* (considered helpful) (i.e. Henry, Rendell, Green, McDonald, & O'Donnell 2008; Ehring, Tuschen-Caffier, Schnülle, Fischer & Gross 2010, Aldao et al., 2010).

The emotion regulation measures used in this study assess some of the strategies mentioned by Gross (1998) (i.e. rumination, reappraisal, refocusing on planning which

can be treated as a distraction strategy) and others that have been identified since as important correlates of affective change, particularly in affective and behavioural disorders (i.e. self-blame, catastrophisation, non-acceptance of emotional responses; Garnefski et al., 2001; Gratz and Roemer 2004). The next section will review the role of ER in adult psychopathology.

1.2 Emotion regulation (ER) and general adult psychopathology

Since the publication of Cicchetti et al.'s influential model (1995), emotion regulation has become increasingly integrated into explanatory models of psychopathology across disorders in adults (Berenbaum, Raghavan, Le, Vernon, & Gomez, 2003; Greenberg, 2002; Kring & Bachorowski, 1999; Mennin & Farach, 2007). The primary foci have been affective disorders, predominantly anxiety and depression (Campbell-Sills & Barlow, 2007; Gross & Munoz, 1995; Mennin, Holaway, Fresco, Moore, & Heimberg, 2007), behavioural conditions, such as alcohol and other substance misuse (Sher & Grekin, 2007; Tice, Bratslavsky, & Baumeister, 2001) and eating disorders (Fairburn, Norman, Welch, O'Connor, Doll & Peveler, 1995; McCarthy, 1990; Polivy & Herman, 2002). ER is also seen as key to the development and persistence of post-traumatic symptomatology (e.g. Krell, 1993; van der Kolk, 1996; Ehlers & Clark, 2000; Frewen and Lanius, 2006; Yehuda, Brand, Golier & Yang, 2006; Goldsmith, Chesney, Heath & Barlow, 2013; Shepherd and Wild, 2014) and to mediate the impact of adverse life events and previous abusive experiences, including complex trauma and adversity, on later affective, behavioural and interpersonal difficulties. ER is viewed as operating in conjunction with other effects of the attachment difficulties hypothesized to underlie poor emotion regulation (e.g. Carvalho Fernando, Beblo, Schlosser, Terfehr, K., Otte et al., 2013; Herr, Rosenthal, Geiger, & Erikson 2013).

Models highlight the interplay between affective and behavioural components: poorly regulated emotions lead to the use of food or alcohol or engagement in other behaviour as an escape or distraction, or as a down-regulating strategy. Internalising and externalizing problems, although related, may be associated with different patterns of ER strategies (e.g. Shreiber, Grant & Odlaug, 2012).

A large meta-analytical review (Aldao, Nolen-Hoeksema, & Schweizer, 2010) has confirmed these individual findings. The authors of the review evaluated the empirical support for the relationships between the symptoms of four psychopathologies (anxiety, depression, eating, and substance-related disorders) and six emotion-regulation strategies (acceptance, avoidance, problem solving, reappraisal, rumination, and suppression). They found a large effect size for rumination, medium to large for avoidance, problem solving, and suppression, and small to medium for reappraisal and acceptance. More generally, internalizing disorders (e.g. depression and anxiety) were more consistently associated with regulatory strategies than externalizing disorders (e.g. conduct disorders) (Aldao, et al., 2010). However, studies included both clinical and non-clinical groups, and this significantly moderated the relationships found, suggesting that ER strategies implicated in the development of disorders, or an at-risk state (in the non-clinical population) may be different from those perpetuating emotional and behavioural disorders in clinical populations.

A key theme emerging from the literature is that suppression of affect as opposed to reappraisal of negative event is associated with more symptomatology. Similarly, avoidance of harm, threat, or negative affect as an attempt to regulate emotion seems to be at the heart of a number of conditions including pathological gambling, eating disorders, suicide attempts, depression.

1.3 ER and child and adolescent disorders

1.3.1 Models of ER in children and adolescents

Adult models of ER appear to hold in younger populations, with some adjustments to account for developmental stage, socio-familial context, and the continuing maturation of cognitive and emotional systems. Southam-Gerow and Kendall (2002) reviewed the role of emotion regulation (i.e., extrinsic and intrinsic monitoring and adjusting of emotion as in Cicchetti et al., 1995) and emotion understanding (i.e. comprehension of the signs of, causes of, and ways to regulate emotion) in childhood adjustment in non-clinical and clinical samples, finding support for a role for both factors in the development of psychopathology (e.g., Casey, 1996; Cole, Zahn-Waxler, Cole, Richardson, Freeman et al., 1994; Eisenberg, Fabes, Guthrie, et al., 1996; Gottman &

Katz, 1989; Hennessy et al., 1994; Seja & Russ, 1999; Southam-Gerow & Kendall, 2000; Zahn-Waxler, Iannotti, et al., 1990). Southam-Gerow and Kendall (2002) suggest that, while accepted adult ER models are a good fit for childhood research, they would benefit from the addition of a developmental *emotion understanding* component. This view is consistent with findings from the adult literature on alexithymia that similarly suggest that emotion understanding is related to emotion regulation and plays a key role in the development of psychopathology (Barlow et al., 2004).

A recent review (Adrian, Zeiman & Veits, 2011) evaluated the research on emotion regulation in children by analyzing the methods of assessment used over 35 years from 1975 to 2010. The review shows that, similar to the adult literature, most (82.8%) of the published ER research dates from the last decade. However, the review noted a preponderance, and longer history of, observational and longitudinal studies of infants and toddler/preschool samples in the childhood ER literature. The self-reportable aspects of ER, that may be amenable to change through direct, individual, talking therapy interventions were a more recent focus of interest, with an expected bias towards studies of older children and adolescents.

As in many childhood adaptations of adult models of psychopathology, and as would be expected given the biosocial and hypothesized attachment-based origins of ER difficulties, family and interpersonal factors have been found to play a more significant role in childhood ER difficulties. Adrian, Zeman, Erdley, Lisa, Homan et l., (2009) found that family cohesion was associated with adaptive emotion regulation behaviours for girls reporting difficulties along the internalizing dimension, and for all adolescents reporting externalizing behaviours. 'Relational victimization' as an index of difficult relationships with others, predicted difficulties with emotion regulation in both symptom domains for all adolescents. Within the internalizing domain, friendship support was related to adaptive emotion regulation. In contrast to the symptom focused literature, and consistent with the different peer relationships characteristic of internalizing and externalizing disorders, the conclusion of the study was that, when social protective and exacerbating factors are considered, facets of ER do differentiate between global indices of internalizing and externalizing behaviours. In a later study by the same group, Adrian, Zeman, Erdley, Lisa and Sim (2011) found that ER mediated

the influence of interpersonal problems on non-suicidal self-harming behaviour, through family and peer domains. When family and peer relationships were characterized by conflict and lack of support for managing emotions, adolescents reported more dysregulated emotion processes, and more frequent and severe self-harm. Conversely, although very few studies have considered protective factors, Feng, Keenan, Hipwell, Henneberger, Rischall, Butch and Babinski (2009) reported on a study of a community sample of preadolescent girls and found that the prospective association between vulnerabilities in emotion regulation and depression was moderated by the caregiving environment.

1.3.2 ER and childhood psychopathology – community studies

As implied above, associations of ER with psychopathology in children and adolescents show broadly similar patterns to those found in adults, with ER implicated in the development and maintenance of a range of disorders, and playing a similar mediating role in the impact of adversity upon later psychopathology (e.g. Silk et al., 2003; Beauchaine et al., 2007; Stringaris and Goodman, 2009; La Greca, Lai, Llabre, Silverman, Vernberg, & Prinstein, 2013; Herts, McLaughlin, & Hatzenbuehler, 2012; Kim-Spoon, Haskett, Longo, & Nice; Choi and Oh, 2014). A key difference, however, is the apparent lack of differentiation of strategies between internalizing and externalizing problems. Studies examining both ER strategies (Garnefski et al., 2005; Silk, Steinberg, & Morris, 2003) and physiological markers of ER (Beauchaine, Gatzke-Kopp, & Mead, 2007) in adolescent populations, have found, in contrast to the adult research, that ER is equally associated with both internalizing and externalizing problems (Garnefski et al., 2005).

McLaughlin, Hatzenbuehler, Mennin and Nolen-Hoeksema (2011) examined three distinct emotion processes (emotional understanding, dysregulated expression of sadness and anger, and ruminative responses to distress) in a diverse sample of adolescents (N=1065) at two time points separated by seven months. The study found that the three processes formed a unitary latent emotion dysregulation factor, which predicted increases in anxiety symptoms, aggressive behaviour, and eating pathology after controlling for baseline symptoms, but did not predict depressive symptoms.

Similar results were reported by Zeman, Shipman and Suveg (2002), examining the relationship between children's self-reported anger and sadness regulation and the presence of internalizing and externalizing symptoms in a sample of 121 boys and 106 girls in the fourth and fifth grades. Results showed that the inability to identify emotional states, the inhibition of anger, the dysregulation of anger and sadness, and the constructive coping with anger predicted internalizing symptoms. The dysregulated expression of sadness and constructive coping with anger were inversely related to externalizing symptoms.

Implicated mechanisms and their cognitive underpinnings, show some similarities irrespective of age: Zalewski, Lengua, Wilson, Trancik, and Bazinet (2011) found that children (community preadolescents) who were more effective at regulating their emotions during the emotion-eliciting tasks had higher levels of positive appraisal and active coping when dealing with their own problems. Conversely, children who regulated their emotions less effectively had higher levels of threat appraisal and avoidant coping.

In terms of population studies and risk, mood lability (as a measurable marker and consequence of ER difficulties) has been found to be relatively common in childhood, and ER difficulties predict increased non-clinical difficulties and a wide range of childhood psychopathologies. A large community adolescent survey of 5326 participants with ages between 8-19 (Stringaris and Goodman, 2009) found that mood lability was present in more than 5% of the population of children and adolescents, both by parent and self-report, and was associated with significant psychosocial impairment, irrespective of reaching criteria for clinical diagnosis.

1.3.3 ER and childhood psychopathology – inpatient studies

While the general literature on internalising and externalizing child and adolescent disorders, such as anxiety and depression on the one hand and conduct disorders on the other, highlights several problematic areas of ER difficulties with helpful implications for treatment, the current study focuses on inpatient adolescents. Inpatients are presenting in an acute mental health crisis, and, although the inpatient stay provides an ideal opportunity for intervention, to facilitate a robust future recovery, inpatient

adolescents have distinct characteristics and differ from adolescents attending outpatient mental health services (Pottick, Hansell, Gutterman & White, 1995). Mechanisms of action of ER, and key strategies, may consequently be different in this group. Overall, most of the literature on ER in inpatient adolescents focuses on extreme behaviours such as suicidal behaviour including suicidal and non-suicidal self-harm.

Self-harm is one way in which inpatient adolescents regulate dysphoric affect as a response modulation strategy (Gross, 1998). Nixon, Cloutier and Aggarwal, (2002) found that repetitive self-harm as a way of regulating dysphoric affect in inpatients adolescents may have addictive features especially when associated with high levels of internalized anger. Zlotnick**,** Donaldson, Spirito and Pearlstein (1997), also examined the relationship between affect dysregulation and self-destructive behaviours in adolescent suicide attempters in a sample of 25 adolescent inpatients, finding that suicidal behaviour among adolescent psychiatric patients is related to poor affect regulation, and identifying the importance of *acceptance* of emotional responses as key in modulating difficult feelings such as anger and therefore a good potential target for therapy. However, while association of self-harming and suicidal behaviours with ER in general is consistent, links with specific strategies are less so. In contrast to Zlotnick's et al.'s findings (1997), a study by Perez, Venta, Garnaat and Sharp (2012) did not find *acceptance* to account for non-suicidal self-harm. Rather, their findings revealed that only the limited access to emotion regulation strategies subscale accounted for a significant portion of the variance in non-suicidal self-harm when controlling for other aspects of emotion dysregulation, sex, and psychopathology. Other types of emotion regulation such as non-acceptance of emotional responses or impulse control did not prove significant in accounting for non-suicidal self-harm in this population.

A small number of studies have considered the role of ER in general severity of problems and change during inpatient admissions in adolescence. Venta, Sharp and Hart (2012) explored the relationships between experiential *avoidance*, *alexithymia* and emotion regulation in a sample of 64 inpatient adolescents. Overall, 30% of the participants were classified as having alexithymia. The study found that alexithymia was related to difficulties in regulating emotions and that this relationship was mediated by inability or unwillingness to tolerate difficult emotions. This finding is consistent

with the adult literature (Barlow et al., 2004) and with other studies in children (Southam-Gerow and Kendall, 2002). A later naturalistic study by the same group found ER to mediate symptom change over the course of an admission, with strong associations to attachment style (Venta & Sharp, 2014).

Social and interpersonal factors were found to be significantly associated with ER in a study of adolescent inpatients with BPD traits (Sharp, Pane, Ha, Venta, Patel, Sturek & Fonagy, 2011). The findings suggest a relationship between borderline traits and "hypermentalizing" (excessive, inaccurate mentalizing) independent of age, gender, externalizing, internalizing and psychopathy symptoms. The relation between hypermentalizing and BPD traits was partially mediated by difficulties in emotion regulation, accounting for 43.5% of the hypermentalizing to BPD path. These results seem to provide initial empirical evidence to support the notion that mentalizing exerts its influence on borderline traits through the mediating role of emotion dysregulation. Having important implications for treatment, this study adds an extra component to the 'emotion understanding' aspect of ER in young people, suggesting that understanding others' mental states and behaviours may be as important as understanding one's own mental state and feelings.

In summary, research on ER in inpatient adolescents has focused mainly on extreme problematic behaviour such as self-harm. Nevertheless, findings are broadly consistent with those in community samples of young people, with ER playing a maintaining and mediating role, and incorporating developmental elements of understanding emotion in self and others, alongside the familial context. No firm conclusions can be drawn about similarities or differences in specific strategies. Contrasting findings lead to inconsistent conclusions regarding the role of acceptance or of 'letting go' of difficult feelings in psychopathology.

1.4 Emotion regulation, psychosis and psychotic-like experiences

1.4.1 Psychosis and PLEs: cognitive models

Over the last twenty years, psychological understandings of psychosis have become increasingly accepted. Psychosis is now viewed as associated with life events, and

particularly traumatic life events (Varese, Smeets, Drukker, Lieverse, Lataster, Viechtbauer,... & Bentall 2012; Bendall et al., 2012; Bebbington et al., 2004, 2011); with affect (Freeman and Garety, 2003; Krabbendam and van Os, 2005); and with cognitive and behavioural coping strategies (e.g. Nothard and Morrison, 2007; Freeman, Garety, Kuipers, Fowler, Bebbington, & Dunn 2007).

Cognitive models of the positive symptoms of psychosis integrate the cognitive, social and emotional processes thought to contribute to their occurrence and persistence, and propose that vulnerable individuals make characteristic appraisals that result in specific positive symptoms (Garety, Bebbington, Fowler, Freeman and Kuipers, 2007). According to Garety, Bebbington, Fowler, Freeman, and Kuipers (2007), the underlying hypotheses of these cognitive models are that: psychosis is on a continuum; specific cognitive processes are risk factors for the transition from subclinical experiences to clinical disorder; social adversity and trauma are associated with negative emotional processes and psychosis; and these emotional processes contribute to the occurrence and persistence of psychotic symptoms.

The continuum model of psychosis (Claridge, 1985; Nelson, Fusar-Poly & Yung, 2012) suggests that psychotic symptoms are distributed throughout the population, with diagnosable clinical disorder existing at a certain point along this continuum. The total continuum is made up mainly of non-clinical cases with clinical cases of psychosis representing only a small proportion of the total extended psychosis phenotype (van Os et al., 2009. The continuum tenet holds that it is not only psychotic experiences, but also the mechanisms underpinning their development and persistence, that are continuous with normal psychological processes. Within a psychological, continuum-based model, the onset of psychosis is seen as the result of a mutifactorial conjunction of vulnerability factors and triggers, none in themselves pathognomonic, but acting together to increase the likelihood of a psychotic episode (Garety et al., 2007).

Evidence in support of the continuum model is provided by a large review (van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009) reporting a median prevalence rate of subclinical psychotic experiences of around 5% and a median

incidence rate of around 3%. The meta-analysis of risk factors associated with psychotic-like experiences (Van Os et al., 2009) revealed associations with developmental stage, child and adult social adversity, psychoactive drug use, and also male sex and migrant status. A substantial body of research has confirmed the prevalence of psychotic-like symptoms such as delusions and hallucinations in the general population as ranging from 0.5% to 40% (depending on the measure used), alongside the presence of cognitive and emotional biases characteristic of psychosis (e.g. Freeman and Garety, 2013), albeit at lower rates than those reported in people with clinical psychosis.

A key implication of the continuum approach for both research aiming to better understand the development of psychosis, and for the refinement of clinical interventions, is that, as psychotic experiences in the general population share psychological vulnerability and maintenance factors with clinical psychosis, the study of psychotic-like experiences in the general population has the potential to provide useful information to aid the understanding and treatment of clinical psychosis. Factors associated with the development, impact and persistence of psychotic-like experiences will increase vulnerability to psychosis. This has meant that psychosis can be studied in general population samples in much the same way as non-clinical studies of anxiety and mood change have informed the development of models of and interventions for common mental illnesses.

In line with the continuum model, Kelleher and Cannon (2014) point out that psychosis research has changed significantly in the past 15 years as psychotic symptoms are far more common than had previously been considered, not only in the general population, but also on a range of other clinical disorders. Hallucinations and delusions, the classic symptoms of psychosis have now been demonstrated to be relatively common features of a range of (nonpsychotic) conditions mental disorders such as borderline personality disorder, affective disorders, and anxiety (van Os and Murray, 2013). Again, the transdiagnostic study of psychotic-like experiences in other clinical presentations may cast light on important mechanisms that will further the understanding of psychosis.

1.4.2 ER and psychosis in adults with a focus on schizophrenia

Alongside its role in the persistence of affective disorder and substance misuse, ER has recently been implicated in the development of psychotic disorders in adults. Two pathways to ER difficulties are evident in the literature: a neurocognitive impairment strand, in which ER problems are associated with negative symptoms and impairments in social cognition and functioning; and a 'normal emotional processes' strand, in which ER is associated with adverse life events and affective disorders. Although separated for the purpose of review, there is overlap between these strands: adverse life events and emotional disturbance may contribute to negative symptoms and poor functioning; and cognitive deficits may increase the likelihood of adverse experiences and emotional problems (e.g. Periovoliotis et al., 2009; Grant et al., 2011).

1.4.2.1 ER and impairment of social cognition

ER has frequently been considered in psychosis within a deficit framework, linking with neurocognitive impairment and a range of deficits in social cognition (Mancuso, Horan, Kern & Green, 2011; Kimhy, Vakhrusheva, Jobson-Ahmed, Tarrier, Malaspina and Gross, 2012; Lysacker et al., 2011; Hamm et al., 2012). For example, Kimhy et al., (2012) examined emotion awareness and regulation and their relationship to social functioning in schizophrenia patients and healthy controls. Patients with schizophrenia displayed significantly less awareness (i.e. identifying and describing emotions), increased alexithymia and significantly more suppression and less reappraisal of negative events. In patients with schizophrenia the ability to identify and particularly to describe emotions, better emotion management, more reappraisal and less suppression were associated with better social functioning.

Negative symptoms are a further complicating factor: Henry, Green, de Lucia, Restuccia, McDonald and O'Donnell, (2007) found that schizophrenia was associated with problems with amplification (but not suppression) of emotion expressive behaviour and that these difficulties significantly correlated with total negative symptoms experienced and in particular with emotional blunting.

Although important, poor ER arising as a result of cognitive deficit and overarching functional impairment is of less direct relevance for the particular questions addressed

in this thesis where the focus is more on the role of ER via a 'normal emotional process' route.

1.4.2.2 ER, affective disturbance and psychosis

A different strand of research, building on the longstanding associations of psychosis with affective disturbance (e.g. Freeman and Garety, 2003), and with trauma and adverse life events, combined with more recent interest in the role of attachment in psychosis, has started to consider ER as a cognitive-emotional process in psychosis operating separately from deficits in social cognition (e.g. Sitko, Bentall, Shevlin & Sellwood., 2014). Given the biosocial, cognitive and attentional influences on ER, there is a strong rationale for expecting disruption in individuals with psychosis, and Harder and Folke (2012) provide an interesting developmental theoretical exploration.

A number of recent studies have implicated ER in the onset of psychotic symptoms. Marwaha and colleagues (2013) used British National Survey data collected in 2000 and in 2007 to test specific hypotheses that firstly, mood instability is associated with psychosis and individual psychotic phenomena, and that, secondly, it predicts the later emergence of auditory hallucinations and paranoid ideation. The authors also tested whether mood instability mediated the link between adverse life events (childhood sexual abuse) and psychosis. Mood instability was strongly associated in cross-sectional analyses with psychosis and paranoia, remaining so after adjustment for current mood state. Baseline mood instability significantly predicted 18-month inceptions of paranoid ideation and of auditory hallucinations. Also, mood instability mediated a third of the total association of child sexual abuse with psychosis and persecutory ideation and a quarter of that with auditory hallucinations. The authors concluded that mood instability is a prominent feature of psychotic experience and may have a role in its genesis, identifying ER as a potential intervention target.

Further indirect support for the role of ER in psychotic experiences was found by a similar National Survey study, showing a mediating role of attachment in psychotic symptoms (Sitko et al., 2014). The authors assessed whether current attachment styles influenced the association between adverse childhood experiences and psychotic symptoms in adulthood and found that sexual abuse was associated with hallucinations,

while neglect was associated with paranoid beliefs. Moreover, sexual abuse and neglect were also associated with depression. Anxious and avoidant attachment fully mediated the neglect-paranoid beliefs relationships while the relationship between sexual molestation and hallucinations was independent of attachment style. The relationship between rape and hallucinations was partially mediated via anxious attachment; however this effect was no longer present when depression was included as a mediating variable.

