RELATIONSHIP BETWEEN AFFECTIVE STATE AND PERSONALITY RATINGS IN INPATIENT DEPRESSION (RAPID)

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RELATIONSHIP BETWEEN AFFECTIVE STATE AND PERSONALITY RATINGS IN INPATIENT DEPRESSION (RAPID)

Thesis submitted to meet the requirements for entry to the doctoral research degree; Doctor of Medicine (MD) in the field of Psychiatry

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DECLARATION

The thesis has been composed by me and has not been submitted for previous application for a degree. I confirm that the work submitted is my own and that appropriate credit has been given where reference and acknowledgment have been made to the work of others. Those parts of work that were not completed by myself are clearly identified in the thesis. All quotations in this thesis have been distinguished by quotation marks.

J. A. R. Kaushadh Jayakody

Principal Investigator (RAPID study)

ABSTRACT

BACKGROUND: The relationship between major depressive disorder (MDD) and personality disorders is complex and has implications for diagnosis and treatment. We explored the relationship between these disorders quantitatively and qualitatively.

METHODS: We conducted a structured observational study exploring depressive symptoms and neurocognitive functions over the span of an inpatient admission in those with MDD and personality disorders. Sixty inpatients presenting with depressive symptoms completed ratings of mood and selected neurocognitive functions. Diagnosis was confirmed in structured clinical interviews at discharge and used to allocate patients to one of two main groups for analysis: those with MDD and those with a personality disorder (with or without MDD). Qualitative methods were used to assess behaviours of patients on the ward and the opinions of staff regarding diagnosis.

RESULTS: On admission, observer-based ratings of depression were significantly higher in the MDD group, while subjective ratings of depression were higher in the personality disorder group. Depression rating scores decreased in both groups over the course of admission, but at discharge, the personality disorder group continued to report higher subjective ratings. The personality disorder group also rated themselves as more cognitively impaired than the MDD group, and unlike the MDD group, they did not report subjective improvements in cognitive function over the course of admission. An objective assessment of cognitive functions found improvements in both groups. The personality disorder group also reported a greater degree of childhood trauma compared with the MDD group. Of the patients in the MDD group, 54% were given personality disorder–related diagnoses by staff. Some of the behaviours that were only exhibited by personality disorder group inpatients were ‘overinvolved in the care of other patients’, ‘inappropriate amusement of other patients’ distress’, ‘patient seeking involvement of family’ and ‘self-harming repeatedly on the same site’, while ‘psychomotor retardation’ was only observed in the MDD group.

CONCLUSIONS: The presence of a personality disorder was associated with greater subjective severity of depressive symptomatology and neurocognitive functioning, despite similar or lower objective severity in comparison with those with MDD. Qualitative differences in the behaviour of those in the different groups were observed, as well as discrepancies in the diagnostic labels applied by team members.

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ACRONYMS AND INITIALISMS

AFF	Alternative Five-Factor
APA	American Psychiatric Association
ADHD	Attention Deficit Hyperactivity Disorder
BDI	Beck Depression Inventory
B.C.	Before Christ
CFQ	Cognitive Failures Questionnaire
CGI	Clinical Global Impression rating scale
CI	95% confidence interval
CTQ	Childhood Trauma Questionnaire
df	Degree of freedom
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision
DSST	Digit Symbol Substitution Test
DBD group	Depression-broad-definition group
ECT	Electroconvulsive
HAMD	Hamilton Depression rating scale
ICD-10	International Classification of Diseases, 10th revision, Classification of Mental and Behavioural Disorders. Clinical descriptions and diagnostic guidelines
IIP 47	Inventory of Interpersonal Problems
IQ	Intelligence quotient
LOS	Length of stay
MCMI III	Millon Clinical Multiaxial Inventory III
MDD	Major depressive disorder
MMPI	Minnesota Multiphasic Personality Inventory
n	Number of patients after excluding missing data
NEO	Neuroticism, Extraversion, Openness
NEO FFI	NEO Five Factor Inventory
NHS	National Health Service
NICE	The National Institute for Health and Care Excellence

OCEAN	Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism
CNTW	Cumbria, Northumberland, Tyne and Wear
OR	Odds ratio
p	Page
p	Significance p value
r	Correlation coefficient
R&D	Research and development
RAPID1 – 60	Study patient identification numbers for individual participants
REC	Research Ethics Committee
SCID-5-PD	Structured Clinical Interview for Diagnostic Statistical Manual Disorders 5 Personality Disorders
SCID-5-RV	Structured Clinical Interview for Diagnostic Statistical Manual Disorders 5 Research Version
SCID II	Structured Clinical Interview for DSM-IV Axis II Personality Disorders
SCID	Structured Clinical Interview for Diagnostic Statistical Manual Disorders
SD	Standard deviation
TCI	Temperament and Character Inventory
UK	United Kingdom
US	Unites States
v.	Versus
WHO	World Health Organization
ZAN-BPD	Zanarini Rating Scale for Borderline Personality Disorder

CHAPTER 1: INTRODUCTION

1.1 Background

Affective disorders and personality disorders are among the most common conditions presenting to adult psychiatry services. They are common psychiatric illnesses that markedly disrupt health, family relationships, social circumstances and occupational status. In depressive disorder, which is categorised under affective disorders, lifespan is reduced and suicide is common. According to some surveys, personality disorders are diagnosable in up to 50% of people who die by suicide (Foster, Gillespie and McClelland, 1997). In isolation, both conditions are associated with substantial morbidity and mortality, but they differ in prognosis, course and treatment. For instance, major depressive disorder (MDD), which is a subcategory of depressive disorder according to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), is typically managed using a combination of psychological therapies and drug treatments. Hospital admission is sometimes necessary in the most severe cases, and physical treatments such as electroconvulsive therapy may also be used. Conversely, for patients with a personality disorder, current practice favours community-based psychological and behavioural interventions, as well as avoiding reliance on medication and prolonged hospital admission as much as possible (Leonard, 2004). The two conditions are not mutually exclusive; it is estimated that up to half of those presenting with MDD have a concurrent personality disorder (Pfohl, Stangl and Zimmerman, 1984). Patients with a primary personality disorder may develop a depressive disorder and require treatment for that episode of illness in its own right. A depressive disorder can also present with features suggestive of a personality disorder, only for these to resolve when the primary affective disorder is successfully treated. This latter situation presents perhaps the greatest challenge to healthcare teams, with management plans differing substantially according to whether one decides to accept comorbidity or aggressively treat an underlying affective disorder. In this chapter, the constructs of depressive disorders and personality disorders are introduced and the terms ‘affective state’, ‘depression’, ‘personality ratings’ and ‘personality traits’ are defined. The literature examining the distinctions and inter-relationships between depressive disorders and personality disorders is reviewed, in advance of the study hypotheses being presented.

1.1.1 Depression, Mood and Affective State

Depression was initially called ‘melancholia’ and was first described in ancient Mesopotamian texts in the second millennium BC (Nemade, Reiss and Dombeck, 2007). In these texts, depression was narrated as a spiritual condition. In 1621, in the book *Anatomy of Melancholy*, Robert Burton described causes of depression that we now consider in the psychological domain. In 1867, Richard von Krafft-Ebing categorised ‘simple depression’ and ‘psychotic melancholia’ as two different illnesses. Freud wrote about mourning and melancholia in 1917.

Around 1900, Emil Kraepelin described that ‘manic-depressive insanity’ included all mood disorders, such as mania and severe depressive illness, and categorised ‘psychogenic depression’ as a separate illness (Shorter, 2015).

Depression can be defined as a normal