Findings are consistent with clinical studies, in both established psychosis and at-risk groups. Ponizovsky, Vitenberg, Inbar Baumgarten-Katz and Grinshpoon (2011) used the model of activation and dynamics of the attachment system (Shaver & Mikulincer, 2002) and dynamic stress-vulnerability models of psychosis (Ingmar & Luxton, 2005) as analytical frameworks to test the hypothesis that insecure attachment styles are differentially associated with the severity of psychopathological symptoms and emotional distress among outpatients with a diagnosis of schizophrenia, according to the International Classification of Diseases, Tenth Edition (ICD 10, World Health Organisation, 1992). The study found that the preoccupied and fearful-avoidant attachment patterns were associated with higher scores of psychotic (delusions, suspiciousness/persecution, and hallucinatory behaviour) and affective (anxiety, tension, guilt feeling, and depression) symptoms, whereas the dismissing-avoidant style was associated with only anxiety. All the insecure attachment styles were associated with elevated emotional distress.

Similarly, Gajvani, Patterson and Birchwood (2003) examine attachment and the developmental pathways to affective dysregulation in a sample of young people at ultra-high risk (UHR) of developing psychosis. The study is based on the premise that embedded in attachment theory is its association with affect regulation, which provides a framework for affective dysregulation in the emerging psychosis. Findings suggest that a large proportion of the studied sample reported clinically significant levels of depression, state anxiety, and social anxiety. Eighty per cent of the UHR sample was insecurely attached. Insecure attachment was significantly associated with elevated depression and social anxiety. Attachment styles were associated with anxiety, depression, and social anxiety. There was no support for a mediating role of social

anxiety between attachment styles and depression.

Associations of psychotic symptoms with ER in population samples have also been found in younger populations. Modinos, Ormel and Aleman (2010) used fMRI to examine the neural dynamics underlying reappraisal as an emotion regulation strategy in a sample of 600 undergraduate students and found that reduced cognitive control of emotion at a neural level was associated with psychosis proneness.

In relation to persistence and maintenance, Freeman and colleagues (2011) identify emotional processing difficulties, catastrophising and rumination as key change processes in persecutory delusions. Badcock et al., (2011) compared patients with schizophrenia with auditory hallucinations with healthy controls and found similarly that the psychotic group were characterised by high levels of rumination and worry, but similar levels of reappraisal and suppression. Greater suppression of and rumination about auditory hallucinations was associated with greater severity and disruption, and greater distress, respectively, in daily life. As with ER in non-psychotic disorders, and the development of psychosis, neurophysiological mechanisms of ER in schizophrenia have been identified Strauss, Kappenman, Culbreth, Catalano, Lee and Gold (2013).

ER is of particular relevance where psychosis is characterized by schizoaffective features, or a bipolar presentation. Rowland, Hamilton, Lino, Ly, Denny, Hwang and Green (2013) examined cognitive regulation of negative affect in schizophrenia and bipolar disorder compared with healthy controls. They found that patients reported more frequent rumination, catastrophising and self-blame, and less use of putting into perspective, relative to healthy controls. Schizophrenia patients were more likely to engage in other-blame, compared to healthy controls. The most consistent predictors of symptomatology for schizophrenia were self-blame and catastrophising, while for bipolar disorder they were rumination and reduced positive reappraisal. The authors note the similarity of bipolar strategies to those of individuals with unipolar depression, finding than regulation of excessively positive affect was not a key feature, although other studies suggest that strategies to promote excessive wellbeing are relevant to this group (e.g. Jones et al., 2010).

Positive affect may also be important in understanding substance misuse in psychosis,

as a number of studies suggest that positive impact of the substance is a primary driver of behaviour (e.g. Gregg et al., 2010). However, Blanchard, Squires, Henry, Horan, Bogenschutz, Lauriello and Bustillo (1999) examined an affect regulation model of substance abuse in schizophrenia: taking into account the role of personality traits and coping in 39 patients with schizophrenia or schizoaffective disorder. They found that negative affect and disinhibition but not positive affect, were associated with maladaptive coping including the use of drugs and alcohol to cope with stress. Positive affect, but not disinhibition or negative affect, was related to adaptive coping strategies, and not to substance misuse. Individuals high in negative affect and endorsing the use of drugs and alcohol to cope reported the greatest number of negative consequences from substance use, irrespective of gender. Results are consistent with an affect regulation model of substance use in psychosis.

1.4.3 ER and psychotic-like experiences in adults

Alongside the population studies reviewed in the previous section, where ER was found to predict both current and future psychotic experiences, irrespective of clinical status, a small number of studies have considered ER in relation to psychometrically identified, non-clinical psychotic-like experiences. Two main ER strategies have been the focus of research in relation to psychotic-like experiences in adults: suppression and reappraisal.

In a series of three studies (Westerman & Lincoln, 2011 Westerman, Kesting and Lincoln, 2012a; Westerman, Rief and Lincoln, 2012b) the authors explored emotional regulation difficulties relevant to persecutory ideation and found that thought suppression considered as a form of attentional deployment correlated with paranoid ideation in anxious states. Negative affect and especially anxiety and emotion regulation difficulties mediated the relationship between stressful events and persecutory delusions. This association was found with both clinical and sub-clinical experiences.

Westerman et al., (2012a) studied a community sample and reported no significant findings regarding the use of suppression in relation to paranoia proneness. Westerman and colleagues (2012b) investigated the role of anxiety in using appraisal and expressive suppression in a non-clinical sample with delusion-proneness. The authors found that overall, reappraisal was a more effective strategy than suppression to down-

regulate anxiety. The authors concluded that delusion-proneness is accompanied by difficulties in reappraising threat that might contribute to the formation and maintenance of clinically relevant delusions.

Westerman (2011) proposed an emotion regulation model of delusional ideation that incorporated several factors: stress levels as vulnerability factors, aberrant salience, negative interpersonal schemata, cognitive biases such as jumping to conclusions, theory of mind and pre-existing paranoia threat beliefs. The model also incorporated emotion regulation strategies, attention, appraisal and response to situations as other factors impacting on emotion regulation.

Previous studies (Livingstone et al 2009) had found links between alexithymia and schizophrenia that were not supported by Westerman's study (2011), which did not find a relationship between emotional clarity, lack of awareness, and paranoid ideation and positive symptoms. A positive association was found between impulse control difficulties and paranoid ideation while a significant negative relationship was established between acceptance of negative emotions and paranoid ideation. Westerman concludes, consistent with much of the literature based on clinical samples, that emotion regulation is not specific to paranoid ideation after controlling for general psychopathology and that emotion regulation deficits are prevalent in numerous mental disorders, as a transdiagnostic phenomenon.

Livingstone (2009) came to similar conclusions. A study of positive and negative affect in psychosis patients, anxiety-depression patients and non-clinical controls, showed more negative affect in both clinical groups and less positive affect/ lower levels of happiness. Despite differences found in affect in the three groups, in terms of ER, both clinical groups used similar emotion regulation strategies, and more dysfunctional and less functional strategies than controls. The author concluded that emotion regulation in psychosis is similar to non-psychotic emotion regulation.

Suppression of emotion was also highlighted as relating to schizotypy by Henry et al. (2009). In a replication of their earlier study (Henry et al., 2007), they examined emotion regulation and schizotypy in non-clinical participants. In their study, 15% of

the highest and 15% of the lowest scorers on a schizotypal personality scale were compared on amplification and suppression ER strategies. The schizotypal sample reported difficulties with amplification but not suppression of emotion expressive behaviour consistent with Henry et al.'s previous clinical findings. These difficulties were found to be associated with blunt affect and schizotypy significantly correlated with suppression. Schizotypy *per se* may be associated with increased habitual use of suppression.

However, in contrast to these reports, a study by Perry, Henry and Grisham (2011) found no differences in terms of use of suppression or re-appraisal as emotion regulation strategies in clinical versus non-clinical populations. Perry's study included people with a diagnosis of schizophrenia and schizoaffective disorder diagnostic (clinical sample), while the non-clinical controls were recruited via advertisements in newspapers and screened for current psychiatric difficulties. One of the significant differences between the two groups, however, was that clinical participants reported using less acceptance and that greater use of acceptance, as suggested by some studies in the adolescent inpatient literature, was associated with better psychological outcomes.

1.4.4 ER, psychosis and psychotic-like experiences (PLEs) in children and adolescents

Particular interest has developed over the last decade in researching psychotic symptoms, or psychotic-like experiences (PLEs) in children, predominantly in the general population (e.g. Laurens, Hodgins, Maughan, Murray, Rutter, & Taylor, 2007, Laurens, Hobbs, Sunderland, Green, Mould, Arango,... & Deboutte, 2012), but also in mixed clinical samples (e.g. Kelleher, Keeley, Corcoran, Lynch, Fitzpatrick, Devlin,... & Cannon., 2012). The experiences are indicators of poor prognosis when co-occurring in other disorders (Kelleher et al., 2012; Wigman et al., 2014). They are also considered, and have been statistically demonstrated to be, risk factors for the later development of a range of mental health conditions, including an at-risk mental state, and clinical psychosis (e.g. Fisher, Caspi, Poulton, Meier, Houts, Harrington,... & Moffitt, 2013; Kelleher and Cannon, 2011).

However, over 50% of children in the general population report psychotic-like experiences, and only a third of these, in community samples, find the experience upsetting or debilitating. Distress/impact increases with clinical severity: in a community CAMHS setting, half of children report PLEs and emotional upset. Young people tend not to report their PLEs, even to their families, unless they are directly asked. Rather, they tend to try to manage the distress and interference with their lives alone (Ames et al., in press; Laurens, Hodgins, Taylor, & Murray, 2011). Although PLEs have been associated with increased psychosis risk, it has also been argued that an experience so common cannot realistically be considered a risk factor, and therefore multiple vulnerability factors in combination are hypothesized to lead to psychosis onset (Kelleher et al., 2012; Murray & Jones, 2012).

Drawing on the cognitive model of psychosis, these vulnerability factors are likely to include emotional difficulties and ER. It has been demonstrated that PLE-associated distress and poor coping predict persistence and the later development of at risk mental states in general population community samples (Wigman, Lin, Vollebergh, Van Os, Nelson, Baksheev,... & Yung, 2011; Lin, Wigman, Nelson, Vollebergh, Van Os and Baksheev, 2011). Lin et al., (2011) examined two types of coping in related to persistence of psychotic experiences: emotion versus task-oriented coping. The authors found that over time, emotion-oriented coping in general was bi-directionally related to psychotic experiences in a community sample. Persistence of psychotic experiences was associated with a greater use of emotion-oriented coping, whereas a decrease in experiences over time was associated with an increased use of task-orientated coping. In addition to coping deficits, difficulties in emotion regulation seem to play a key role in the persistence of psychotic experiences. Van Rossum, Lieb, Wittchen and van Os (2011) and Smeets, Lataster, Hommes, Lieb, Wittchen and van Os (2012) reported on a 10-year prospective study exploring the association between affective dysregulation and reality distortion as well as their clinical relevance in a large community cohort of German adolescents and young adults aged 14-24 years. The findings suggest that psychotic experiences of clinical relevance were progressively more likely to occur with greater level of affective dysregulation. The authors concluded that affective dysregulation may contribute causally to the persistence and clinical relevance of reality distortion, possibly by facilitating a mechanism of aberrant salience attribution.

Moreover, a case-clinical control study showed that psychotic symptoms in the context of psychiatric disorders are associated with poor functional outcomes (Wigman, Devlin, Kelleher, Murtagh, Harley, Kehoe, 2014). In this study, stratifying for poor/good coping, only those adolescent patients with psychotic symptoms who applied poor coping (i.e. less use of approach-oriented coping styles and more use of avoidance-oriented coping had poorer functioning) showed a problematic trajectory.

Similar findings have been reported for adolescent at-risk groups. van Rijn et al. (2010) assessed emotion processing and the relationship with social competence in a sample of help-seeking adolescents (aged 12-18) at risk for psychosis and a small sample of non-clinical controls. Adolescents with risk for psychosis were found to show difficulties in identifying and verbalizing their own emotions, independent of intelligence scores. Emotion awareness problems were related to social inadequacy and schizotypal traits in the high-risk group. These findings suggest that adolescents at risk for psychosis may have reduced emotion awareness, independent of intellectual functioning. The relationship with social inadequate behaviour fits with the idea that emotion awareness is a prerequisite for the regulation of emotions in social contexts. Supporting the transdiagnostic nature of ER difficulties, Dickstein and Leibenluft (2006) found that children with possible phenotypes of bipolar disorder have deficits on behavioural tasks related to several processes involved in emotion regulation, including reward processing and reversal learning, face emotion recognition, and attention in emotional contexts.

Only one study was identified that considered ER in the context of childhood psychosis. Seiferth, Pauly, Kellermann, Shah, Ott et al., (2009) identified ER difficulties associated with neurophysiological changes in a sample of 12 adolescents with clinical psychosis. Similar to findings in adults, decreased activation in relation to visual and face processing was accompanied by hyperactivation in areas related to emotion regulation and attribution, possibly reflecting compensatory mechanisms.

Results suggest that there may be opportunities for ER interventions with children experiencing distressing and impactful psychotic-like symptoms. Moreover, the

findings imply that behavioural, task-oriented strategies may prove more useful than emotion-focused strategies (i.e. awareness and understanding of emotions) in decreasing the persistence of psychotic experiences. Findings are consistent with adult psychosis research in suggesting that in the search for early vulnerability markers of risk for psychosis, studying emotion processing might increase understanding of 'at risk' developmental pathways. Helping young people to manage their PLEs adaptively, therefore, has the potential to prevent future difficulties and improve resilience.

1.5 Emotion regulation focused treatment for adolescents

1.5.1 Recommendations for treatment informed by ER research

There are several recommendations for treatment informed by research on ER and mental health disorders.

Barlow and colleagues (2004) developed a unified protocol for transdiagnostic emotion-focused treatment, comprising four components: promoting emotional awareness; increasing flexibility in appraisals; preventing behavioural and emotional avoidance; facilitating situational and interoceptive exposure to emotion-cues (consistent with the review of Aldao et al., 2010). Southam-Gerow and Kendall (2002) recommend that each of these components can be enhanced in work with young people by an increased focus on understanding emotion and regulation. This can be achieved by broadening the cognitive-behavioural model such that emotion and regulation concepts are more explicitly included in models of psychopathology and therapy. Carl et al. (2013) recommend a focus on regulation of positive as well as negative affect. Finally, and importantly, Stringaris and Goodman (2009) point out that mood lability can be a target of intervention, with a focus on improving wellbeing and functioning, irrespective of an associated psychiatric diagnosis.

1.5.2 Treatment focused on emotion regulation

A small number of treatment studies have specifically focused on ER interventions in adolescent populations. Overall, there is evidence for their feasibility and acceptability, with some indications of positive change in pilot studies, which have failed to be replicated in the one large-scale randomized controlled trial (RCT). This

study evaluated a 17-session weekly group ER training for adolescents with borderline personality disorder traits (Schuppert, Timmerman, Bloo, van Gemert, Wiersma, 2012), but found no additional effect of ERT over TAU, despite their earlier randomized controlled pilot study (Schuppert, Giesen-Bloo, van Gemert, Wiersema, Minderaa et al., 2009) showing that the group receiving ERT plus TAU (and not the TAU-only group) had a significant increase in internal locus of control, more sense of control over their own mood swings, and attributed changes in mood swings not only to external factors. Kovacs, Sherrill, George, Pollock, Tumuluru et al. (2006) report similar positive effects for a pilot study of contextual emotion-regulation therapy (CERT) focusing on self-regulation of dysphoria. At the end of treatment, 53% of the completers had full and 13% partial remission of dysthymia. By 6- and 12-month follow-up, 79% and 92% had full remission of dysthymia.

In summary, the development of age-appropriate interventions is at an early stage, but the emerging studies confirm the associations between ER and psychopathology and support a causal role for ER in the maintenance of difficulties. Moreover, ER-based treatments appear to be acceptable and feasible for adolescents, and therefore their further development is worthy of investigation.

1.6 Setting the scene: Meeting the needs of children and adolescents in mental health services

1.6.1 The mental health needs of young people

One in ten children and young people have a diagnosable mental disorder (Trends, 2004), with 50% of all diagnosable mental health problems, with the exception of dementia, starting before the age of 14 according to a briefing on children and young people's inpatient services published by the Royal College of Psychiatrists (RCPsych, http://www.rcpsych.ac.uk/mediacentre/pressreleasearchives/2013/camhsdebatebriefing.aspx) in October 2013.

The briefing suggests that by the time an average class of 30 young people reach their 16th birthdays: 10 of them will have witnessed their parents separate; three will have suffered from mental health problems; eight will have experienced severe physical

violence, sexual abuse or neglect; three will be living in a step-family; one will have experienced the death of a parent; and seven will report having been bullied.

1.6.2 The provision of care in children and adolescent mental health services (CAMHS)

Expectations of CAMHS in terms of effective, evidence-based interventions, and the prevention of future mental ill-health continue to rise, despite the backdrop of cost savings (NHS England, 2014). For instance, the National Institute of Health and Care Excellence (NICE, 2013) guidance on the management of psychosis and schizophrenia in children and young people recommends: i) urgent referral to CAMHS for children and young people presenting with symptoms of early onset psychosis, all to be seen within 4 weeks; ii) a range of psychological and drug treatments for children and young people with psychotic disorders; iii) consideration of all alternatives to hospital admission, and, if admission is indicated provision of support specifically around admission to the patient, their parents, and their siblings; and iv) ensured access to ongoing education and training both during and after their acute episode.

1.6.3 Adolescent inpatient services

Inpatient services are the most highly specialized child and adolescent mental health provision and cater for the most severe disorders in this age group. They also require high staffing levels from a limited trained workforce. In view of a number of mapping and audit initiatives in the UK in recent years and changing influences on admission policies worldwide, social commentators have noted that it would be timely to review the function and effectiveness of inpatient services (Gowers and Rowlands, 2005).

To date, however, little systematic data collection has been done to evaluate the nature and function of CAMHS inpatient units, and little research has been conducted into their clinical outcomes. Patient descriptive studies and uncontrolled outcome studies predominate in the literature (Gowers and Rowlands, 2005). Although many children and adolescents benefit from admission to mental health inpatient facilities, the specific advantages of admission over intensive community management are uncertain (Gowers and Rowlands, 2005).

There is strong evidence that inpatient services are effective from the meta-analysis of Pfeiffer and Strzelecki (1990), a review by Blantz and Schmidt (2000) and the recent large scale study of inpatient services for children and young people (Green, Jacobs, Beecham, Dunn, Kroll, et al., 2007). There is little known, on the other hand, on what makes services effective and what to do to improve services to meet the increasing needs for effective interventions for young people with mental health difficulties.

1.6.4 Challenges in meeting young people's needs

Although the increase of mental health problems in the younger population in the last 25 years is significant, there several challenges that the National Health Services are facing in meeting the needs of these young people (RC Psych, 2013). Firstly, there is a need for a new national survey of child and adolescent mental health, as the last comprehensive child and adolescent national psychiatric morbidity survey that was carried out in 2004 is over 10 years old. Secondly, children's charities have signalled increases in both bullying and self-harm, both associated with increased mental ill health. Thirdly, child poverty is increasing, with consequent impact on both mental and physical health. Children and young people (CYP) with poor mental health have poorer physical health, are more likely to smoke and make riskier health choices. One in three children and young people in the UK live in poverty and poor mental health is over represented in low-income families. Finally, over half of CAMH services have experienced cuts in funding ranging from 8-30% (Young Minds Freedom of Information Enquiry, www.youngminds.org.uk, 2012). Cuts to Tier 3 (outpatient and community CAMH services) inevitably increase the pressure on Tier 4 services and make it more difficult to avoid admission. Moreover, there is substantial geographical variation in provision in Tier 4 and specialist services. Although the roll out of the Children and Young People Improved Access to Psychological Therapies (CYP IAPT) is a welcome development, it targets common, rather than severe mental health presentations, and has not resulted in increased posts.

As a result of cuts to CAMHS provision, a recent Community Care and BBC investigation showed that data from 51 out of the 58 NHS mental health trust in England indicate that an increasing number of under-18s with mental health problems

in England are being treated on adult psychiatric wards, with an independent survey showing a fourfold increase in under-16s treated in adult services for 2013-4, compared to the previous year (Buchanan, 2014).

1.6.5 Rationale for the current study

Emotion regulation is associated with a range of psychopathologies in adulthood and childhood, including internalizing and externalizing disorders, disorders of affect, anxiety, psychosis, and a range of self-regulatory difficulties, specifically substance misuse, eating disorders and self-harm. Associations are reported with both clinical disorder, where ER contributes to the maintenance and severity of disorder, and with vulnerability to the later development of disorder in non-clinical groups.

ER is hypothesized to mediate relationships between emotional sensitivity likely to be engendered through genetic predisposition, and/or a range of early adversities or traumatic experiences (particularly disruptions to attachment), and the subsequent development of psychopathology. Intervening to improve emotion regulation should, therefore, have a wide range of positive effects on mental health, and, on adolescent psychiatric units, this is a key component of routine psychological interventions.

Historically, research on psychosis has had a strong emphasis on positive symptoms leading to interventions for people with a diagnosis of psychosis and/or experiencing psychotic-like experiences most commonly aiming at reducing the frequency of such positive symptoms and the associate distress. More recently, there is an increase interest in the affective changes in symptoms of psychosis (depression, anxiety) and questions are raised as to whether people with psychosis and/or psychotic-like symptoms experience emotions differently from people with a diagnosis of anxiety or depression and from non-clinical populations. Moreover, it is unclear as to whether attempts to regulate emotions are different between these clinical and non-clinical groups. In order to develop effective interventions for psychosis and psychotic-like experiences, it is therefore important to understand whether PLEs imply different and specific ER strategies independent of emotional distress or disturbance and trauma history.

In adults, findings (Marwaha et al., 2013) suggest that ER has a specific association with psychosis: associations with subclinical psychotic-like experiences (e.g. paranoia) have been demonstrated to be independent of the known associations of both psychosis and psychotic-like experiences with trauma history and affective disturbance. This suggests that targeting ER may be particularly helpful in interventions designed to impact on the development and maintenance of psychosis. In particular, if ER shows similar associations with PLEs in childhood as with PLEs and psychosis in adulthood, and if these associations are found to be independent of the known associations of childhood PLEs with affective disorders and adverse life events, ER interventions may hold promise as a tool to improve early intervention and future resilience.

However, despite the potential links with development and maintenance of severe mental health problems, no study to date has investigated the inter-relationships of emotion regulation, affective disturbance, trauma and psychotic-like experiences in an adolescent inpatient setting, and their influence upon subsequent recovery.

Clarifying these links has the potential to improve psychological intervention strategies for reducing the future risk of development and recurrence of a range of psychiatric problems, including clinical psychosis, and for promoting current wellbeing and recovery.

The current study **aims** to characterize the emotion regulation strategies of a group of adolescent inpatients, and investigate the influence of ER on the severity of affective disturbance and psychotic-like experiences, particularly its potential role in mediating the impact of traumatic life events on affective disturbance and its independent associations with psychotic-like experiences. A longitudinal investigation of the predictors of functional recovery over time, from admission to discharge, will also be undertaken, firstly considering the associations of recovery with baseline ER, affective disturbance, psychotic-like experiences and traumatic life events; and then, in a series of secondary analysis, exploring the associations of change in ER with functional recovery and change in affective disturbance, psychotic-like experiences and trauma symptoms.

1.7 Study aims

The existing literature suggests that emotion regulation plays an important role in psychopathology in general, particularly in relation to difficulties with affect and impulse control arising in the context of a trauma history, and in psychosis in particular. Importantly, although both trauma and affective disturbance are associated with psychosis and psychotic-like experiences (e.g. paranoia) in adults, the literature indicates that ER has an independent association, suggesting it may form an additional and separate target for therapeutic intervention. Both affective disturbance and adverse or traumatic life events are associated with PLE severity in young people, and ER is hypothesized to mediate the impact of adversity and trauma history (constituting disruptions to attachment) on subsequent psychopathology. However little is known about the particular strategies characterizing ER in adolescents, whether ER has a similar independent relationship with adolescent PLEs as with adult psychosis, and whether or not ER predicts clinical outcomes.

The current study was designed to investigate ER in an adolescent inpatient sample to:

A. Characterize ER strategies and examine the role of ER in psychopathology;

B. Explore the role of ER in functional and clinical recovery over the course of an inpatient admission.

1.8 Hypotheses

The study is designed to test the following specific hypotheses.

Hypothesis 1: Increased ER difficulties at baseline (DERS Total Admission) will be associated with increased affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission). Baseline ER (DERS Total Admission) will mediate the relationship between affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission).

Hypothesis 2: Increased PLEs severity at baseline (PLE Total Admission) will be associated with more ER difficulties (DERS Total Admission), increased affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission) and the association of baseline ER (DERS Total Admission) with PLEs (PLE Total) will remain significant when affective disturbance (SDQ-E Admission), and trauma history (Trauma History Total Admission) are controlled.

Hypothesis 3: Recovery (CGAS Discharge and CGAS Recovery) will be negatively associated with baseline ER difficulty (DERS Total Admission), affective disturbance (SDQ-E Admission), trauma history (Trauma History Admission) and PLEs severity (PLEs Total Admission) and the association of baseline ER (DERS Total Admission) with Recovery (CGAS discharge and CGAS recovery) will persist when baseline affective disturbance (SDQ-E Admission), trauma history (Trauma Total Admission), and PLEs (PLEs Total Admission) are controlled.

The following Chapter will go on to describe the methodology employed to test these hypotheses (Chapter 2), the main findings (Chapter 3), and to consider their clinical implications and directions for future research (Chapter 4).

CHPATER 2 Method

2.1 Participants

Participants were recruited from two specialist adolescent inpatient units in a large National Health Service mental health foundation Trust. The majority of admissions to these units were from the local area or across the South East of England; a small number are from elsewhere in the UK. The clinical team reviewed all admissions, and approached all young people at admission who were well enough to participate, to ask if a member of the research team could discuss the study with them. For all young people assessed at admission, routine follow-up data was collected from the ward, and a follow-up assessment was attempted at discharge.

2.1.1 Inclusion and exclusion criteria

Inclusion criteria: All admissions to adolescent inpatient units across the trust were eligible for the study. Inclusion criteria therefore matched those of the inpatient service, which were young people aged between 12 and 18, in need of acute mental health care.
Exclusion criteria: Adolescents thought by the clinical and/or research team to be unable to give consent due to severity of symptoms or other unrelated difficulties such as severe learning difficulties were excluded from the study. Adolescents under 16 with extremely difficult family circumstances, where it was thought that contact with the family to obtain parental consent would exacerbate the young person's social difficulties were also excluded. Young people who were not able to converse in English were able to take part providing the ward could access an interpreter. Excluded participants were kept under review with the clinical team in case the situation changed and participation became possible.

2.2 Measures

All assessment measures are included in Appendix 2.2.

2.2.1 Demographics

Demographic information including age, gender, diagnosis, ethnicity, age at first contact with services and number of previous inpatient admissions was collected from case notes with consent from carers and participants. The Burt word reading test was administered as an indication of reading age and a proxy measure of intellectual functioning (Burt, 1974). Descriptive statistics including means and standard deviations, as well as frequencies and percentages for these measures will be presented in Chapter 3.

2.2.2 General functioning

2.2.2.1 Child Global Assessment of Functioning Scale (Shaffer, Gould, Brasic, Ambrosini, Fisher, 1983). The *Global Assessment Scale* (*GAS*) was developed by Endicott et al. (1976) as a tool for assessing overall severity of psychiatric disturbance in adults. Subsequently, the *Children's Global Assessment Scale (CGAS)* was adapted from the Global Assessment Scale for use in children with psychiatric disorders by Shaffer et al. (1983). Mufson, Dorta, Wickramaratne, Nomura, Olfson et al. (2004) subsequently showed that CGAS is sensitive to treatment effects in adolescents with major depressive disorder. CGAS is a numeric scale (1 to 100) used by mental health clinicians to rate the general functioning of children with ages between 4 and 16 years old over a period of 1 month (Shorre & Vandvik, 2004) This assessment is based on the hypothetical continuum of health-illness 1–100, where superior functioning = 100. The assessment is based on the most impaired level of functioning over the rating period. Ratings on the CGAS scale are independent of any mental health diagnosis. A summary of the decile descriptions for CGAS is presented in Table 2.2.2.1.

In a study examining inpatient treatment in child psychiatry in a sample of 145 patients (Green et al., 2007), the mean CGAS score reported at pre-admission was 40.3 (SE=1.1), at admission 44.0 (SE=1.1, n=145) and at discharge 56.0 (SE=1.0, n=145). Bird et al. (1990) proposed that a CGAS score below 61 and the presence of a diagnosis be used as the criteria to identify "cases" (i.e., children who are likely in need of services). The CGAS was intended to be used by highly trained clinicians such as psychiatrists, psychologists, nurses and social workers, and used in this way, has been found to be reliable between raters and across time (Bird et al.,1990). Moreover, it has

demonstrated both discriminant and concurrent validity (Shaffer et al., 1983). Overall, the CGAS has satisfactory reliability and validity when used by professionals and when used in a situation in which there is minimal inter-rater information variance (i.e. information on which the score is based is consistent across all raters) (Hodges and Gust, 1995). In the current study, the CGAS was administered at admission and at discharge by the clinical team, and permission to use the rating was granted by participating young people and their families. A 'Recovery' score was calculated showing change in CGAS scores, and a dichotomous recovery/no recovery variable created depending whether positive change was shown, compared to no change or deterioration, over the course of the admission.

Table 2.2.2.1 Summary Decile Descriptions for CGAS (Green et al., 2007)

100-91 DOING VERY WELL
90-81 DOING WELL
80-71 DOING ALL RIGHT –minor impairment
70-61 SOME PROBLEMS - in one area only
60-51 SOME NOTICEABLE PROBLEMS – in more than one area
50-41 OBVIOUS PROBLEMS – moderate impairment in most areas or severe in one area
40-31 SERIOUS PROBLEMS – major impairment in several areas and unable to function in one area
30-21 SEVERE PROBLEMS - unable to function in almost all situations
20-11 VERY SEVERELY IMPAIRED - so impaired that considerable supervision is required for safety
10-1 EXTREMELY IMPAIRED - so impaired that constant supervision is required for safety

2.2.2.2 The Strengths and Difficulties Questionnaire (SDQ, Goodman et al., 1997).
The Strengths and Difficulties Questionnaire (SDQ) measures psychological adjustment in children and adolescents (Goodman, 1997) and has been established as a widely used instrument in child mental health research (Vostanis, 2006). It comprises 25 items grouped into five subscales: affective disturbance, conduct problems, hyperactivity-inattention, peer relationship problems and pro-social behaviour. The self-report version

was developed for young people aged around 11-16, depending on their level of understanding and literacy and can be successfully used with adolescents up to 19 years old. The total score gives an indication of severity of overall difficulties and caseness, and was used in this study to provide a self-report of current problem severity, to supplement the clinician-rated CGAS. The norms for the self-report SDQ Total are: 0-15 (normal); 16-19 (borderline; 20-40 (abnormal). The measure was rated routinely on the ward and permission for its use given by the young person. The affective disturbance subscale of the SDQ was used as the primary measure of affect (see section 2.2.3).

2.2.3 Affective disturbance

2.2.3.1 The emotional symptoms scale (SDQ-E) of the self-report SDQ were used as the primary measure of affective disturbance in this study. Five items rate dysphoric mood and anxiety, with high correlations with specific measures of anxiety and depression and good internal and test-retest reliability (Goodman, 2001). The norms for the SDQ-E are: 0-5 (normal); 6=borderline; 7-10 (abnormal) (www.sdqinfo.org, last accessed 14th May 2014).

2.2.3.2 The Positive and Negative Affectivity Scale – Child version (PANAS-C) (Watson, Clark, & Tellegen, 1988), was developed to meet the need for a brief, easily administered scale to assess positive affect (PA) and negative affect (NA) (Crook et al., 1998) and has demonstrated good convergent and discriminant validity with existing self-report measures of childhood anxiety and depression, also discriminating clinical cases of anxiety and depression (Laurent et al., 1999). Further support for the reliability and validity of the Positive and Negative Affect Schedule for children in a community sample was provided by Lonigan et al., (1999). Total scores for positive affect (12 items) and negative affect (15 items) were calculated according to the PANAS-C scoring protocol (Laurent et al., 1999). The PANAS-C has become a widely used self-report measure of negative and positive affect (Ebesutani, Okamura, Higa-McMillan, and Chorpita, 2011). The PA and NA scales demonstrated reliability and validity in both school-based and clinic-referred settings (Chorpita & Daleiden, 2002; Laurent et al.,1999. Further supporting the utility of PANAS-C, Chorpita and Daleiden found that PANAC-C NA and PA scores demonstrated good divergent and convergent validity with

criterion measures of anxiety and depression in a clinical sample (Chorpita, Daleiden, Moffitt, Yim, & Umemoto et al., 2000). The positive scale was used in the current study as a primary measure of positive affect. The negative scale provided a secondary assessment of mood and anxiety.

2.2.3.3 The Mood and Feelings Questionnaire (MFQ, Costello and Angold 1988) is a 33-item self-report measure of depression for young people (7-18 years old), covering a broad range of affective, cognitive, and motivational/behavioural symptoms. On each item participants are asked to rate the degree to which a symptom was experienced in the preceding two weeks on a three point scale; 0 – Not true, 1 – Sometimes true, 2 - True . The MFQ-C is sensitive to change, and so it can aid in evaluating the effect of treatment. The reliability and validity of the measure as a screen for depression has been well documented in British children (Kent, Vostanis & Feehan, 1997; Wood, Kroll, Moore & Harrington, 1995). The internal consistency of MFQ is reported to be very good (alpha=.94 (Wood et al., 1995). Burleson-Daviss et al. (2006) reported good criterion validity for the MFQ, suggesting that MFQ validly identifies Major Depressive Disorders and other mood disorders. The authors report a mean score of 32.8 (SD=13.5; n=77) in a group of adolescents with Major Depressive Episode (MDE), a mean score of 24.0 (SD=14.0; n=75) in a group of young people with a mood disorder other than MDE (i.e. an anxiety disorder such as generalized anxiety disorder or panic disorder), and a mean of 11.6 (SD=9.9, N=318) in a sample of young people with no mood disorder (Burleson Davies et al., 2006). Overall, the MFQ has satisfactory psychometric properties in samples containing a high proportion of depressed cases (Wood et al., 1995). In the current study, the MFQ provided a secondary, specific, assessment of mood. Item 19 of the MFQ ('I thought about killing myself') was used to assess the presence of suicidal ideation using a dichotomized rating where 0 (not true) was rated as no suicidal ideation, and 1 or 2 ('sometimes', or 'true') were rated as presence of suicidal ideation.

2.2.3.4 Spence Children's Anxiety Scale (SCAS, Spence, 1998): This self-report questionnaire assesses the young person's perception of the frequency with which they experience symptoms relating to obsessive-compulsive disorder, separation anxiety, social phobia, panic/agoraphobia, generalized anxiety/overanxious disorder and fears of

physical injury. On each item, respondents are asked to rate the degree to which a symptom is experienced on a 4-point frequency scale (never 0, sometimes 1, often 2, and always 3).The scale has been validated in UK children aged 12-17 years (Essau et al., 2011). The *SCAS* has good reliability with a Cronbach's alpha of .91, n=556 (Essay et al., 2002) and .92 in n=875 (Spence, Barrett and Turner, 2003). Moreover, the SCAS demonstrates good concurrent validity and the internal consistency of the total score and sub-scales was high, while test–retest reliability in a community adolescent sample (n=875, age=13-14 years old) was satisfactory (Spence et al., 2003; Muris et al., 2002). Normative data for the SCAS total indicates a mean of 24.65, SD=15.46, n=2559 (Ages 12-15) (Spence, 1997, 1998; Nauta et al., 2004). In the current study, the SCAS provided a secondary, specific, assessment of a range of anxiety disorders.

2.2.4 Emotion regulation

2.2.4.1 The Difficulties in Emotion Regulation Scale (DERS, Gratz & Roemer, 2004) is a 36-item measure of difficulties in the processes of becoming aware of, understanding, accepting, and modulating emotions as well as behaviour during emotional states. Although initially developed with an adult population, the scale has been tested on adolescent populations (Dutch adolescent community sample n=1003, Neumann, van Lier, Gratz & Koot, 2010; also Weinberg and Klonsky, 2009). The measure yields a total score as well as scores on six dimensions: a) non-acceptance of emotional responses, (*Nonacceptance*); b) difficulties engaging in goal-directed behaviour, (*Goals*); c) impulse control difficulties, (*Impulse*); d) lack of emotional awareness, (*Awareness*); e) limited access to emotion regulation strategies, (*Strategies*); f) lack of emotional clarity, (*Clarity*). Gratz and Roemer (2004) found that the DERS has high internal consistency (Cronbach's a > .80), good test–retest reliability (.88), and adequate construct and predictive validity. In the current study, the total DERS score, representing cumulative difficulties with managing affect, was used as the primary measure of emotional regulation, with the subscales forming secondary measures.

2.2.4.2 The CERQ-C (The Cognitive Emotion Regulation Questionnaire, (Garnefski, Kraaij & Spinhoven, 2002) is a self-report questionnaire measuring cognitive coping strategies of adults and adolescents aged 12 years and more (Garnefski, et al., 2002)

Cognitive coping strategies are defined by the authors who designed the CERQ as strategies for cognitive emotion regulation, that is regulating emotional responses to events causing the individual emotional aggravation (Thompson, 1991).

The CERQ consists of 36 items and measures a total of nine different cognitive ER strategies, each measured by a subscale of four items that people use after having experienced a negative life event or situation. The answers range from 1 (almost) never to 5 (almost) always. A total CERQ score is not computed; the individual subscales are considered separately. For each subscale, the minimum score is 4 and the maximum score 20.

The nine subscales are: a) *Blaming Yourself (Self-blame),* referring to thoughts in which you hold yourself responsible for what happened to you; b) *Accepting,* referring to thoughts where you resign yourself to what has taken place; c) *Ruminating*, referring to thinking about the feelings and thoughts associated with the negative event; d) *Concentrating on other, positive aspects (Positive refocusing),* referring to thinking about other, pleasant things instead of the event in question; e) *Concentrating on Planning (Refocusing on planning),* or thinking what steps must be taken to cope with the event; f) *Positive Reinterpretation* (*Positive reappraisal),* or giving positive significance to the event in terms of personal growth; g) *Putting into perspective*, or saying that worse things happen in the world*;* h) *Catastrophising*, referring to constantly recurring thoughts about how terrible the event was; i) *Blaming Others*, referring to thoughts in which you hold other people responsible for what happened to you (Garnefski, Kraaij & Spinhoven, 2001a; Garnefski, Kraaij & Spinhoven, 2001b). Garnefski et al., (2002) found that the CERQ had good factorial validity and high reliabilities, with Cronbach's alphas ranging between .75 and .87 (2007). The CERQ-C was obtained for use in the current study by completing an online request form http://www.socialsciences.leiden.edu/psychology/organisation/chn/health/research/request-cerq.jsp. In the current study, the CERQ provided a secondary measure of emotional regulation.

2.2.5 Trauma history

2.2.5.1 Trauma checklist

Trauma history was assessed using a frequency rating of ten common traumatic events (see below), including significant physical illness, bullying, physical and sexual abuse, developed specifically for this study, based on adult trauma checklists, by an expert in trauma and psychosis (Hardy, personal communication). Each item was rated from 0 (never happened) through 1 (happened only once) to 2 (happened more than once). A total frequency score for trauma history at baseline was obtained by adding up the frequency of trauma history for all types of events, and this was the primary measure of trauma history for the current study. Presence and absence of trauma history at admission was measured by a dichotomous variable (Yes/No trauma at admission).

The list of traumatic events included: a) Illness or being very poorly or sick; b) being in a serious accident; c) being in a natural disaster like an earthquake or tidal wave d); other people hurting me in some way physically; e) other people hurting me in some way sexually; f) other people hurting me in some way emotionally; g) seeing somebody else seriously hurt or killed; h) being bullied; i) contact with mental health services that was scary or threatening (like coming into hospital, reactions of family, friends or staff); j) Other problems or experiences that led to you coming into hospital that were scary or threatening (like hearing voices, seeing unusual things, thinking someone or something was out to harm you).

2.2.5.2 Children's Revised mpact of Events Scale – 13 (CRIES-13, Smith, Perrin, Yule, Hacam & Stuvland 2002). Horowitz, Wilner and Alvarez (1979) originally developed The Impact of Events Scale (IES) in order to monitor symptoms of re-experiencing the traumatic event and of avoidance of that event as well as the feelings associated with these experiences. The original 15 item, four-point scale, has two subscales of Intrusion and Avoidance. This was not originally designed to be used with children, but nevertheless has been successfully employed in several studies including children aged 8 years and older. Consequently, a new version was designed for use with children aged 8 years and above who are able to read independently. It consisted of 4 items measuring Intrusion and 4 items measuring Avoidance (CRIES-8). Psychometric data demonstrating satisfactory reliability and validity of the 8-item version were presented

in Yule (1997), and were good and total score on the 8-item IES correlated highly with the total score on the 15-item version of which it was part (r= +0.95, p<.001). Perrin, Meiser-Stedman and Smith (2005) reviewed the use of the CRIES-8 and provide validity data from two samples of children (52 attending a PTSD clinic, and 63 attending an Accident and Emergency Clinic). In both samples a cut-off score of 17 maximised sensitivity for detection of clinical PTSD and minimised the rate of false negatives, 75-83% of children were correctly classified as having PTSD (as separately judged from the Anxiety Disorder Interview Schedule) or not on the basis of their CRIES-8 score.

With the dominance of DSM-IV, Weiss and Marmar (1997), working with adults, added items to reflect symptoms of increased physiological arousal, although Horowitz et al. (1979) had found that these did not form a separate factor. Therefore, in a further development, the authors of the CRIES-8 decided to develop 5 additional items that were designed to reflect the 5 DSM-IV Cluster D symptoms of arousal. Thus the present version is designed for use with children aged 8 years and above who are able to read independently. It consists of 4 items measuring Intrusion, 4 items measuring Avoidance and 5 items measuring Arousal – hence it is called the CRIES-13. The Perrin et al (2005) study demonstrated that the CRIES-13 performed equally as well as the CRIES-8. Norms are provided by Smith and colleagues (2002) from a group of children exposed to war in Eastern Europe.

2.2.6 Unusual / Psychotic-like experiences (PLEs)

A nine-item questionnaire of unusual experiences, partially adapted from the Diagnostic Interview Schedule for Children (Costello et al., 1982), by Laurens and colleagues (2007; 2011, 2012), was used to measure psychotic-like experiences (PLEs) (Table 2.2.6). The items assess conviction, frequency, distress and impact of unusual experiences over a period of two weeks. A total PLE severity score can be calculated by totaling these scores (Ames et al., in press), and was used as the primary measure of unusual experiences in this study.

Table 2.2.6 *Psychotic-like Experiences Questionnaire items*

PLE questionnaire
Conviction
(0 Not True, 1 Somewhat True, 2 Certainly True)
1. Some people believe that their thoughts can be read. Have other people ever read your thoughts?*
2. Have you ever believed that you were being sent special messages through the television?*
3. Have you ever thought that you were being followed or spied on?*
4. Have you ever heard voices that other people could not hear?*
5. Have you ever felt that you were under the control of some special power?
6. Have you ever known what another person was thinking even though that person wasn't speaking?
7. Have you ever felt as though your body has been changed in some way that you could not understand?*
8. Do you have any special powers that other people don't have?
9. Have you ever seen something or someone that other people could not see?
* adapted from the Diagnostic Interview Schedule for Children
For each endorsed item:
Frequency: How often has it happened in the last two weeks?
0 Not at all, 1 Only once, 2 2-4 times, 3 5 or more times
Distress: How much has it upset you?
0 Not at all, 1 Only a little, 2 Quite a lot, 3, A great deal
Impact: How much has it made things hard at home or school?
0 Not at all, 1 Only a little, 2 Quite a lot, 3, A great deal
Total Conviction range 0-18
Total Frequency, Distress and Impact each range 0-27
Total PLE range 0-99
PLE last year
Have you had any of these experiences in the last year?
(0 Not True, 1 Somewhat True, 2 Certainly True)

Internal consistency of this measure has been demonstrated in a large sample of similarly aged British children (Laurens et al., 2007). The scale also assessed whether

the PLEs had been presented or not in the preceding year. Internal consistency for the Total PLE score from scales used with children with ages between 9-12 is high (0.82), as found by Laurens et al. (2007). Similarly, Mackie et al. (2011) found a good internal consistency of the measure at all points in time (0.74–0.81) in a sample of Australian adolescents.

2.3 Procedure

2.3.1 Piloting and service user involvement

Information sheets, consent forms, measures packs and the study procedure were piloted with a focus group of young people from the inpatient unit. Particular attention was directed to the trauma measure and how young people would feel reporting this. No content changes were suggested. Young people reported that they would routinely discuss these issues on the ward anyway, and that they felt safe to do so. Minor amendments were suggested regarding layout and design of measures (e.g. spacing pages out better, using different pictures), which were implemented before commencing recruitment.

2.3.2 Study conduct

All new admissions to the inpatient units were first approached by staff who then introduced the study, offered an information sheet and asked if the researcher may speak to the young person. On first meeting, the researcher explained the study and its purpose and went through the information sheet and consent form (or assent form if the young person was under 16). If a young person under the age of 16 indicated an interest in taking part, parental consent was sought before progressing. Following this, the young person's consent or assent was sought. Once consents were fully in place, a meeting was arranged to complete the questionnaires. This meeting proceeded at a pace to suit the young person, and took approximately 45 minutes. When necessary, a second meeting was arranged. On each occasion of meeting, the researcher took care to meet with the duty member of staff to ensure they were aware of any risk issues in that young person and any current issues on the ward, and that it was appropriate to approach the young person on that occasion.

As the aim of the study was to investigate psychological processes in young

adolescents, the study recruited across the adolescent age range (12-18 years old). The research team worked closely with the clinical care team to ensure that the research procedures were appropriate for each child recruited, and adapted the explanations of procedures and administration as needed. The researchers had clinical experience of working with adolescents with mental health problems and all of the supervisors were clinically qualified. One supervisor is the lead clinician for the inpatient service. The research team were informed of impending discharges by the ward administrator and additionally checked on a weekly basis with an identified member of staff.

2.4 Design

The current study was designed to investigate ER in an adolescent inpatient sample to:

A. Characterize ER strategies and examine the role of ER in psychopathology;

B. Explore the role of ER in functional and clinical recovery over the course of an inpatient admission.

The study therefore had both cross-sectional and longitudinal components. The cross sectional component was designed to assess baseline general functioning (CGAS), affective disturbance (SDQ-E,) and ER strategies (DERS Total), as well as baseline associations between affective disturbance (SDQ-E), ER (DERS Total), PLEs (PLEs Total) and trauma history (Trauma Total). The longitudinal component had two aspects. The primary focus of change was overall functional recovery, measured by change over time in general functioning (CGAS recovery), and baseline predictors of recovery were investigated. Secondary longitudinal analyses employed a repeated-measures design to investigated change in primary and secondary variables of interest and inter-relationships in change processes, in a single sample. Assessments were carried out at two time points: a) baseline - at or soon after admission to the unit and b) follow-up – before or close to discharge from the unit. ‘Recovery’ for each measure was calculated as the difference between admission and discharge scores.

A summary of the primary and secondary measures is given in Table 2.4.1.

Table 2.4.1 *Variables used in statistical analyses*

Symptoms / Difficulties	Primary measure	Secondary measure
General Functioning & Change	CGAS (admission, discharge, recovery (difference between admission and discharge)	SDQ Total (admission, discharge recovery)
Affective disturbance	SDQ-E (negative emotion admission)	SDQ-E, PANAS-C-PA (discharge, recovery) MFQ, SCAS, PANAS-C-NA (admission, discharge recovery)
Emotion regulation	DERS Total (admission)	DERS Total (discharge and recovery) DERS subscales (admission, discharge recovery) CERQ subscales (admission, discharge recovery)
Psychotic-like experiences (PLE)	PLE Total (severity) (admission)	PLE severity (discharge, recovery)
Trauma history	Trauma History Total (frequency)	CRIES-13 (PTSD symptoms at admission, discharge, recovery)

2.5 Analysis

2.5.1 Power calculation

The main analyses involved cross-sectional correlational and regression designs. No studies have examined the associations of ER with affect, trauma and PLEs in inpatient adolescents. However, a similar study on adolescents in the community found large associations (0.4, 0.45) in regression analyses between life events, emotional disturbance and unusual experiences (Ames et al., in press). A large population study of ER, trauma and psychosis found large (OR=7) to very large (OR=21) odds ratios for the association of ER with non-clinical psychotic symptoms. For the current study, to identify a large effect (the average of the effects found by Ames and colleagues, 0.425), in a correlational model with 80% power and alpha set at 0.05, required a sample of 41 participants. A linear multiple regression, again with alpha set at 0.5, required 30

participants to detect a similar large effect at 80% power with three predictors, and 34 participants with four predictors.

2.5.2 Missing data

Missing data for primary measures was prorated if fewer than three items were missing. For secondary measures, and if more items were missing, participants were omitted from the relevant analysis and the sample size reported.

2.5.3 Statistical analyses

2.5.3.1 Distribution of data and testing for normality.

All variables except the CRIES-13 deviated significantly from a normal distribution according to the Shapiro-Wilk test of normality. Non-parametric correlations (Spearman's Rho) and paired tests (Wilcoxon matched pair signed ranks test) are therefore reported throughout. For the demographic analyses, independent sample t-tests were employed, with a Satterthwaite adjustment carried out when the assumption of equality of variances was not met. For the regression analyses, each model was checked for violation of assumptions before proceeding, using the Durbin Watson test to detect autocorrelation in the residuals (values range from 0-4, extremes indicate violation of assumptions, values between 1 and 2 are acceptable, Durbin and Watson, 1950, 1951), collinearity diagnostics to check the independence of statistical predictors (collinearity tolerances and variance inflation factors; values closer to one indicate low multicollinearity), and the Shapiro-Wilk test to check the normality of the distribution of studentized residuals.

2.5.3.2 Characterising the sample

Descriptive analyses, including means and standard deviations, or percentage frequencies were calculated for demographic variables: age, duration of admission, reading age, gender, ethnicity, and diagnosis. Ethnicity was dichotimised into young people from a black or minority ethnic group (BME) and young people from a non-BME group. Diagnosis was dichotomized into psychotic (including bipolar) or non-psychotic. Previous admissions were dichotomised into 'none' and 'one or more'. Age of first contact with services was dichotomized into those young people accessing the service before and after the usual age of entry into early intervention services (14 years).

Variation in the primary variables of interest by demographic factors was assessed using non-parametric correlation (for age) and by t-test (for gender, ethnicity and diagnosis), using a Satterthwaite adjustment where the assumption of equality of variances was violated.

2.5.3.3 Hypothesis testing

All statistical analysis were computed at $p \leq .05$, two-tailed, using SPSS 22.0 (IBM, 2011). Hypotheses were tested using primary measures as the main analyses, and repeated using secondary measures to provide greater detail and to identify the component processes involved in key associations. Completion rates were not as high for secondary measures and at discharge, and power may consequently be limited for these secondary analyses.

Hypothesis 1: Increased ER difficulties at baseline (DERS Total Admission) will be associated with increased affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission). Baseline ER (DERS Total Admission) will mediate the relationship between affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission).

Preliminary correlational analyses tested the baseline inter-relationships of these variables, using the primary measures (DERS Total, SDQ-E and Trauma History Total)**.** A series of linear regression analyses was used to assess mediation, with SDQ-E Admission as dependent variable (DV) and trauma history (Trauma History Total Admission) as independent variable (IV) in the first step and ER (DERS Total Admission) as an additional IV in the second step.

Secondary correlational analyses considered the same relationships using additional baseline measures of negative affect (MFQ, SCAS, PANAS-C NA), PTSD symptoms (CRIES-13), and considering each ER strategy in turn (CERQ subscales).

Hypothesis 2: Increased PLEs severity at baseline (PLE Total Admission) will be associated with more ER difficulties (DERS Total Admission), increased affective

disturbance (SDQ-E Admission), and trauma history (Trauma History Total Admission) and the association of baseline ER (DERS Total Admission) with PLEs (PLE Total) will remain significant when negative affective disturbance (SDQ-E Admission), and trauma history (Trauma History Total Admission) are controlled.

Again, preliminary correlational analyses tested the baseline relationships of these variables, using the admission primary measures of PLE severity (PLE Total), those of affective disturbance (SDQ-E), ER (DERS Total) and trauma history (Trauma total) as above, together with the PANAS-C NA as a measure of negative affect. A series of linear regression analyses was used to assess the association of ER (DERS Total) with PLE severity (PLE Total) (DV), with steps as follows:

Step i) IV = Trauma History Total and SDQ-E
Step ii) IV = Trauma History Total, SDQ-E and DERS Total

Secondary correlational and linear regression analyses considered the same relationships using additional baseline measures of negative affect (MFQ, SCAS, PANAS-C NA), PTSD symptoms (CRIES-13), and considering each cognitive emotion regulation strategies (CERQ subscales) strategy in turn.

Hypothesis 3: Recovery (CGAS Discharge and CGAS Recovery) will be negatively associated with baseline ER difficulty (DERS Total Admission), affective disturbance (SDQ-E Admission), trauma history (Trauma History Admission) and PLEs severity (PLEs Total Admission) and the association of baseline ER (DERS Total Admission) with Recovery (CGAS discharge and CGAS recovery) will persist when baseline affective disturbance (SDQ-E Admission), trauma history (Trauma Total Admission), and PLEs (PLEs Total Admission) are controlled.

Preliminary correlational analyses tested associations of admission, discharge and Recovery CGAS scores with admission scores for DERS Total, PLE Total, SDQ-E and Trauma history Total at admission scores. Three linear regression analyses (with CGAS admission, CGAS discharge and CGAS recovery as the respective DVs) tested the

associations of CGAS scores with baseline DERS Total, controlling for baseline affective disturbance (SDQ-E), trauma history (Trauma Total), and PLEs (PLE Total). Each regression was run in two steps. In the first step, the IVs were PLE Total and SDQ-E; in step 2, the IVs were PLE Total, SDQ-E and DERS Total.

Secondary analyses investigated recovery on secondary measures and change in the other variables of interest, as a way of characterizing the changes occurring during admission. Secondary hypothesis testing considered the associations of change in ER (DERS Total, DERS Subscales and CERQ subscales), affective disturbance (SDQ-E), trauma history (Trauma History Total), PTSD symptoms (CRIES-13), with each other and with overall functional recovery (CGAS recovery).

No formal adjustment for multiple testing was automatically carried out. However, for each hypothesis, consideration is given to the size of effects, rather than simply their statistical significance.

2.6 Ethical considerations

The study raised particular ethical issues because of the routine enquiry, in a research context, about distressing traumatic events, including physical, sexual and emotional abuse, that may be ongoing, and the new disclosure of which would necessitate appropriate safeguarding procedures. Moreover, for young people under 16 years, parental consent was required for the young person to participate, and a parent or other family may have been the perpetrator of abuse. Great care was taken to ensure that the clinical team approved the use of the measure, and a formal protocol for seeking parent consent and feeding back information to the care team was approved by the clinical teams in the units prior to submission for ethical approval. The ethics application highlighted this aspect as one requiring special consideration by the committee, and the committee approved the procedures in place. The focus groups specifically asked young people if they would be willing to disclose this information in a research context. Only one young person (of six) thought this would present an issue for them in terms of reporting, saying that she would choose not to report, but would not mind being asked.

The questionnaires were selected or specifically designed for this clinical group, and the research team included clinicians with experience of working with an adolescent inpatient group. Participants had the opportunity to discuss and debrief with a senior and very experienced clinician when this was needed. In practice, routine feedback to and support from ward staff sufficed, and no participant took up this opportunity.

Full ethical, and local Trust approvals were secured before commencing the study: Research Ethics Committee (REC) approval by London Brent and South East Coast Kent - RECs reference 12/LO/1984 on 02/01/2013 and R&D approval by the South London and Maudsley NHS Foundation Trust, reference R&D2013/038, on 13/05//2013. Copies of the Consent / Assent form and Information Sheets for carers and young people can be found in Appendix 2.6.

CHAPTER 3 FINDINGS

3.0 Overview

The chapter begins with a summary of the presentation of the inpatient sample, demographically, and on the key clinical measures at baseline, with a description of their recovery processes according to the main outcome measure (the Child Global Assessment Scale, CGAS). Scores are compared to normative data to give an impression of the degree of severity of presenting difficulties amongst the participants.

Each clinical area of interest for the current study (affective disturbance, emotion regulation (ER), trauma history and psychotic-like experiences (PLEs)) is then considered in more detail, including scores on secondary measures, subscale scores and item frequencies for the checklist measures of trauma history and PLEs. Associations between primary and secondary measures are presented to demonstrate the degree of representativeness of the primary measures selected to test the main hypotheses.

Each hypothesis is tested in turn, starting with the primary measures, as the main, powered analysis. The main hypotheses are listed below:

Hypothesis 1: Increased ER difficulties at baseline (DERS Total Admission) will be associated with increased affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission). Baseline ER (DERS Total Admission) will mediate the relationship between affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission).

Hypothesis 2: Increased PLEs severity at baseline (PLE Total Admission) will be associated with more ER difficulties (DERS Total Admission), increased affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission) and the association of baseline ER (DERS Total Admission) with PLEs (PLE Total) will remain significant when affective disturbance (SDQ-E Admission), and trauma history (Trauma History Total Admission) are controlled.

Hypothesis 3: Recovery (CGAS Discharge and CGAS Recovery) will be negatively associated with baseline ER difficulty (DERS Total Admission), affective disturbance (SDQ-E Admission), trauma history (Trauma History Admission) and PLEs severity (PLEs Total Admission) and the association of baseline ER (DERS Total Admission) with Recovery (CGAS discharge and CGAS recovery) will persist when baseline affective disturbance (SDQ-E Admission), trauma history (Trauma Total Admission), and PLEs (PLEs Total Admission) are controlled.

Primary analyses are followed in each section by a series of secondary analyses to investigate additional relationships of relevance to the overarching research questions. Findings of the exploratory secondary analyses will be included in appendices.

The chapter concludes with a summary of the findings before moving on to the discussion and conclusions in Chapter 4 of the thesis.

3.1 Demographic and clinical picture at admission

A total of 42 participants were recruited from two inpatient units (Unit 1 n=25, 59.5%; Unit 2 n=17, 40.5%) and provided data at admission and discharge. Demographic characteristics are shown in Table 3.1.1.

The Burt test suggests an average reading age of 12.4 years, which is lower than the average age of the sample, although there is high variability. Most participants (71.4%) were White British. Participants of ethnic minority came from a variety of backgrounds including White Irish (2.4%), other White background (11.9%), Mixed White and Black African (2.4%), Indian (2.4%), Bangladeshi (2.4%), Caribbean (2.4%), Other Black Background (2.4%), not stated (2.4%). Just under two-thirds of the sample were prescribed medication (63%), the remainder were medication free.

Clinical measures are shown in Table 3.1.2. Scores on the Child Global Assessment Scale (CGAS) at admission indicated that young people have “major impairment of functioning in several areas and unable to function in one of these areas”. All participants except one showed recovery over the course of their admission as measured by the CGAS. The one participant who did not improve had an admission CGAS score

of 45, and obtained a score of 12 at discharge and was moved to a secure unit. Recovery on the CGAS was statistically significant (t=-7.9, df=37, p<0.001).

Table 3.1.1 *Demographic characteristics of the sample (n=42)*

	M	SD
Age (years)	16.4	.7
Duration of admission (days)	79.0	50.5
BURT word reading test (n=35)	91.5	28.0
	Frequency	**%**
Sex		
Female	29	69.0
Male	13	31.0
Ethnicity		
non-BME	30	71.4
BME	12	28.6
Diagnostic category		
Mood disorders	11	26.2
Anxiety disorders	4	9.5
Eating disorders	6	14.3
Emerging PD	4	9.5
Psychotic disorders	9	21.4
Other*	8	19.0
Previous admissions (n=41)		
None	27	64.3
One or more	14	35.8
Age at first contact with services (n=40)		
<14 years	11	29.6
14 and over	29	70.4

Key: *Other disorders: Dissociative-conversion-disorder; Mental disorder not otherwise specified; Adjustment disorder; Acute stress reaction or Not stated.

On the SDQ, all but two participants obtained a total score of 17 or higher, indicating clinically significant problems. Emotional problems on the SDQ-E were at borderline clinical levels overall (score of 6=borderline; score of 7-10=clinical range). The majority of the sample fell into the borderline (n=3) or clinical (n=26) ranges (non-clinical, n=13). Positive affect was at lower levels than an US normative community sample of undergraduates (Normative mean = 32.0, SD =7.0, Watson et al., 1988), although ten young people scored above this mean, and four of these more than a standard deviation higher.

All participants (n=39) but one participant reported having experienced trauma, with high levels of cumulative trauma (in a normative US community sample, only 37% of young people had experienced two or more traumatic events by the age of 16 years, Copeland et al., 2007). More than 85% of young people scored above 17 on the two scales of the CRIES-13, indicating a high likelihood of reaching criteria for a comorbid diagnosis of post-traumatic stress disorder (Smith et al., 2002). The mean PTSD symptoms scores obtained on the CRIES-13 were higher than means obtained in a community sample of vulnerable children and adolescents assessed after a natural disaster (Chen et al., 2012).

The mean DERS total scores of emotion regulation (ER) were more than two standard deviations higher than those reported by Weinberg and Klonsky (2009) in a similarly aged community sample of adolescents (Normative mean= 78.9, SD=23.2), indicating substantially greater difficulties with ER compared to the community sample.

Most of the sample reported psychotic-like experiences (PLEs, 85%), and of these, 91% were distressing (around a quarter of young people (aged 9-14) in the community report distressing PLEs). Approximately one third of the sample reported suicidal ideation.

Of the main clinical variables (CGAS (admission, discharge and recovery), DERS Total, SDQ-E, PANAS-PA, Trauma history Total (frequency), CRIES-13, PLE severity) differences according to diagnosis (psychotic, including bipolar compared to non-psychotic) were found for the PANAS-C PA ($t=5.4$, $df=39$, $p<0.001$), the DERS Total ($t=-2.7$, $df=9.4$, $p=0.02$), and the CGAS (admission ($t=-2.1$, $df=38$, $p=0.04$), discharge ($t=2.0$, $df=36$, $p=0.06$ – trend) and recovery ($t=3.3$, $df=36$, $p=0.002$), such that psychotic disorders were characterized by higher levels of positive affect, fewer difficulties with emotional regulation, better functioning at discharge (having functioned less well at admission), and better recovery (otherwise, t values < 0.2, p values > 0.1). No clinical variable differed significantly according to gender (t values all < 2.0, p values > 0.1), but there was a tendency for females to show less good recovery ($t=-1.8$, $df=36$, $p=0.08$, and lower CGAS at discharge ($t=-1.7$, $df=36$, $p=0.09$). Variation according to ethnicity was found only for the DERS, with higher levels of ER difficulties in non-BME participants (BME mean = $t=2.9$, $df=12.9$, $p=0.01$, otherwise t

values all < 2.0, p values all > 0.1). The BME sample was fairly small (n=12), therefore ethnic differences in DERS scores should be interpreted with caution. Only SDQ-E was associated with age, at a trend level, such that emotional problems increased with age (Rho=0.3, p=0.06, otherwise, Rho values all < 0.2, p values all > 0.2).

Table 3.1.2 *Clinical characteristics of the sample at admission*

Measures*	n	M	SD
CGAS Admission	40	37.3	10.8
CGAS Discharge	38	56.0	11.9
CGAS Recovery	38	19.0	14.9
SDQ Total	41	26.5	5.3
SDQ-Emotional (SDQ-E)	42	6.7	2.5
DERS	42	127.9	26.5
PLE severity	41	27.3	24.7
Total trauma history	38	7.3	5.0
CRIES-13	34	39.1	18.3
		Frequency	%
Suicidal ideation			
Yes	41	15	35.7
No		26	61.9
Trauma history	40		
Yes		39	92.9
No		1	2.4

Key: *CGAS: Child Global Assessment Scale (Schaffer et al., 1983); CGAs Recovery scores were computed by subtracting CGAS admission from CGAS discharge; SDQ: Strengths and Difficulties Questionnaire (Goodman et al., 2011); DERS: Difficulties with Emotion Regulation Scale (Gratz and Roemer 2004); PLE: Psychotic-Like Experiences (Laurens et al., 2007, 2011, 2012); Trauma history: Trauma Checklist (Hardy, personal communication, 2012); CRIES-13: Children's Revised Impact of Events Scale-13 (Smith et al., 2012).

3.2 Affective disturbance

Secondary measures of affective disturbance showed high levels of depression, anxiety, and negative emotion (Table 3.2.1).

Table 3.2.1 *Secondary measures of affective disturbance at admission*

Measures*	N	M	SD	Normative M (SD)
PANAS-C negative (NA)	39	52.00	14.11	F=31.6 (11.0) M=31.5 (11.2) (Ebesutani, et a., 2011)
SCAS Total	33	53.00	20.61	27.38 (16.5, www.scaswebsite.com, last accessed 14th May 2014)
MFQ	32	43.22	15.38	10.6 (9.5, Sund et al., 2001))

*PANAS-C (NA): Positive and Negative Affect scale-Child, (Negative affect) (Laurent et al., 1999); SCAS: Spence Children's Anxiety Scale (Spence, 1998); MFQ: Mood and Feelings Questionnaire (Costello and Angold, 1988).

Associations of secondary measures with the main affect measures are shown in Table 3.2.2, and showed the PANAS-C NA and SDQ-E to be representative of the affective symptom picture of the sample.

Table 3.2.2 *Non-parametric correlations between primary and secondary measures of affective disturbance at admission*

Measures*	Correlations	PANAS-C-NA (n=39)	MFQ (n=32)	SCAS (n=33)
SDQ-E	Spearman's Rho	.544**	.539**	.736**
PANAS- C PA	Spearman's Rho	-0.203	-.481**	-0.086

*PANAS-C (NA and PA): Positive and Negative Affect scale-Child, (Negative affect) (Laurent et a., 1999); SDQ-E: Strengths and Difficulties Questionnaire, Emotional Subscale (Goodman et al., 2011); SCAS: Spence Children's Anxiety Scale (Spence, 1998); MFQ: Mood and Feelings Questionnaire (Costello and Angold, 1988).
**p < .01

3.3 Emotion regulation

Participants demonstrated very high levels of difficulty in regulating emotions, with mean scores on all subscales being much higher than those reported in community samples and also higher than other inpatient samples (Table 3.3.1).

Table 3.3.1 *Descriptive statistics – Emotion regulation at admission (DERS)*

Study	Present study (n=42)	Community sample* (n=428)	Inpatient sample** (n=218)		Inpatient sample *** (n=111)
Mean (SD)			Non-SSI	SSI	
DERS Total	127.95 (26.49)	78.9 (23.2)			102.18 (31.08)
Non-acceptance	20.55 (6.28)	11.3 (5.3)	12.00 (5.96)	15.36 (6.81)	
Goals	19.71 (5.02)	13.8 (5.3)	16.69 (5.68)	19.15 (4.89)	
Impulse	19.76 (6.08)	11.9 (5.6)	13.30 (5.76)	17.38 (6.94)	
Awareness	21.38 (4.94)	15.5 (4.9)	16.12 (6.01)	17.97 (5.59)	
Strategies	29.64 (8.00)	15.6 (7.0)	18.68 (8,34)	25.65 (8.29)	
Clarity	16.90 (4.13)	11.1 (4.3)	12.36 (5.23)	14.55 (4.74)	

Key: DERS: Difficulties with Emotion Regulation Scale (Gratz and Roemer 2004)
*Weinberg and Klonsky, 2009
**Perez et al., 2012; non-SSI=non-suicidal self-injurious; (DERS total not reported)
***Sharp et al., 2011 (DERS subscale scores not reported)

Table 3.3.1 shows that the highest mean (and therefore the most problematic emotion regulation difficulty) is having limited access to emotion regulation strategies. This is consistent with findings reported in adolescent inpatient samples and in community samples. Furthermore, in terms of cognitive strategies of emotion regulation, the most prevalent cognitive emotion regulation strategies (as measured by the CERQ) are self-blame, rumination and acceptance of difficulties, whereas the least prevalent are blaming others and positive refocusing (Table 3.3.2).

Table 3.3.2 *Cognitive Emotion Regulation Questionnaire Subscales (CERQ)*

CERQ subscale	M	SD	CERQ/DERS (Spearman's Rho)	p
Self-blame	15.17	4.06	.502	0.001***
Acceptance	12.81	3.40	-0.03	0.851
Rumination	13.24	3.19	.517	0***
Positive refocusing	6.62	2.57	-.522	0***
Refocus on planning	8.50	3.29	-.669	0***
Positive reappraisal	8.38	4.00	-.660	0***
Putting into perspective[1]	10.35	3.25	0.07	0.67
Catastrophizing[2]	9.90	3.70	0.1	0.536
Other-blame[1]	7.10	3.19	-.320	0.044*

Key: [1]n=40, [2]n=41; *p < .05; **p < .01, ***p<.001
CERQ: Cognitive Emotion Regulation Questionnaire, (Garnefski & Kraaij, 2007);
DERS: Difficulties with Emotion Regulation Scale (Gratz and Roemer 2004).

The DERS total score was associated with most CERQ scores, and particularly captured negative cognitive regulation strategies. Unlike in the standardization samples, suicidal ideation (SI) in the current sample was not associated with poorer emotion regulation (DERS total mean SI group = 115.0, SD=31.1, n=14; DERS total mean no SI group = 135.3, SD=21.6, n=27).

3.4 Trauma History

Frequency ratings of individual trauma history types are shown in Table 3.4.1. The highest frequencies were obtained for emotional trauma, being bullied, contact with Mental Health Services and being poorly or ill. Trauma as a result of a natural disaster, serious accident or sexual abuse were the least frequent in young people's report at admission.

Trauma history total was strongly associated with CRIES-13 at baseline (sypmtoms of PTSD) (Spearman's Rho=0.6, $p<0.001$, n=32).

Table 3.4.1 *Types of trauma reported at admission (frequencies and percentages)*

	Trauma experienced once or more than once	Frequency	%
1.	Illness or being very poorly or sick	20	47.6
2.	Being in a serious accident	7	16.7
3.	Being in a natural disaster like an earthquake or tidal wave	1	2.4
4.	Other people hurting me in some way physically	18	42.8
5.	Other people hurting me in some way sexually	11	26.2
6.	Other people hurting me in some way emotionally	26	61.9
7.	Seeing somebody else seriously hurt or killed	14	33.3
8.	Being bullied	25	59.5
9.	Contact with Mental Health Services that was scary or threatening (like coming into hospital, reactions of family, friends or staff)	23	54.7
10.	Other	20	47.7

3.5. Psychotic-like experiences (PLEs)

The highest proportion of reported PLEs at admission were beliefs about being followed/spied upon and audio and visual hallucinations. Almost half of the participants also reported being able to read others' thoughts or having their thoughts read by others. Having special powers is the least reported PLE in this sample (Table 3.5.1).

Table 3.5.1 *Types of psychotic-like experiences at admission (frequency and percent of answers 'somewhat true' or 'certainly true')*

	Types of psychotic-like experiences	Frequency	%
1.	Other people reading your thoughts	18	42.9
2.	Special messages sent to you through the TV	15	35.7
3.	You are being followed or spied upon	31	73.8
4.	Heard voices that other people could not hear	25	59.5
5.	Being under the control of some special power	15	35.7
6.	Knowing what another person was thinking without speaking	20	47.6
7.	Your body has been changed in some way that you could not understand	14	33.3
8.	Have special powers that other people don't have	9	21.4
9.	Seeing things that other people cannot see	23	54.8
10.	Unusual experiences in the last year	23	54.8

3.6 Testing Hypothesis 1

Increased ER difficulties at baseline (DERS Total Admission) will be associated with increased affective disturbance (SDQ-E Admission) and Trauma History (Trauma History Total Admission). Baseline ER (DERS Total Admission) will mediate the relationship between affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission).

Table 3.6.1 shows the initial correlations between the primary measures of affect (SDQ-E;), trauma history (Trauma History Total), and ER (DERS Total).

Table 3.6.1 *Affect, emotional regulation and trauma history associations at admission (n=38) (Spearman Correlations)*

Spearman Correlations	SDQ-E	Trauma history total
DERS	0.4*	0.1
SDQ-E		0.3

Key: SDQ-E: Strengths and Difficulties Questionnaire Emotion Subscale (Goodman et al., 2011); DERS: Difficulties with Emotion Regulation Scale (Gratz and Roemer 2004); Trauma history: Trauma Checklist (Hardy, personal communication, 2012); *p<.01

ER was moderately associated with affective disturbance, but not with the primary

trauma history measure. Frequency of trauma was associated only at a trend level with affective disturbance.

Hypothesis 1 was therefore not confirmed, in that although ER was associated with affective disturbance, ER was not associated with trauma history. Findings of secondary exploratory analyses suggested trend level associations between ER (DERS total) and PTSD symptoms (CRIES-13); and associations of anxiety, rather than low mood with both trauma history and ER can be found in Appendix 3.6.1.

3.7 Testing Hypothesis 2

Increased PLEs severity at baseline (PLE Total Admission) will be associated with more ER difficulties (DERS Total Admission), increased affective disturbance (SDQ-E Admission) and trauma history (Trauma History Total Admission) and the association of baseline ER (DERS Total Admission) with PLEs (PLE Total) will remain significant when affective disturbance (SDQ-E Admission), and trauma history (Trauma History Total Admission) are controlled.

PLE severity was strongly associated with affective disturbance (Rho=0.4, p=0.008, n=41), and trauma history (Rho=0.6, p<0.001, n=38) but not with ER (Rho=0.2, p=0.1, n=41).

No further primary analyses were therefore carried out.

Exploratory secondary analyses of relationships between emotion regulation, affective disturbance, PLEs and PTSD symptoms are reported in full in Appendix 3.6.1.

Hypothesis 2 was therefore partially confirmed in the primary analyses, in that PLEs were associated with negative affective disturbance, and strongly with trauma history. However, no primary association with ER was found, and the single ER subscale association found in the secondary analyses did not persist once negative affect and trauma history were controlled.

3.8 Testing Hypothesis 3

Recovery (CGAS Discharge and CGAS Recovery) will be negatively associated with baseline ER difficulty (DERS Total Admission), affective disturbance (SDQ-E Admission), trauma history (Trauma History Admission) and PLEs severity (PLEs Total Admission) and the association of baseline ER (DERS Total Admission) with Recovery (CGAS discharge and CGAS recovery) will persist when baseline affective disturbance (SDQ-E Admission), trauma history (Trauma Total Admission), and PLEs (PLEs Total Admission) are controlled.

Initial correlations between CGAS admission, discharge and recovery scores and the primary clinical variables (emotional regulation, affective disturbance, PLE and trauma history) are shown in Table 3.8.1.

As ER was not associated with recovery, the planned regression analyses were not carried out.

Table 3.8.1 *Associations between CGAS scores and ER, affect, trauma and PLEs at admission (Spearman correlations)*

	CGAS Admission	CGAS Discharge	CGAS Recovery
SDQ-E	0.04, n=40	-0.3, n=38	-0.4*, n=38
DERS Total	0.2, n=40	-0.2, n=38	-0.2, n=38
Trauma History Total	0.3*, n=37	-0.1, n=37	-0.1, n=37
PLE Total	0.3*, n=40	0.03, n=38	-0.2, n=38

*p<.05

Significant improvement occurred only on the CGAS, and on the DERS (Table 3.8.2).

Further exploratory analyses were carried out to identify any change in primary and secondary measures. These findings are presented in Appendix 3.6.2.

For PLEs, 82% of participants with a PLE at admission continued to report PLEs at discharge. However, only 63% of PLEs were distressing at discharge (compared to 91% at admission). No participant developed PLEs during the course of their admission, one experienced a PLE that was not distressing becoming so. Rates of suicidal ideation

remained stable at just over a third of the sample (n=8/19, 40%).
Change was evident on each of the ER subscales of the DERS (Table 3.8.3), reaching significance for all but impulse control, which tended towards significance, and Non-acceptance, which did not change. On the CERQ, although changes were in a positive direction, none reached statistical significance (p values all < 0.05; Wilcoxon matched pair signed rank tests).

However, although both emotion regulation and overall functioning changed during the course of the admission, the changes were not significantly correlated (Rho =-0.1, p=0.7, n=17).

Hypothesis 3 was therefore not confirmed in primary analyses. However, results showed that both emotion regulation and functioning improved significantly at discharge even though no associations were found between these improvements.

CHAPTER 4: DISCUSSION

The study presented here aimed to characterize emotion regulation strategies in a group of adolescent inpatients, and investigate their baseline associations with trauma and affective disturbance, and their specific relationships with psychotic-like experiences and psychosis when controlling for affective disturbance and traumatic experiences. A secondary aim was to identify patterns of change in emotion regulation over time (from admission to discharge) and its potential influence on clinical recovery.

This is the first study investigating emotion regulation in relationship with affect, PLEs and trauma in inpatient adolescents.

Results presented in Chapter 3 partially support the hypothesis that ER difficulties play a mediating role in the association of trauma symptoms and emotional problems. While ER is associated with affect and emotional symptoms, ER was not associated with the primary measure of trauma (frequency of trauma). However, a secondary trauma measure was associated with negative affect, with a trend association with ER difficulties.

The findings partially support the hypothesis that PLEs were associated with emotional symptoms and strongly with trauma, but not with ER difficulties. The single ER subscale (impulse control) association with PLE found in secondary analyses did not persist once negative affect and trauma were controlled.

Also, findings did not confirm the hypothesis concerning the association of ER with recovery in that recovery measured by overall psychopathology and functioning (the Child Global Assessment Scale, CGAS) was not associated with recovery in ER, even though ER did improve substantially over the course of the admission.

The key findings of the study will be briefly summarised before a more detailed discussion of the current findings. This summary will be followed by a consideration of limitations, relation to existing literature, clinical implications and suggestions for future research.

Key findings

Demographic and overall clinical picture at admission

Of the total of 42 young people recruited to the study from two adolescent inpatient wards, 69% were girls (f=29; m=13). The mean chronological age of 16.4 years, showed very little variability, (SD .7). The average reading age for the sample was four years below the expected reading age for the respective developmental stage although large variability was found in this sample. Approximately three quarters of the participants were White British and a similar proportion had their first contact with mental health service at 14 years old or over. Also, nearly two thirds of participants were experiencing their first inpatient admission.

The young people in this sample were assessed by clinicians as *having major impairment of functioning* in several areas and unable to function in one of these areas. There were no associations found between clinician rates of overall functioning and self-reported measures of ER (emotion regulation), affect, PLEs (psychotic-like experiences) and trauma measures at admission. Approximately one third of the sample reported suicidal ideation. All but two participants reported *clinically significant problems* on a measure assessing general emotional and behavioural difficulties. Emotional problems increased with age, while no clinical variable differed significantly according to *gender*. Higher levels of ER difficulties were found in the non-BME sub-sample although this sample was fairly small, and therefore ethnic differences in scores should be interpreted with caution. Approximately 1/4 of participants were diagnosed with a mood disorder, 1/5 with a psychotic disorder, 1/7 with an eating disorder, 1/10 with emerging borderline personality disorder and 1/10 with an anxiety disorder while 1/5 had other diagnoses. Psychotic and bipolar disorders were characterized by higher levels of positive affect, fewer difficulties with emotional regulation, poorer functioning at admission, and better recovery.

Discussion: Demographic and clinical picture in adolescent inpatients

Findings of the present study seem to be generally in line with previous research in adolescent population showing a predominance of mood disorders, but not behavioural disorders treated in adolescent inpatient care. A review from 1999 found that for partial

hospitalization (day patients) the most commonly treated conditions were behaviour disorders (48%), followed by affective/mood disorders (22 percent) while the average length of stay is143 days (Burns, Hoagwood, & Mrazek, 1999).

Like in this study, a comprehensive review of 34 older studies on residential treatment outcomes for adolescents, Pfeifer and Strzelecki (1990), found that age at admission and sex bore no relationship to favourable outcome. Although this study did not look at role of IQ and duration stay in recovery, Pfeifer and Strzelecki (1990), found IQ and length of stay yielded only a modest relationship to outcome. The same review found that factors associated with benefit from hospital care include: (a) higher child intelligence; (b) the level of family functioning and family involvement in treatment; (c) specific characteristics of treatment (e.g., completion of treatment program and planned discharge), and (d) the use of aftercare services.

In contrast to findings from this study which suggest that psychotic and bipolar disorders were associated with better outcomes and more positive affect despite a lower functioning at admission, the review by Pfeifer and Strzelecki (1990) suggest that prognosis was not positive for several clinical characteristics: children with a psychotic diagnosis, antisocial features with conduct disorder, and bizarre or 'primitive' symptoms. The findings from the present study might be explained by the fact that the measure assessing positive affect included not only positive feelings (i.e. feeling happy, proud, contented), but also items denoting high physiological arousal that might relate to psychotic features characteristic to megalomaniac delusions and mania (i.e. 'alert', 'enthusiastic', 'energetic'). It is also likely that cognitive functioning and awareness of feelings are impaired in young people with psychotic features this affecting their ability to report on subjective experiences.

Affect and emotional symptoms at admission

Negative affect and emotional problems including high levels of depression and anxiety are representative of the affective symptom picture of the sample. *Emotional problems* on the SDQ-E were within the borderline clinical range, while depression and anxiety mean scores were much higher than community samples scores.

Discussion: Affect and emotional symptoms in adolescent inpatients

There is little research comparing emotional symptoms including anxiety and depression in inpatient, outpatient and community samples of adolescents.

The existing evidence seems to show comparable results with findings from this study suggesting highly elevated levels of anxiety, depression and overall emotional symptoms in inpatient adolescents. A study involving children and adolescents with school refusal who were hospitalized compared to a matched group with school refusal who were treated as outpatients showed that the inpatient group had significantly more depressive disorder, a greater number of diagnoses, more severe symptoms, were more likely to reside in single-parent homes, and were more likely to have been physically abused (Borchardt, Giesler, Bernstein, & Crosby, 1994).

The overall findings on affect in this sample seem to confirm the expected high comorbidity between anxiety and depression and they also imply that mood disorders are also highly comorbid with other types of disorders suggesting a very complex clinical picture.

Emotion regulation at admission

The most problematic emotion regulation difficulty seems to be having *limited access to emotion regulation strategies*. This is consistent with findings reported in other inpatient samples and in community samples. In terms of cognitive strategies of emotion regulation, the most prevalent cognitive emotion regulation strategies in this sample (as measured by the Cognitive Emotion Regulation Questionnaire) are *self-blame*, *rumination* and *acceptance* of difficulties, whereas the least prevalent are *other-blame* and *positive refocusing*. The Difficulties with Emotion Regulation Scale total score measuring difficulties with ER was associated with most CERQ subscales, and particularly captured negative cognitive regulation strategies.

Moreover, emotion regulation difficulties were positively associated with emotional symptoms, anxiety and depression symptoms and negative affect. Although overall emotion regulation difficulties (DERS Total) did not correlate with trauma at admission, positive associations were found between trauma and specific emotion regulation

strategies such as *limited of awareness of feelings*, *rumination* and *other-blame*.

Discussion: Emotion regulation in inpatient adolescents

Overall, emotion regulation difficulties were more than two standard deviations higher on mean scores than those reported by Weinberg and Klonsky (2009) in a similarly aged community sample of adolescents, indicating substantially greater difficulties with ER compared to the community sample.

The most used cognitive emotion regulation strategies were *self-blame* (referring to thoughts of blaming yourself for what you have experienced (Anderson, Miller, Riger & Sedikides, 1994); *rumination* (referring to thinking all the time about the feelings and thoughts associated with the negative event (Nolen-Hoeksema, Parker & Larson,1994); and *acceptance* of difficult events (referring to thoughts of resigning to what has happened (Carver, Scheier & Weintraub, 1989). The least used cognitive emotion regulation strategy is *positive refocusing* referring to thinking of other, pleasant matters instead of the actual event (Endler & Parker, 1990).

Research on ER in inpatient adolescents has previously focused mainly on extreme problematic behaviour such as self-harm (Venta et al., 2012; Perez et al., 2012, Sharp et al., 2011; Adrian et al., 2009, 2011; Nixon et al., 2002; Zlotnik et al., 1997). Findings from previous research seem to suggest that awareness and understanding of own feelings and of other's behaviour and mental state play a key role in child psychopathology. Contrasting findings seem to lead to inconsistent conclusions regarding the role of acceptance of 'letting go' of difficult feelings in psychopathology. A key finding from the inpatient adolescent research seems to suggest that interpersonal relationships are significant in understanding the role of ER in the development and maintenance of mental health difficulties.

Like previous research, the present study highlights the important of rumination in psychopathology, this appearing to be a consistent finding across studies on inpatient adolescents (and also adult populations, see Aldao et al.'s review, 2010).

In addition, the findings of the present report also suggest that self-blame, non-

acceptance of difficulties and emotional responses (own feelings) and overall limited access to emotion regulation strategies are also key in maintaining emotional symptoms and difficult experiences. These findings have important implications for practice and for psychological treatment in particular that will be discussed in a later section in this chapter.

Trauma at admission

Most participants reported having experienced *trauma*, with high levels of cumulative trauma (Trauma Total). More than 85% of young people scored above 17 on the two scales of the CRIES-13, indicating a high likelihood of reaching criteria for a comorbid diagnosis of post-traumatic stress disorder (Smith et al., 2002). The types of trauma most reported are emotional trauma, being bullied, contact with Mental Health Services and being poorly or ill. The least reported traumatic experiences are of natural disasters, serious accidents and sexual abuse.

Trauma symptoms correlated strongly with anxiety symptoms measured by the SCAS, with emotional symptoms (Strength and Difficulties Questionnaire-Emotion) and with positive affect, but not with depressive symptoms measured by the Mood and Feelings Questionnaire. Trauma was associated at admission with emotion regulation difficulties such as: lack of awareness of feelings, rumination and other-blame. Strong correlations were found between trauma and PLEs at admission.

Discussion: Trauma in inpatient adolescents

Trauma reported by participants to this study was found to be much more prevalent than in a community sample of vulnerable children and adolescents assessed after a natural disaster (Chen et al., 2012). There were no studies found reporting CRIES-13 data in inpatient adolescents to be able to compare the findings of the present study.

In terms of types of trauma reported, findings of this study seem to show somewhat different results compared to previous studies. While Lipschitz, Winegar, Nicolaou, Hartnick, Wolfson and colleagues (1999) showed a higher prevalence of neglect (61%), sexual and physical abuse (37.5% and 43.7%) and emotional abuse (31%), in the present sample being bullied, having contact with Mental Health services and being

seriously ill are more prevalent than sexual abuse (lowest prevalence). Also, Koltek, Wilkes and Atkinson (1998) examined the prevalence of PTSD in a sample of 187 adolescent inpatients and found that common adolescent traumas included rape, assault, and accidents.

It is possible that, 15 years on after these studies were reported, serious abuse such as sexual abuse and neglect may no longer be the prevalent types of trauma in adolescent inpatients. However, findings are subject to reporting bias and under-reporting is likely. Results may also reflect the specialist, quaternary nature of the inpatient service, which does not take all its referrals from the local deprived inner city catchment area. Moreover, only a proportion of inpatients participated in the study. Refusal rates were around 50%, and although not unusual in an inpatient sample, it is possible that young people experiencing more severe forms of trauma chose not to participate.

While the impact of bullying has been long proved to be significant in the development and maintenance of psychopathology in general, and with psychotic symptoms in adolescence in particular (e.g. Kelleher, Harley, Lynch, Arseneault, Fitzpatrick, et al., 2008), it is important to note that participants seem to experience contact with mental health services and being unwell (although it is not clear whether illness refers to physical or mental illness) as a difficult experience. This finding might be explained by the fact that the majority of participants were at their first admission to a mental health inpatient ward and for some of these it was also the first contact with a mental health service meaning that it is likely that they and their families made a lot of effort to cope with the ongoing difficulties before the serious deterioration in mental health and overall functioning to a such extent that required hospitalization.

These findings may also illustrate the social and cultural discourse that portrays contact with mental health services and hospitalizations in particular, in negative terms. It is important to determine to what extent the participants to the present study also experienced stigma in relation to their mental health difficulties.

As Byrne (2000) suggests that stigma has become a marker for adverse experiences (i.e. shame, blame, secrecy, isolation, social exclusion, discrimination, stereotypes) and

findings from this study also show a high level of self-blame in the adolescent inpatients assessed. Byrne (2000) argues that mental illness, despite centuries of learning and the 'Decade of the Brain' ('Decade of the Brain' is a ten-year initiative of the American Library of Congress and the National Institute of Mental Health (NIH) ran from 1990 to 1999 to enhance public awareness of the benefits to be derived from brain research.), is still perceived as an indulgence, a sign of weakness. Self-stigmatisation has been described, and there are numerous personal accounts of psychiatric illness, where shame overrides even the most extreme of symptoms. In two identical UK public opinion surveys, little change was recorded over 10 years, with over 80% endorsing the statement that "most people are embarrassed by mentally ill people", and about 30% agreeing "I am embarrassed by mentally ill persons" (Huxley, 1993). The implications for treatment of these findings will be discussed later on in this chapter.

Psychotic-like experiences at admission (PLE)

Similarly, most of the sample reported *psychotic-like experiences* (85%), and of these, 91% were distressing (around a quarter of young people (aged 9-14) in the community report distressing PLEs). The highest proportion of reported PLEs at admission seems to be beliefs about being followed/spied upon and audio and visual hallucinations. Almost half of the participants also report being able to read others' thoughts or having their thoughts read by others. Having special powers is the least reported PLE in this sample.

At admission, PLE severity correlated positively with emotional symptoms and with anxiety symptoms. PLE severity did not correlate with positive or negative affect on the PANAS-C NA, or depressive symptoms. In terms of emotion regulation, PLE severity did not correlate with ER difficulties. However, PLEs were positively correlated with one specific ER strategy, namely impulse control. Strong correlations were found at admission between PLEs and trauma on both trauma measures.

Discussion: Psychotic-like experiences in adolescent inpatients

Although the high prevalence of audio and visual hallucinations in this sample was unexpected, the finding provides support for the continuum model of psychosis (van Os et al., 2009) as the majority of participants, with or without a diagnosis of a psychotic

disorder reported unusual experiences, with no differences between those with and without psychotic conditions.

In terms of the types of predominant PLEs reported by inpatient adolescents, the existing literature is scarce, however previous research shows much lower rates of distressing PLEs in community samples of 9-14 (Laurens et al., 2012).

The role of ER in emotional symptoms and trauma

ER was associated with affect and emotional symptoms, and, although trauma frequency was not associated with ER, and only at a trend level with affect, trauma symptoms, as measured by the secondary trauma measure (CRIES-13) were associated with negative affect, with a trend association with ER.

Further analyses indicated that anxiety, rather than low mood was significantly associated with trauma. Other-blame as a cognitive emotion regulation strategy was associated with trauma, while trend associations were found between trauma and rumination, impulse control and awareness of feelings. Other blame also showed an association with higher levels of positive affect and less depression. As expected, multiple associations were found between the secondary measures of affect and each ER item.

Discussion: The role of ER in emotional symptoms and trauma

Although, there is no previous research published examining the role of ER in adolescent inpatients experiencing trauma and emotional symptoms, the finding that ER plays a mediating role in the affect-trauma link is consistent with previous research from community samples. Findings from a study of a community sample of young women with eating disorders aged 20-25 suggest that deficits in emotion regulation mediate the relationship between childhood abuse and later eating disorder symptoms (Burns, Fischer, Jackson, & Harding, 2012). Similarly, Cloitre, Miranda, Stovall-McClough, Han (2005) found that emotion regulation and interpersonal problems may play an important role in functioning impairment in help-seeking women survivors of childhood abuse (aged 25-61 years old).

Further evidence on the key role of ER in trauma is provided by Shields and Cicchetti (2001) who studied bullying and victimization in a community sample of 8-12 years old and found that both bullies and victims evidenced problems with emotion regulation and that emotion dysregulation made a unique contribution toward differentiating bullies and victims from children who did not evidence bully–victim problems. These findings suggest that ER difficulties represent key risk factors for bullying and victimization in middle childhood.

Neurobiological findings in infants seem to support the links between trauma, impairments of the early development of the right brain's stress coping systems, and maladaptive mental health. Shore (2001) presents interdisciplinary data showing that traumatic attachments have a negative impact on brain development and infant mental health. The author further provides evidence on the neurobiology of infant trauma, the neuropsychology of a disorganized / disoriented attachment pattern associated with abuse and neglect, as well as on the trauma-induced impairments of a regulatory system in the orbitofrontal cortex, and the links between orbitofrontal dysfunction and a predisposition to posttraumatic stress disorders. These data also describe the neurobiology of the dissociative defense, the etiology of dissociation and body–mind psychopathology, the effects of early relational trauma on enduring right hemispheric function. Shore's findings suggest direct connections between traumatic attachment, inefficient right brain regulatory functions, and both maladaptive infant and adult mental health.

Moreover, in a theoretical paper, Paivio and Laurent (2001) argue that under-regulation and over-control of emotion are core affective disturbances stemming from child abuse. These emotion regulation problems interfere with the ability to process and resolve child abuse issues. Consistent with the attachment approach, Paivio and Laurent suggest that parental empathy is thought to play a central role in the development of emotion regulation capacities, and empathic failures in situations of abuse and neglect can profoundly impair emotional development and that therapist empathy can work toward processing and correcting these negative early learning experiences.

The role of ER in PLEs and relationships with affect and trauma

PLEs were associated with negative emotional symptoms (and especially anxiety), and strongly with trauma. No primary association with ER was found, and the single ER subscale association found in the secondary analyses did not persist once negative affect and trauma were controlled thus disconfirming the hypothesis that ER is associated with PLEs and that this association persists when negative affect and trauma are controlled. This implies that no specificity of ER was identified in relation to PLEs.

Discussion: The role of ER in PLEs and relationships with affect and trauma

Findings are consistent with previous research highlighting the role of trauma in the development of psychosis and schizophrenia in particular (Read, Os, Morrison & Ross, 2005). Read et al., (2005) suggest that symptoms considered indicative of psychosis and schizophrenia, particularly hallucinations, are at least as strongly related to childhood abuse and neglect as many other mental health problems. Recent large-scale general population studies indicate the relationship is a causal one, with a dose-response effect (Read et al., 2005).

Also, findings confirm previous research suggesting a strong association between anxiety symptoms and psychotic-like experiences such as paranoia (Freeman and Fowler, 2009). Moreover, Freeman and Fowler (2009) found that associations of trauma and paranoia can be explained by levels of anxiety even though trauma-hallucinations links were not found to be explained by the mediational variables such as anxiety symptoms.

In terms of relationships between ER and PLEs, this study did not find any ER difficulties being specific to PLEs with the exception of impulse control. The existing literature seems to offer a mixed picture of results, some suggesting that people with PLEs tend to use more suppression and less reappraisal than healthy controls (Westermann et al., 2012a,b), while other studies did not distinguish between PLE and non-PLE groups in terms of ER strategies employed (Perry et al., 2011). The findings are apparently at odds with those reported in large population based studies (e.g. Marwaha et al., 2013) where affective instability was a powerful predictor of the later development of psychotic symptoms. However, in a general population sample, there is always the difficulty of associations being strengthened by the majority of participants

not reporting any psychopathological experiences. In clinical samples, base rates are high, and particularly so for PLEs and ER in the current sample, where the majority reported PLEs with distress, and, for ER, only six participants scored within one standard deviation of the community mean, and more than half of participants scored over two standard deviations higher. Correlations therefore measure the association between degrees of severity of the two constructs, which may weaken associations. Nevertheless, the existing literature is consistent with an association of ER with psychopathology in general, a common feature of which is psychotic, or psychotic-like experiences, rather than a specific association of ER with PLEs irrespective of overall psychopathology. The specificity of ER in PLEs is not consistently supported by the evidence and the findings from this study seem to be in line with this conclusion.

The role of ER in recovery over the duration of an inpatient admission

No association of recovery in functioning with ER was found in this study even though positive change occurred, and reached significance on every emotion regulation subscale.

Discussion: The role of ER in recovery over the duration of an inpatient admission

The findings of this study show significant and positive changes in ER over the course of the admission on every dimension suggesting that ER may play an important role in recovery, albeit independently of the functional, clinician-rated recovery evident on the CGAS.

There is no previous research exploring the role of ER in recovery during an inpatient admission in adolescents. One study was found examining the role of ER skills as a target for treatment in adult inpatients (Berking, Wupperman, Reichardt, Pejic, Dippel, & Znoj, 2008). The authors found that the skills of acceptance, tolerance, and active modification of negative emotions were particularly important for improving current mental health and treatment outcome. Replacing parts of the standard CBT treatment with the emotion-regulation training enhanced the effects of the CBT treatment on skills application and on other measures of mental health. The conclusion of the study was that incorporating interventions that directly target general emotion-regulation skills may improve the effectiveness of psychotherapeutic interventions.

Changes over the duration of admission

All participants except one showed recovery over the course of their admission as measured by an overall clinician-rated measure of functioning. No change was found on other self-reported measures of emotional symptoms, positive and negative affect, depression, anxiety, psychotic-like experiences and trauma.

Emotion regulation difficulties decreased overall at discharge. More specifically, impulse control, awareness and clarity of feelings, use of regulation strategies and goal-oriented behaviour increased at discharge.

Discussion: Change over the duration of admission

The findings seem to highlight an apparent contradiction measuring positive effect of treatment (inpatient admission) at discharge by clinicians while patients themselves did not report a significant improvement. Clinicians registered a consistent improvement in the overall functioning of clients, measured by the CGAS score assessed on admission and a second on discharge.

On the other hand, the self-reporting of clients measured by the SDQ, SCAS, MFQ and PANAS-C appears to contradict this. Using the self-reported indicators of recovery, each subdivided into several categories (strengths and difficulties, as well as depression, anxiety, and positive and negative affect), clients give a detailed self-report on admission (baseline). Clients also give the same report on discharge, and while the numerical evaluation of overall symptoms showed some positive trend towards an improvement in symptoms, that trend was statistically negligible.

The findings of the present study are not fully inconsistent with findings from a comprehensive review and critique of residential treatment for adolescents published by Epstein in 2004. Epstein suggests that improvement occurs for most young people during an inpatient stay, with improvement predicted by younger age at admission, high intelligence, less severe psychopathology at admission, the absence of antisocial behaviors, a stable family or other discharge environment, and participation in aftercare services (Epstein, 2004).

The current findings raise questions about the validity of clinician and self-report ratings, the nature of change during an admission, and the best way to measure this change. The initial issue is what to make of a positive clinician-rated change, particularly when this occurs in the context of performance management and drives to demonstrate improvement. There are a number of factors supporting the validity of clinician ratings. First, these are data provided by health professionals subject to professional codes of conduct, supervisory scrutiny, and immediate peer review (CGAS scores were always made during ward rounds and were the result of a consultation process within the multidisciplinary team). Secondly, unlike the self-report data, the clinician report evaluates an overall state of functioning, and not separate symptom domains. It is entirely possible that change during inpatient admissions is at a different level, and work on the self-report areas of concern is part of a wider or later process of change. Thirdly, clinician judgment seem to be supported by the relatively low repeat treatment of clients (re- admissions): two thirds of all cases are on their first admission, and only a small number are repeating inpatient treatment. If client treatment was ineffective or aversive, a high proportion of re-referrals from other inpatient units or services and the community would be expected, and therefore it can be argued that clinician judgment corroborates with the wider data from health services and the community.

If clinician-rated data is accepted as a measure of recovery, the next question concerns whether and, if so, how self-report measures should be adjusted or recalibrated so that patients articulate the improvement observed by clinicians. In particular, findings raise the question of whether, during an inpatient admission, patients should be asked to report on different aspects of their mental wellbeing. Specifically, as ER did change substantially by self-report during the admission, ratings of self-regulation and day to day functioning may better capture the recovery process, than assessments of mood and subjective symptomatology, which may, even when improvement occurs, show a longer trajectory of change during the weeks following discharge.

From a clinical and theoretical point of view, the self-report measures target a limited number of acute indicators, potentially making up only part of a broader patient

experience within an overall program of treatment that involves medication, psychological therapy, life skills, education, social and leisure activities, and other non-specific factors. The aim of inpatient interventions may be more to enable patients, following a crisis where community living became no longer possible, to continue to live with their problems and resume their day to day existence in a way that is less damaging both for themselves and for the community. The measurement of their improvement should therefore perhaps not be so much in the acknowledgment, as the self-report data requires, of change in acute symptoms, but rather recognizing that, while the clients continue to live with acute symptoms and problems, there may be changes in life skills that are both developed and manifested in other domains. This supports clinicians aiming to measure a broad clinical picture, wider than the acute symptom picture. Common ratings between the clinical team, the young person and family members would also be helpful in this regard.

Taking this idea further, it is also possible that crisis change and longer term symptom change are actually separate processes (rather than different stages of the same process) and are influenced by substantially different factors. Epstein's (2004) review, for example, suggests that adaptation at follow-up is less strongly related to in-treatment change than to the stability of the discharge environment.

Patient outcome measures that are used routinely across CAMHS may therefore have several limitations in terms of assessing indicators of acute change. Assessments of constructs such as quality of life, confidence, and self-efficacy in dealing with symptoms and life problems may prove a relevant and helpful addition to the battery of measures used to assess routine inpatient clinical outcomes. Such measures particularly lend themselves to user-led design, and a consultation with young people about the changes they noticed themselves during the admission and outcomes that really matter to them would be a useful step to inform measure development. Such initiatives have proved successful and been welcomed by adult service users (e.g. Neil, Kilbride, Pitt, Nothard, Welford, Sellwood, & Morrison, 2009; Byrne, Davies, Morrison, 2010; Greenwood, Sweeney, Williams, Garety, Kuipers et al., 2010).

Alongside ensuring a match between the processes and outcomes of change, however,

there may also be reasons why patients' self-report is not presenting a reliable picture, that warrant consideration. Firstly, the follow-up self-report date are gathered at discharge. Discharge is likely to be a difficult time and to intensify feelings of anxiety (patients' sense of abandonment, loss of relationships with staff, returning to the situation where the crisis arose, or where circumstances remain difficult, facing transitions to a new stage of life, etc.). The potential feelings of loss and abandonment may lead to paradoxical results whereby a patient asked to self-report on discharge may be more likely to give negative ratings if treatment has been successful: good relations with professionals and other clients have been built and now have been lost.

Secondly, the disparities between clinician report and self-report might also reflect the changing mental state and ability to reflect of some clients during the course of treatment. Many patients engaging with treatment are likely to become more aware, open and articulate about their symptoms, experiences and about their treatment. Young people's ability to report symptoms may therefore in itself be a positive sign, despite the appearance of 'negative' outcomes in the discharge data. In particular, many young people are admitted in extremely adverse circumstances, as victims of trauma, abuse or neglect, and are only able to disclose the effects of this to clinicians over time. In the current study, although researchers were led by the clinical team in determining the right time to approach a young person, the team's judgment related to whether the young person could consent, and whether they would be able to sustain concentration for a sufficient period to undertake the assessments, rather than whether they wished to talk about their experiences.

Methodological factors might also account for the lack of significant improvement reported by young people. The sample was small, and treatment duration was variable. Nevertheless, inspection of mean scores does not indicate that change was occurring but simply failing to reach a criterion of clinical significance: the majority of raw symptom scores did not appear to change.

Limitations

There are six key methodological limitations to the current study. Firstly, the sample

size is small. Although adequately powered to test the main analyses, based on the best existing data, small associations may have been missed, and many significant associations would not survive Bonferroni correction. The follow-up sample was particularly small. This was due to several logistical difficulties such as: multiple sessions needed for unwell clients to complete assessment; finding the appropriate time to collect the data and avoid interference with the daily therapeutic program on the ward; avoiding collecting data in the late afternoon or evening, as some questionnaires were raising sensitive issues such as traumatic events and the experience of them; quick discharge for young people who improved rapidly or who were thought to be likely to benefit more from community treatments.

Secondly, the duration of follow-up was variable, and uncontrolled. This was to an extent deliberate as the study was in part an investigation of improvement, so measures were repeated at the point of discharge in order to maximize the potential for improvement to have occurred. However due to limited data, it was not possible to statistically control for such variability.

Thirdly, the study was not designed to identify what the drivers of change, in terms of interventions, might be. The young people may have engaged differently with different types of treatment and teasing apart what treatments are effective for whom would require follow-up of a much larger sample over a considerably longer time period. Furthermore, ethical and practical considerations make designing and conducting studies that compare effectiveness of different types of inpatient treatment difficult (Epstein, 2004). The ethical considerations involved in random assignment to different treatments are obvious (Epstein, 2004): it is not ethical to deny a child in need of residential treatment a placement for research purposes without providing an adequate alternative. This consideration complicates between-program and across-program designs. The practical considerations are significant: residential institutions typically do not have enough available resources to conduct studies of the types previously described. Although collaboration between residential programs and across day/community-based and residential programs would allow for stronger designs, monetary and personnel limitations complicate such collaborations. The same limitations complicate establishment of ‘‘wards’’ that offer different treatments within

the same residential program.

Fourthly, although participants were diagnostically and socio-culturally representative of the group of inpatients routinely utilizing the service, ethnic and cultural variation was limited, and certainly differed from the ethnic mix of the local area (ONS, 2011). Particularly given the suggestion of ER differences according to ethnicity, a larger and more ethnically diverse sample would have enabled a more thorough investigation of demographic variations in ER. Although the age range of inpatients is skewed towards older adolescents, this bias was pronounced in the current study. Participants tended to be in their later teens. Findings cannot therefore be considered to be representative of the full period of adolescence, but rather, are characteristic of a late mid-adolescence group.

Fifth, although 'trauma' is referred to throughout this thesis, the primary and secondary measures of trauma covered different aspects, the primary measure being frequency of life events and the secondary, a measure of post-traumatic stress. A finer grained analysis of the impact of these different aspects should be a focus of future research.

Finally, many of the study measures relied upon self-report by a group of acutely unwell young people, in a context that they may have wished to influence in a range of ways (e.g. to prolong their stay; to reduce their stay; to avoid the emotional and practical consequences of disclosure of events). While the last of these applies to all similar self-report research, the first two are specific to an inpatient setting and may lead to particularly unreliable self-report.

Recommendations for practice

Several recommendations for practice and treatment arise from the current study. Firstly, addressing emotion regulation difficulties in a targeted fashion during the inpatient stay is likely to be helpful. In particular, findings indicate that exploring and addressing self-blame and feelings of shame; increasing awareness and understanding of feelings; and building capacity to accept difficult feelings and difficult events are likely to effect change. Rumination emerges as a negative maintaining factor of difficulties, so processing work should be carefully framed to avoid increasing

rumination. Developing positive emotion regulation skills such as positive refocusing and reappraisal of difficult events, while focusing on developing, planning, and acting towards personal goals and engaging in goal-oriented behavior should also be emphasized, alongside the promotion of impulse control.

Previous studies suggest that incorporating work to increase positive affect will enhance these strategies: a more explicit and structured focus on positive affect by increasing awareness of positive feelings and on creating opportunities to experience positive affect should be a standard part of the inpatient milieu. The potential for ethnic variation in ER should inform this work: although in the current study, diversity was lower than in the general population, there was a suggestion that ER differed by ethnic group, that may require adaptations to therapy.

Secondly, rates of PLEs were high: much higher than the numbers of young people actively offered cognitive therapy for such experiences, suggesting that prior to being explicitly asked by questionnaire, young people had not reported these experiences. Although some degree of non-significant improvement in PLEs was observed over the course of the admission, the majority persisted, increasing young people's vulnerability to future psychotic illness. Routine screening for PLEs and a program of normalizing and coping-based cognitive behavioural interventions should help to reduce distress, in line with National Institute of Health and Care Excellence guidance (NICE, 2013).

Thirdly, rates of trauma and post-traumatic symptoms were high. Sensitively working with traumatic experiences and trauma-related symptoms and particularly being continually aware of the potential traumatizing and stigmatizing impact of the inpatient admission itself would be indicated for the majority of young people. Bullying was very common: interventions to promote individual resilience to this, alongside school-based/societal interventions to reduce the frequency of bullying would be likely to have a positive impact. A lot of these interventions already available in adolescent inpatient units could be further tailored so that they respond to the individual needs of each young person during their admission period.

Further research

The current findings open up a number of areas for closer investigation. Firstly, a more detailed consideration of positive affect, particularly its differentiation from general arousal, is warranted. While the overall relationship between ER difficulties and negative affect and emotional symptoms was found to be significant, the relationship between positive affect and specific ER was not so, even though positive affect and other-blame seemed to be associated with less depression in this sample. As some of the items measured by the PANAS-C positive referred to experiences such as being 'alert', or 'energetic', controlling for arousal should help to elucidate specific effects of ER. Consideration of arousal in the context of mania or grandiosity is important in an inpatient sample and may require a different approach: Clark and Watson (1991) proposed a tripartite model of anxiety and depression that included a dimension of physiological arousal, with hyperarousal considered to be specific to anxiety and (as they conceptualized), its reverse, anhedonia specific to depression. Disorders of positive affect do not fit well into such a model.

The role of ethnicity and cultural factors in ER difficulties may constitute an important area for future research, as findings from this study suggest that BME young people report significantly less ER difficulty compared with White British young people. Few clinical or epidemiologic studies have examined relationships between race-ethnicity and specific personality disorders in which emotion regulation difficulties are central to the clinical picture (Grant, Chou, Goldstein, Boji & Huang, 2008). Reporting on a large epidemiological survey carried out in the USA, Grant and colleagues found that ethnic minorities had differential risk of BPD which raises questions regarding the influence of cultural experiences, including acculturation, on personality psychopathology. Whether culturally specific experiences protect against or increase vulnerability to BPD, or whether DSM-IV PD categories are culturally uninformed, are important questions for future clinical and epidemiologic research (Grant et al., 2008).

Risky and life-threatening behaviours inherently characterize the inpatient adolescent population since hospitalization tends to be considered only as a last resort to contain problematic behaviour and regain a sufficient level of functioning. Therefore, a final area worthy of further exploration is the relationship between ER difficulties and

specific behaviours such as self-harm and other suicidal or non-suicidal risky behaviours (sexualized behaviour, delusional ideation induced risk behaviours), and other challenging behaviours (such as aggression).

Conclusions

This is the first study to investigate relationships between emotion regulation, affect, PLE and trauma in inpatient adolescents, and to consider the impact of emotion regulation on change over time in this sample.

The results show that difficulties with emotion regulation are associated with more negative affect and emotional symptoms including depression, anxiety, low overall positive affect and high negative affect. While self-blame seems to be significantly associated with difficulties, in contrast, other-blame is associated with less depression and higher levels of positive affect.

Associations with trauma and psychotic-like experiences were not as pronounced as expected in the current study, given the substantial associations reported in previous literature. However, interesting specific subscale associations were found. Rumination, limited awareness of feelings and difficulties with impulse control were associated with traumatic experiences, and limited impulse control with psychotic-like experiences. Confirming previous findings, PLEs were strongly associated with negative affect and trauma.

Furthermore, the study confirms previous findings that inpatient admissions are effective in the overall improvement of functioning in this population. The low rates of re-admission strengthen evidence of this finding. The study adds to this literature by identifying emotion regulation as a potentially key process of change occurring during an admission, albeit independently of recovery.

Clinical symptoms remain broadly unchanged at discharge, suggesting that young people remain at risk of future mental ill health. Follow-up beyond the inpatient admission would be a useful area of research to better understand the mechanisms of persistence of symptomatology in the recovery period following an inpatient crisis.

Ethnic variation and the role of positive affect are also key areas for further development.

The study highlights a number of areas for improving clinical practice: targeted emotion regulation interventions; trauma work; and normalizing interventions for psychotic-like experiences are often part of an individualized inpatient intervention program. The prevalence of these difficulties suggests that the interventions could be offered universally and routinely where resources permit. A manualised and readily implementable intervention would address the resource implications. Explicitly targeting these symptoms may result in improved symptomatic remission at discharge, which, in turn, would suggest reduced risks of future mental ill-health for this vulnerable group of young people.

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Appendix 2.2

Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

Your Name ..... Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
I try to be nice to other people. I care about their feelings	☐	☐	☐
I am restless, I cannot stay still for long	☐	☐	☐
I get a lot of headaches, stomach-aches or sickness	☐	☐	☐
I usually share with others (food, games, pens etc.)	☐	☐	☐
I get very angry and often lose my temper	☐	☐	☐
I am usually on my own. I generally play alone or keep to myself	☐	☐	☐
I usually do as I am told	☐	☐	☐
I worry a lot	☐	☐	☐
I am helpful if someone is hurt, upset or feeling ill	☐	☐	☐
I am constantly fidgeting or squirming	☐	☐	☐
I have one good friend or more	☐	☐	☐
I fight a lot. I can make other people do what I want	☐	☐	☐
I am often unhappy, down-hearted or tearful	☐	☐	☐
Other people my age generally like me	☐	☐	☐
I am easily distracted, I find it difficult to concentrate	☐	☐	☐
I am nervous in new situations. I easily lose confidence	☐	☐	☐
I am kind to younger children	☐	☐	☐
I am often accused of lying or cheating	☐	☐	☐
Other children or young people pick on me or bully me	☐	☐	☐
I often volunteer to help others (parents, teachers, children)	☐	☐	☐
I think before I do things	☐	☐	☐
I take things that are not mine from home, school or elsewhere	☐	☐	☐
I get on better with adults than with people my own age	☐	☐	☐
I have many fears, I am easily scared	☐	☐	☐
I finish the work I'm doing. My attention is good	☐	☐	☐

Your signature ..... Today's date .....

Thank you very much for your help

Appendix 2.2

Difficulties in Emotion Regulation Scale (DERS, Gratz and Roemer 2004)

1. I am clear about my feelings.
2. I pay attention to how I feel.
3. I experience my emotions as overwhelming & out of control.
4. I have no idea how I am feeling.
5. I have difficulty making sense out of my feelings.
6. I am attentive to my feelings.
7. I know exactly how I am feeling.
8. I care about what I am feeling..
9. I am confused about how I am feeling.
10. When I'm upset,, I acknowledge my emotions.
11. When I'm upset I become angry at myself for feeling that way.
12. When I'm upset, I become embarrassed.
13. When I'm upset, I have difficulty getting work done.
14. When I'm upset, I become out of control.
15. When I'm upset I believe I'll remain that way for a long time.
16. When I'm upset I believe that I'll end up very depressed.
17. When I'm upset , I believe my emotions are valid and important.
18. When I'm upset, I have difficulty focusing on other things.
19. When I'm upset, I feel out of control.
20. When I'm upset, I can still get things done.
21. When I'm upset, I feel ashamed with myself.
22. When I'm upset, I know that I can find a way to feel better.
23. When I'm upset, I feel like I am weak.
24. When I'm upset, I feel I can remain in control over my behaviour.
25. When I'm upset, I feel guilty.
26. When I'm upset, I have difficulty concentrating.
27. When I'm upset, I have difficulty controlling my behaviour.
28. When I'm upset I believe there is nothing I can do to feel better.
29. When I'm upset, I become irritated with myself.
30. When I'm upset, I start to feel very bad about myself.
31. When I'm upset I believe that wallowing in it is all I can do.
32. When I'm upset, I lose control over my behaviour.
33. When I'm upset, I have difficulty thinking about anything else
34. I take time to figure out what I am really feeling.
35. When I'm upset, it takes me along time to feel better.
36. When I'm upset, my emotions feel overwhelming.

Appendix 2.2

The CERQ-C The Cognitive Emotion Regulation Questionnaire (Garnefski Kraaij & Spinhoven, 2001)

How do you cope with events? *Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her own way. By the following questions you are asked to indicate what you generally think, when you experience negative or unpleasant events.*

	(almost) never	**some - times**	**regu- larly**	**often**	**(almost) always**
1. 1 feel that I am the one to blame for it	1	2	3	4	5
2. I think that I have to accept that this has happened	1	2	3	4	5
3. I often think about how I feel about what I have experienced	1	2	3	4	5
4. I think of nicer things than what I have experienced	1	2	3	4	5
5. I think of what I can do best	1	2	3	4	5
6. I think I can learn something from the situation	1	2	3	4	5
7. I think that it all could have been much worse	1	2	3	4	5
8. I often think that what I have experienced is much worse than what others have experienced	1	2	3	4	5
9. I feel that others are to blame for it	1	2	3	4	5
10. I feel that I am the one who is responsible for what has happened	1	2	3	4	5
11. I think that I have to accept the situation	1	2	3	4	5
12. I am preoccupied with what I think and feel about what I have experienced	1	2	3	4	5
13. I think of pleasant things that have nothing to do with it	1	2	3	4	5
14. I think about how I can best cope with the situation	1	2	3	4	5
15. I think that I can become a stronger person as a result of what has happened	1	2	3	4	5
16. I think that other people go through much worse experiences	1	2	3	4	5
17. I keep thinking about how terrible it is what I have experienced	1	2	3	4	5
18. I feel that others are responsible for what has happened	1	2	3	4	5
19. I think about the mistakes I have made in this matter	1	2	3	4	5
20. I think that I cannot change anything about it	1	2	3	4	5
21. I want to understand why I feel the way I do about what I have experienced	1	2	3	4	5
22. I think of something nice instead of what has happened	1	2	3	4	5
23. I think about how to change the situation	1	2	3	4	5
24. I think that the situation also has its positive sides	1	2	3	4	5
25. I think that it hasn't been too bad compared to other things	1	2	3	4	5
26. I often think that what I have experienced is the worst that can happen to a person	1	2	3	4	5
27. I think about the mistakes others have made in this matter	1	2	3	4	5
28. I think that basically the cause must lie within myself	1	2	3	4	5
29. I think that I must learn to live with it	1	2	3	4	5
30. I dwell upon the feelings the situation has evoked in me	1	2	3	4	5
31. I think about pleasant experiences	1	2	3	4	5
32. I think about a plan of what I can do best	1	2	3	4	5
33. I look for the positive sides to the matter	1	2	3	4	5
34. I tell myself that there are worse things in life	1	2	3	4	5
35. I continually think how horrible the situation has been	1	2	3	4	5
36. I feel that basically the cause lies with others	1	2	3	4	5

Appendix 2.2

MFQ - The Mood and Feelings Questionnaire (MFQ-C; Costello and Angold 1988)

Question	True	Sometimes	Not True
I felt miserable or unhappy.			
I didn't enjoy anything at all.			
I was less hungry than usual.			
I ate more than usual.			
I felt so tired I just sat around and did nothing.			
I was moving and walking more slowly than usual.			
I was very restless.			
I felt I was no good anymore.			
I blamed myself for things that weren't my fault.			
It was hard for me to make up my mind.			
I felt grumpy and cross with my parents.			
I felt like talking less than usual.			
I was talking more slowly than usual.			
I cried a lot.			
I thought there was nothing good for me in the future.			
I thought that life wasn't worth living.			
I thought about death and dying.			
I thought my family would be better off without me.			
I thought about killing myself.			
I didn't want to see my friends.			
I found it hard to think properly or concentrate.			
I thought bad things would happen to me.			
I hated myself.			
I felt I was a bad person.			
I thought I looked ugly.			
I worried about aches and pains.			
I felt lonely.			
I thought nobody really loved me.			
I didn't have any fun at school.			
I thought I could never be as good as other kids.			
I did everything wrong.			
I didn't sleep as well as I usually sleep.			
I slept a lot more than usual.			

Appendix 2.2

Revised Child Impact of Event Scale, CRIES-13

Below is a list of comments made by people after stressful life Event. Please tick each item showing how frequently these comments were true for you *during the past seven days*. If they did not occur during that time please tick the 'not at all' box.

		Not at all	Rarely	Some-times	Often
1.	Do you think about it even when you don't mean to?	[ ]	[ ]	[ ]	[ ]
2.	Do you try to remove it from your memory	[ ]	[ ]	[ ]	[ ]
3.	Do you have difficulties paying attention or concentrating	[ ]	[ ]	[ ]	[ ]
4.	Do you have waves of strong feelings about it	[ ]	[ ]	[ ]	[ ]
5.	Do you startle more easily or feel more nervous than you did before it happened?	[ ]	[ ]	[ ]	[ ]
6.	Do you stay away from reminders of it (e.g. places or situations)	[ ]	[ ]	[ ]	[ ]
7.	Do you try not talk about it	[ ]	[ ]	[ ]	[ ]
8.	Do pictures about it pop into your mind?	[ ]	[ ]	[ ]	[ ]
9.	Do other things keep making you think about it?	[ ]	[ ]	[ ]	[ ]
10.	Do you try not to think about it?	[ ]	[ ]	[ ]	[ ]
11.	Do you get easily irritable	[ ]	[ ]	[ ]	[ ]
12.	Are you alert and watchful even when there is no obvious need to be?	[ ]	[ ]	[ ]	[ ]
13.	Do you have sleep problems?	[ ]	[ ]	[ ]	[ ]

Appendix 2.2

The Positive and Negative Affectivity Scale – Child version)

PANAS-C, Laurent et al., 1999). It was developed to measure negative and positive affectivity within this model and is used in practice to help distinguish between anxiety and depression.

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate how much you have felt this way during the past few weeks.

	Not much or not at all	A little	Some	Quite a bit	A lot
Interested	1	2	3	4	5
Sad	1	2	3	4	5
Frightened	1	2	3	4	5
Alert	1	2	3	4	5
Excited	1	2	3	4	5
Ashamed	1	2	3	4	5
Upset	1	2	3	4	5
Happy	1	2	3	4	5
Strong	1	2	3	4	5
Nervous	1	2	3	4	5
Guilty	1	2	3	4	5
Energetic	1	2	3	4	5
Scared	1	2	3	4	5
Calm	1	2	3	4	5
Miserable	1	2	3	4	5
Jittery	1	2	3	4	5
Cheerful	1	2	3	4	5
Active	1	2	3	4	5
Proud	1	2	3	4	5
Afraid	1	2	3	4	5
Joyful	1	2	3	4	5
Lonely	1	2	3	4	5
Mad	1	2	3	4	5
Fearless	1	2	3	4	5
Disgusted	1	2	3	4	5
Delighted	1	2	3	4	5
Blue	1	2	3	4	5
Daring	1	2	3	4	5
Gloomy	1	2	3	4	5
Lively	1	2	3	4	5

Appendix 2.2

Unusual Experiences Questionnaire. *Laurens et al., 2007, Child version.* This scale measures frequency, associated distress and impact on the child's life.

Unusual experiences questionnaire (PLE, Laurens et al 2007) Child version				
1. Some people believe that their thoughts can be read. Have other people ever read your thoughts?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
2. Have you ever believed that you were being sent special messages through the television?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
3. Have you ever thought that you were being followed or spied upon?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
4. Have you ever heard voices that other people could not hear?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
5. Have you ever felt that you were under the control of some special power?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
6. Have you ever known what another person was thinking even though that person wasn't speaking?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
7. Have you ever felt as though your body had been changed in some way that you could not understand?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
8. Do you have any special powers that other people don't have?		**Not true**	**Somewhat true**	**Certainly true**
If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
9. Have you ever seen something or someone that other people could not see?		**Not true**	**Somewhat true**	**Certainly true**

If true, how often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal
10. If you have not had any of these experiences in the last 2 weeks, have you had any of them in the last year?		**Not true**	**Somewhat true**	**Certainly true**

Spence Children's Anxiety Scale

Please put a circle around the word that shows how often each of these things happen to you. There are no right or wrong answers.

Question	Never	Sometimes	Often	Always
I worry about things	Never	Sometimes	Often	Always
I am scared of the dark	Never	Sometimes	Often	Always
When I have a problem, I get a funny feeling in my stomach	Never	Sometimes	Often	Always
I feel afraid	Never	Sometimes	Often	Always
I would feel afraid of bring on my own at home	Never	Sometimes	Often	Always
I feel scared when I have to take a test	Never	Sometimes	Often	Always
I feel afraid if I have to use public toilets or bathrooms	Never	Sometimes	Often	Always
I worry about being away from my parents	Never	Sometimes	Often	Always
I feel afraid that I will make a fool of myself in front of people	Never	Sometimes	Often	Always
I worry that I will do badly at my school work	Never	Sometimes	Often	Always
I am popular amongst other kids my own age	Never	Sometimes	Often	Always
I worry that something awful will happen to someone in my family	Never	Sometimes	Often	Always
I suddenly feel as if I can't breather when there is no reason for this	Never	Sometimes	Often	Always
I have to keep checking that I have done things right (like the switch is off or the door is locked)	Never	Sometimes	Often	Always
I feel scared if I have to sleep on my own	Never	Sometimes	Often	Always
I have trouble going to school in the mornings because I feel nervous or afraid	Never	Sometimes	Often	Always
I am good at sports	Never	Sometimes	Often	Always
I am scared of dogs	Never	Sometimes	Often	Always
I can't seem to get bad or silly thoughts out of my head	Never	Sometimes	Often	Always
When I have a problem, my heart beats really fast	Never	Sometimes	Often	Always
I suddenly start to tremble or shake when there is no reason for this	Never	Sometimes	Often	Always
I worry that something bad will happen to me	Never	Sometimes	Often	Always
I am scared of going to the doctors or dentists	Never	Sometimes	Often	Always
When I have a problem, I feel shaky	Never	Sometimes	Often	Always
I am scared of being in high places or lifts	Never	Sometimes	Often	Always

(elevators)				
I am a good person	Never	Sometimes	Often	Always
I gave to think of special thoughts to stop bad things from happening (like numbers or words)	Never	Sometimes	Often	Always
I feel scared if I have to travel in the car, or on a bus or train	Never	Sometimes	Often	Always
I worry what other people think of me	Never	Sometimes	Often	Always
I am afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds)	Never	Sometimes	Often	Always
I feel happy	Never	Sometimes	Often	Always
All of a sudden I feel really scared foor no reason at all	Never	Sometimes	Often	Always
I am scared of insects or spiders	Never	Sometimes	Often	Always
I suddenly become dizzy or faint when there is no reason for this	Never	Sometimes	Often	Always
I feel afraid if I have to talk in front of my class	Never	Sometimes	Often	Always
My heart suddenly starts to beat too quickly or no reason	Never	Sometimes	Often	Always
I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	Never	Sometimes	Often	Always
I like myself	Never	Sometimes	Often	Always
I am afraid of being in small closed spaces, like tunnels or small rooms	Never	Sometimes	Often	Always
I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	Never	Sometimes	Often	Always
I get bothered by bad or silly thoughts or pictures in my mind	Never	Sometimes	Often	Always
I have to do some things in just the right way to stop bad things happening	Never	Sometimes	Often	Always
I am proud of my school work	Never	Sometimes	Often	Always
I would feel scared if I had to stay away from home overnight	Never	Sometimes	Often	Always
Is there something you are really afraid of?	YES		NO	
Please write down what it is				
How often are you afraid of this thing?	Never	Sometimes	Often	Always

Appendix 2.2

Difficult Experiences

In the next part of the study, we will ask you about any difficult experiences you may have happened to you. *(Show checklist. At discharge, remind the participant of the checklist and ask if anything new has happened. If yes, complete again for the new events ONLY, and reassess what the main event is. If there is a new main event, complete section 2 and remaining measures for that event. If not, remind of main event and complete remaining measures from 2g onwards).*

We are asking these questions as it is common for young people to have difficult experiences, almost three quarters of young people have had at least one. 'Difficult experiences' may be something that happens just once like seeing someone close to you dying, being attacked or being involved in a road traffic accident. They may also be something that carries on happening like violence at home, bullying, being hurt or seeing somebody else being seriously hurt in any other way. The difficult experiences can involve you being hurt physically, like being hit or shoved; they can be sexual, like somebody touching you or doing something else you may not want; or emotional, to do with your feelings being hurt.

Difficult experiences may not have any lasting effects, although it is common for most people to be affected for a while as they cope with what has happened. Often, people may continue to find it difficult to put what has happened behind them. Sometimes, things can feel OK immediately after the difficult experience but can get worse later. Problems can come and go or last a long time.

Some of the questions are personal so only answer if you want to. We won't ask you to give us lots of details, or even to say what the event was if you don't want to. If you are OK to answer, we will ask you to tick a box to say whether different difficult experiences have happened to you, how many times, how old you were, whether you were harmed or feared you might be seriously harmed, and how you feel about it now. You can say what the event was if you want to, but you do not have to.

We will let your care team know about any difficult experiences you tell us, so that they can support you. The staff on the ward will decide with you who else should be involved and how. This could include your family or carers, social services or the Police. If you tell us about you or someone else being hurt, the staff on the ward will need to involve other people to try to make sure you and they are safe.

Appendix 2.2

Trauma Checklist

1. Questions about any difficult experiences you may have had.

a) Below is a list of difficult experiences that may have happened to you. For each one, please could you say whether or not it happened, and if it happened only once or more than once.

Type of Trauma	No	Happened only once	Happened more than once
Illness or being very poorly or sick			
Being in a serious accident			
Being in a natural disaster like an earthquake or tidal wave			
Other people hurting me in some way physically			
Other people hurting me in some way sexually			
Other people hurting me in some way emotionally			
Seeing somebody else seriously hurt or killed			
Being bullied			
Contact with mental health services that was scary or threatening (like coming into hospital, reactions of family, friends or staff)			
Other problems or experiences that led to you coming into hospital that were scary or threatening (like hearing voices, seeing unusual things, thinking someone or something was out to harm you).			

b) Is there anything else that you would like me to pass on to your care team about any difficult experiences that have happened to you?
REMEMBER, you don't have to tell us anything else – only say if you want to, although people often find it helpful to talk about what has happened. Whatever you tell us, we will pass it on to one of the staff on the ward who is working with you so that they can help you.

Appendix 2.2

Revised Child Impact of Event Scale, CRIES-13

Below is a list of comments made by people after stressful life Event. Please tick each item showing how frequently these comments were true for you *during the past seven days*. If they did not occur during that time please tick the 'not at all' box.

		Not at all	Rarely	Some-times	Often
1.	Do you think about it even when you don't mean to?	[ ]	[ ]	[ ]	[ ]
2.	Do you try to remove it from your memory	[ ]	[ ]	[ ]	[ ]
3.	Do you have difficulties paying attention or concentrating	[ ]	[ ]	[ ]	[ ]
4.	Do you have waves of strong feelings about it	[ ]	[ ]	[ ]	[ ]
5.	Do you startle more easily or feel more nervous than you did before it happened?	[ ]	[ ]	[ ]	[ ]
6.	Do you stay away from reminders of it (e.g. places or situations)	[ ]	[ ]	[ ]	[ ]
7.	Do you try not talk about it	[ ]	[ ]	[ ]	[ ]
8.	Do pictures about it pop into your mind?	[ ]	[ ]	[ ]	[ ]
9.	Do other things keep making you think about it?	[ ]	[ ]	[ ]	[ ]
10.	Do you try not to think about it?	[ ]	[ ]	[ ]	[ ]
11.	Do you get easily irritable	[ ]	[ ]	[ ]	[ ]
12.	Are you alert and watchful even when there is no obvious need to be?	[ ]	[ ]	[ ]	[ ]
13.	Do you have sleep problems?	[ ]	[ ]	[ ]	[ ]

Appendix 2.2

Word reading

********NOT ADMINISTERED AT DISCHARGE*******

Say: 'I'm going to ask you to read some words from this card'. Give card to participant or put on table. Either point to the words to guide or allow them to read themselves. Mark on the copy below, using dots and dashes, which words are read correctly and which not. Offer the participant encouragement and praise, do not correct, coach or tell them whether they are right or wrong. You can say explicitly that you are not allowed to say this.

to	is	up	he	at
for	my	sun	one	of

big	some	his	or	an
went	boys	that	girl	water

just	day	wet	pot	things
no	told	love	now	sad

nurse	carry	quickly	village	scramble
journey	terror	return	twisted	shelves

beware	explorer	known	projecting	tongue
serious	domineer	obtain	belief	luncheon

emergency	events	steadiness	nourishment	fringe
formulate	scarcely	universal	commenced	overwhelmed

circumstances	destiny	urge	labourers	exhausted
trudging	refrigerator	melodrama	encyclopaedia	apprehend

motionless	ultimate	atmosphere	reputation	binocular
economy	theory	humanity	philosopher	contemptuous

autobiography	excessively	champagne	terminology	perambulating
efficiency	unique	perpetual	mercenary	glycerine

influential	atrocious	fatigue	exorbitant	physician
microscopical	contagion	renown	hypocritical	fallacious

phlegmatic	melancholy	palpable	eccentricity	constitutionally
alienate	phthisis	poignancy	ingratiating	subtlety

BURT: Number of Words Read

Appendix 2.6

Information Sheet for Young People
V3 2nd April 2013

ISIS Study: Inpatient Stay Improvement Study

What is this about? We are asking if you want to be part of a project to find out how things change for teenagers while they are in hospital, and especially about unusual or difficult experiences that teenagers may have and how they cope with them.

Who are you? What do you do? We work with children, teenagers and adults who are feeling upset or having problems and talk to them to find out what is upsetting them, then we help them find new ways to handle it.

What are 'unusual experiences'? Lots of children, teenagers and adults have these, and often they are not upsetting at all, but sometimes they can be. They are things like:

- Hearing or seeing things that other people can't
- Feeling like something weird is going on that other people don't understand
- Feeling like you are being watched or followed

What are 'difficult experiences'? Lots of children, teenagers and adults have these and they are often very upsetting. They are things like:

- Being hurt or mistreated
- Being in an accident
- Being bullied

Why are you asking me? We are asking all young people who come to stay on the ward to take part in this project.

What if I say yes? First, we will ask you some questions. This is to find out more about what kinds of problems you are having and how you are managing them.

What happens next? For most young people we will just ask you to answer some of the questions again when you are ready to leave hospital to see if anything has changed following your stay on the ward. If you say in the questionnaires that you have unusual and difficult experiences, we will ask you if you want to talk more about these and try out some strategies to deal with these experiences.

What if I say yes? You will meet with someone who will talk to you about what has been happening and ways to help. You will have up to 6 meetings on the ward with one

of the researchers.

Can I say no? Yes, you can. It is up to you whether you join in. If you don't want to that is fine – no-one will mind and it won't change anything on the ward. Even if you say yes, you can still change your mind whenever you want and you don't need to tell us why.

Who will know about this? We usually tell the staff who are looking after you on the ward what you have told us. Apart from this, the things you tell us are private, but the ward staff will tell other people who are there to help if they are worried about whether you or someone else is safe. This could include your family or carers, social services or the Police. Your care team will decide with you who to involve and how to try to make sure you and they are safe.

Can I find out more? Yes. Ask your parents or carer. We have given them a longer sheet like this one that you can read if you want.
If they agree, we can tell you more about joining in on the phone, or we can meet you to tell you more. You can meet us on your own or with your family – it is up to you and your parent or carer.
Thanks for reading the sheet.

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Appendix 2.6

Information Sheet for Parents/Carers
Version 4 – 02/04/13

ISIS Study: Inpatient Stay Improvement Study

We are inviting you and your child to take part in a research project.

You should only take part if you want to.

If you do not want to take part, this will not affect the usual care or services that you or your child receive in any way.

Before you decide whether you want to take part, it is important for you to understand why the research is being done and what it will involve.

Please take time to read the following information carefully. One of our team will go through the information sheet with you and answer any questions you have. This should take about 15 minutes. Talk to other people about the project if you want to.

Part 1 tells you the purpose of this project and what will happen to you if you take part. Part 2 gives you more detailed information about how the project will be carried out. Please ask us if there is anything that is not clear or if you would like more information.

Contact details: Anca Alba and Rosanna Philpott -0207 848 0223/4

REC Reference Number: 12/LO/1984

You will be given a copy of this information sheet
Part 1

What is the purpose of the project? We want to find out how things change for teenagers while they are in hospital. We also want to find out more about the kind of unusual and / or difficult experiences young people may have, how they handle them, and what extra help they might need to deal with them.

We have put together some questionnaires which ask about different experiences and what young people do to cope with them. We will ask all young people admitted to the ward to fill in the questionnaires and then ask them again when they are ready to leave the ward to see if this has changed in any way.

For all of the young people we speak to who have had unusual and difficult experiences, we will ask if they would like to take part in the second part of the study.

For this part, we will give the young person a pack of information about ways of understanding and coping with their experiences and some strategies to try out. We will

ask them whether they found the pack helpful. Based on what young people tell us about their experiences, about the pack, and what helps them, we will develop the pack further and work with them, alongside their care team on the ward, to try to find the most helpful strategies that work best.

What do you mean by 'unusual experiences'? Lots of people have experiences which can seem unusual to others. For example, hearing voices that other people cannot hear, seeing, feeling or smelling things that other people cannot, or finding that things around them look somehow odd or different. These experiences are much more common than most people think and often do not cause any problems for the people experiencing them. They might even be enjoyable. However, sometimes these experiences can be upsetting or worrying to the person who has them, or can stop the person doing what they normally do. This in turn can interfere with school or work, friendships and family relationships.

What do you mean by 'difficult experiences'? Almost three quarters of young people have had at least one 'difficult experience'. 'Difficult experiences' may have been a one-off event like seeing someone close dying, being assaulted or being involved in a road traffic accident. It may also be something that carries on happening such as violence in the home, bullying, being involved in gang-related activities, being hurt or seeing somebody else being seriously hurt in any other way. These experiences may not have any lasting effects, but often, afterwards, people may feel like the event is happening again, or feel very easily upset and not know how to handle it, or feel afraid to go near any reminder of the event, or sometimes even to think about it. Sometimes unusual experiences can be related to these kinds of events.

Why has my child been asked to take part? We are asking all young people who have been admitted to the ward to complete some questionnaires which ask about unusual and difficult experiences and how they cope with them. For the second part of the study we will ask the young people who reported unusual or difficult experiences whether they would like to try out the pack and then tell us what they thought about it, how relevant it was for their experiences, and how we could improve it.

What will my child be asked to do?

Stage 1: If your child would like to take part in the study, you will first need to sign the form at the end of this sheet, to say that you are happy for them to go ahead. In the first stage of the study, your child will complete the some questionnaires. These will take about an hour to complete and one of the researchers will be there to help them if they request this.

Stage 2: In the second stage of the study, young people will be offered the information pack, and asked if they would like to just give some feedback on the pack, or to work through the pack with one of the researchers. This will take place on the ward over up to 6 meetings of up to 45 minutes. Based on what these young people tell us about their experiences, the pack, and what is helpful, we will develop the pack further.

Your child will be asked to complete some of the questionnaires again when they are ready to leave hospital. This is to find out if there have been any positive changes from your child being on the ward. If your child looked at the pack then they will be asked

again how they found it and any changes they would suggest for the future.

Your child will be given a £5 gift voucher as a thank-you for taking part in the project.

Will my and my child's taking part in the study be kept confidential? We work closely with your child's clinical team and the information your child gives us will usually be shared with the clinical team as it may help them to provide care for your child. The researcher will note this down on the team's notes system, where they will also note that your child is taking part in the study and when they meet with them. If you or child tell us anything about someone being hurt or not safe, we will have to tell other people who are there to help with these kinds of situations. More details are included in Part 2.

How will the information we give you be kept? All the answers your child gives to the questionnaires and activities will be kept on paper and as an electronic file. Your child's name will be kept separately, with the number, on paper, so that we can identify their questionnaires in the future if we need to (for example, if you decide you no longer want them to be part of the study). We will only identify your child's questionnaires for a reason like this. Your child's details will be kept for up to 12 years, and then will be confidentially destroyed. We will keep a completely anonymous copy of the electronic file indefinitely, from which your child will not be able to be identified at all. At the very end of the study, once we have seen a number of children, you and your child will be able to have a summary of the results, if you would like.

Is there any risk from taking part? We do not think that this study will be harmful in any way. We want it to be helpful and the questionnaires and the pack have all been designed for children and have been approved by researchers who have many years experience of working with children. However if your child is distressed in any way by taking part, the therapists working on the study are qualified to deal with this sensitively and appropriately. If this happens, please talk to the researcher, or to one of the therapists or staff on the ward.

Are there any benefits of taking part? We hope to find out more about how difficult and unusual experiences are related and how young people cope with them so we can help young people to develop positive coping strategies. Children also sometimes find completing the questionnaires interesting and helpful.

Do I have to take part?

It is up to you and your child to decide whether or not to take part in this study. If your child does decide to take part they are still free to stop at any time and without giving any reasons. This will not affect any other help or support that your child will be offered.

What happens when the project stops?

We will ask you and your child if you would be willing to be contacted regarding future projects, and if you would, we will keep your name and contact details. You will be able to ask us not to contact you at any time, and this will not affect you in any other way.

This completes Part 1 of the Information Sheet.

If the information in Part 1 has interested you and you are thinking about taking part, please continue to read the additional information in Part 2 before making any decision.

Part 2: What if there is a problem?

What if relevant new information becomes available? Sometimes we get new information during a project. If we find out anything new about any of the questionnaires or the information pack which means it might be harmful or upsetting for you or your child in any way, we will tell you both at once and you can decide whether or not you want to carry on.

What will happen if my child no longer wants to carry on with the study? If your child decides they no longer want to take part, you or they should let us know at once. A member of the research team will talk to your child about which parts they no longer want to be involved in (for example, they might not want to go through the pack, but feel OK with the questionnaires). We would like to still keep the information they have already given us if this is possible, but we will check this with you both as well. You can tell us that you would like us not to keep any information at all about your child, and in this case we will destroy all our copies of the information they have given us. This will not affect any other care your child might be offered, or your rights in any other way. The only exception to this will be information that is important for your child's care, or that relates to any risk of somebody being hurt or unsafe. We will sometimes have to hand this information over to the clinical team, and will be unable to destroy it because of its importance.

Complaints: If you have a concern about any aspect of this study, you should ask to speak with the researchers who will do their best to answer your questions, or to the staff on the ward. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure – Contact Patient Advice and Liaison Service (PALS) on: 0800 731 2864 or pals@slam.nhs.uk.

Harm: In the event that something does go wrong and your child is harmed during the research study there are no special compensation arrangements. If your child is harmed and this is due to someone's negligence then you may have grounds for a legal action for compensation against your local NHS Trust but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you (if appropriate).

Will my child's taking part in this study be kept confidential? All information which is collected about your child during the course of the research will be kept strictly confidential. All their answers to the questionnaires will be kept on paper and on an electronic database. They will be kept securely and anonymously and will be identifiable only by a number, not by name. Your child's name will be kept separately, with the number, on a different database and on paper, so that we can identify their questionnaires and recordings in the future if we need to (for example, if they decide they no longer want to be part of the study). We will only identify your child's questionnaires for a reason like this. Paper copies of questionnaires will be

kept securely by the researchers in a locked filing cabinet in a locked office. Your child's details will be kept for up to 12 years, and then will be confidentially destroyed. We will keep a completely anonymised copy of the database indefinitely, from which you and your child will not be able to be identified at all.

The information your child gives will usually be available only to the research team and to the clinical team. We work closely with your child's clinical team and the information your child gives us will usually be shared with the clinical team as it may help them to provide care for your child. The researcher will note this down on the team's notes system, where they will also note that your child is taking part in the study and when they meet with them. In addition, should you or your child give any information, such as criminal disclosures, or information relating to your own, your child's or others' safety, which requires action, we are legally obliged to act on this information, and to pass this information on to others, including services who are able to deal with these concerns, which may include Social Services or the Police.

What will happen to the results of the research study? We intend to publish the results of the research. Your child will not be personally identified in any report/publication. We sometimes use quotes from participants when we write about the research. In this case we will tell you what we want to write and where it will be seen and check that you agree.

Who is organising and funding the research? The research is organised by the team, who are members of academic and clinical staff at the Institute of Psychiatry, King's College London and the South London & Maudsley NHS Foundation Trust.

Who has reviewed the study? The study has been reviewed by the Brent Research Ethics Committee, reference number 12/LO/1984 and by the Joint Institute of Psychiatry/South London & Maudsley NHS Foundation Trust Research & Development Office (ref: to be inserted).

How can I take part? If you would like to take part in this project, please complete the attached consent form. If you have any questions or concerns about taking part in this study please contact the researchers below.

Contact Details: Anca Alba and Rosanna Philpott – 0207 848 0223/4

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Appendix 2.6

Institute of Psychiatry at The Maudsley

South London and Maudsley NHS

ISIS Inpatient Stay Improvement Study

Dr. Suzanne Jolley
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KING'S College LONDON

ASSENT FORM for Young People – V3 2nd April 2013

ISIS Study: Inpatient Stay Improvement Study

Names of researchers: Anca Alba, Rosanna Philpott, Emma Saddleton

Thank you for thinking about taking part in this project. The project must be explained to you before you agree to take part. If you have any questions please ask before you decide whether to join in. You will be given a copy of this form to keep.

Please tick the boxes, if you agree and the answer is 'yes':

1. I have read the Information Sheet for Young People, dated 2nd April, 2013, and someone has explained it to me and answered my questions. ☐

2. I know that I can change my mind about joining in any time and I don't have to say why. ☐

3. I know that the researchers work with my care team and will let them know what I say. I know that they might need to tell other people who are there to help if it is about somebody being hurt. ☐

4. I want to join in with the project. ☐

If any answers are 'no' or you don't want to join in, don't write your name. If you do want to join in, write your name on the line.

Young person's name: _____Date:

5. I have explained the study and answered any questions. ☐

_____ _____

Name of researcher Date Signature

When completed, 1 copy for the family, 1 for researcher; 1 (original) to be kept in medical notes

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Appendix 2.6

Institute of Psychiatry
at The Maudsley
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KING'S College LONDON

CONSENT FORM – V3 2nd April 2013
ISIS Study: Inpatient Stay Improvement Study
Names of researchers: Anca Alba, Rosanna Philpott, Emma Saddleton

Please initial boxes:

1. I have read the information sheet dated 02/04/13 for the above project, and one of the researchers has talked to me about it. I have had enough time to think about it and ask questions. ☐

2. I understand that taking part is voluntary and that my child and I are free to withdraw at any time, without giving any reason, and without our medical care or legal rights being affected. ☐

3. I understand that the research team work closely with my child's care team on the ward, will let them know that my child is taking part in the study. ☐

4. I am willing for the researchers to share with the ward team all information relevant to my child's care, that becomes apparent while we are taking part in the study. ☐

5. I am willing for the researchers to record this information in the team's electronic notes for my child. ☐

6. I give permission for sections of my child's medical notes to be looked at by the researchers, if it is relevant to taking part in this research (for example, to get an address, age or confirm clinical information). ☐

7. I understand that information relating to my child taking part in this study will be stored in an electronic file for up to 12 years. ☐

8. I agree for my child to take part in the above study. ☐

Name of parent/carer	Date	Signature

9. I have explained the study to this participant and answered their questions honestly and fully. ☐

Name of researcher	Date	Signature

I would like to be sent a summary of the results when completed ☐

I would like to be sent details of other studies in the future ☐

When completed, 1 copy for the family, 1 for researcher; 1 (original) to be kept in medical notes

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Appendix 3.6.1

Testing Hypothesis 2

In the exploratory secondary analyses, PLE severity was also associated with PTSD symptoms measured by CRIES-13 (Rho=0.6, $p<0.001$, n=34), and anxiety (Rho=0.6, $p<0.001$, n=32), but not depression (Rho=0.2, p=0.3, n=32). Investigating associations of PLEs with the DERS and CERQ subscales, only DERS-Impulse control reached significance (Rho=0.4, p=0.007, n=41), with trend associations for DERS-Goals (Rho=0.3, p=0.06, n=41) and CERQ-Rumination (Rho=0.3, p=0.08, n=41). Otherwise, Rho values < 0.3, p values > 0.1. A secondary regression analysis (Durbin Watson = 1.9, Collinearity tolerance > 0.7, VIF < 1.5; residuals normally distributed (Shapiro Wilk =0.9, df=38, p=0.12)) showed that the association of PLEs with the specific ER strategy of DERS-Impulse control (β=0.1, p=0.5) was not independent of the association of PLE severity with trauma frequency (β=0.6, $p<0.001$), and nor was the association of PLE severity with negative affective disturbance (β=0.1, p=0.2). The overall model accounted for just over forty percent of the variance in PLEs ($F(3,34)=9.4$, $r^2=0.41$, $p<0.001$) with trauma as the main predictor.

Appendix 3.6.2

Testing Hypothesis 3
In the secondary analyses, of the secondary measures of trauma and affective disturbance, only CRIES-13 was associated with CGAS at admission (Rho=0.4, p=0.02, n=33). Of the ER subscales, only DERS-Clarity (Rho=-0.3, p=0.05, n=38) and CERQ-Other blame was associated with recovery (Rho=0.5, p=0.002, n=37; also with admission CGAS at a trend level, Rho=0.3, p=0.06, n=37), with a trend finding for CERQ-Self-blame (Rho=-0.3, p=0.07, n=38). Otherwise, Rho values all < 0.3 and p values all > 0.1. Findings suggest that blaming others rather than oneself, and being less confused about one's feelings are key aspects of ER with regard to subsequent recovery. Secondary indices of recovery were calculated using the primary and secondary repeated outcome measures, excluding the participant who showed substantial deterioration over the course of their admission.

Table 3.8.2 *Recovery over time on primary and secondary measures*

Measures*	N	Mean (SD)		
		Admission	Discharge	Change
CGAS	37	36.8 (10.9)	57.2 (9.5)	-20.4 (12.3)*
SDQ-total	16	26.4 (5.8)	26.7 (6.8)	-0.2 (3.7)
SDQ-E	17	6.5 (2.7)	6.6 (2.7)	-0.2 (1.7)
PANAS-C-PA	17	23.9 (11.4)	24.7 (10.9)	-0.8 (7.7)
PANAS-C-NA	15	51.5 (13.0)	48.1 (14.2)	3.3 (9.8)
MFQ	13	43.5 (17.4)	42.8 (17.9)	0.8 (26.3)
SCAS	12	50.0 (24.0)	47.4 (24.2)	2.6 (7.1)
DERS total	17	131.8 (27.8)	109.1 (18.0)	22.6 (26.3)*
CRIES-13	12	45.0 (14.1)	42.3 (12.6)	2.7 (8.4)
PLE severity	17	21.8 (17.9)	16.2 (18.5)	5.6 (10.7)

Key: *CGAS: Child Global Assessment Scale (Schaffer et al., 1983); CGAs Recovery scores were computed by subtracting CGAS admission from CGAS discharge; SDQ: Strengths and Difficulties Questionnaire (Goodman et al., 2011); DERS: Difficulties with Emotion Regulation Scale (Gratz and Roemer 2004); PLE: Psychotic-Like Experiences (Laurens et al., 2007, 2011, 2012); Total Trauma: Trauma Checklist; CRIES-13: Children's Revised Impact of Events Scale-13 (Smith et al., 2012); PANAS-C (NA): Positive and Negative Affect scale-Child, (Negative affect) (Laurent et a., 1999); SCAS: Spence Children's Anxiety Scale (Spence, 1998); MFQ: Mood and Feelings Questionnaire (Costello and Angold, 1988).
**p<.01

Table 3.8.3 *Emotion regulation change over time (n=17)*

DERS subscales	Change (SD)
Non-acceptance	0.3 (6.1)
Goals	2.9 (3.3)**
Impulse control	1.8 (3.5)
Awareness	9.1 (9.3)**
Strategies	4.2 (6.5)*
Clarity	4.3 (4.3)**

***p<.05**
****p<.01**

Appendix 3.6.3

Appendix 3.6.3 Spearman correlations: affect and ER measures at admission

Spearman Correlations	SDQ	PANAS-C PA	PANAS-C NA	MFQ	SCAS	SDQ-E
DERS Admission total score	.477**	-.464**	0.266	.758**	.437*	.395**
	0.002	0.002	0.101	0	0.011	0.01
	41	41	39	32	33	42
DERS Nonacceptance	0.178	-0.223	.382*	.451**	0.277	0.212
	0.265	0.162	0.017	0.01	0.119	0.177
	41	41	39	32	33	42
DERS Goals	.543**	-.411**	0.211	.657**	.369*	.387*
	0	0.008	0.197	0	0.035	0.011
	41	41	39	32	33	42
DERS Impulse control	.495**	-.332*	0.205	.587**	.410*	.373*
	0.001	0.034	0.211	0	0.018	0.015
	41	41	39	32	33	42
DERS Awareness	0.243	-0.178	0.07	0.302	.479**	0.189
	0.126	0.266	0.67	0.093	0.005	0.232
	41	41	39	32	33	42
DERS Strategies	.417**	-.568**	.341*	.717**	0.286	.430**
	0.007	0	0.034	0	0.106	0.004
	41	41	39	32	33	42
DERS Clarity	0.262	-0.234	0.2	.473**	0.297	.340*
	0.098	0.141	0.223	0.006	0.093	0.028
	41	41	39	32	33	42
Self-blame	0.197	-0.028	.432**	.405*	0.278	.359*
	0.218	0.861	0.006	0.021	0.117	0.019
	41	41	39	32	33	42
Acceptance	-0.036	0.205	-0.123	-0.081	0.153	-0.015
	0.825	0.199	0.455	0.66	0.397	0.925
	41	41	39	32	33	42
Rumination	0.281	-0.134	.463**	.430*	.355*	.355*
	0.075	0.403	0.003	0.014	0.043	0.021
	41	41	39	32	33	42
Positive refocusing	-0.127	.527**	-0.249	-.618**	0.007	-0.193
	0.429	0	0.126	0	0.97	0.221
	41	41	39	32	33	42
Refocus on planning	-0.151	.641**	-0.154	-.637**	-0.217	-.307*
	0.345	0	0.35	0	0.224	0.048
	41	41	39	32	33	42
Positive reappraisal	-0.274	.720**	-0.259	-.692**	-0.271	-.389*
	0.083	0	0.112	0	0.127	0.011
	41	41	39	32	33	42
Putting into perspective	-0.026	.355*	-0.245	0.061	0.231	-0.049

	0.876	0.027	0.144	0.743	0.203	0.766
	39	39	37	31	32	40
Spearman Correlations	SDQ	PANAS-CPA	PANAS-CNA	MFQ	SCAS	SDQ-E
Catastrophizing	0.218	-0.308	0.126	0.207	0.02	0.282
	0.178	0.053	0.451	0.263	0.915	0.074
	40	40	38	31	32	41
Other-blame	-0.256	.403*	-0.091	-.391*	-0.121	-0.228
	0.116	0.011	0.592	0.03	0.501	0.156
	39	39	37	31	33	40

Appendix 3.7

Appendix 3.7 Tests of normality for primary measures

	Shapiro-Wilk		
	Statistic	df	Sig.
CGAS Admission	.936	40	.025
CGAS Discharge	.904	38	.003
CGAS Recovery	.839	38	.000
SDQ-E Admission	.929	42	.012
DERS Total Admission	.873	42	.000
CRIES-13 score at Admission	.948	34	.105
Trauma Total Admission	.936	38	.032
PLE Total Admission	.899	42	.001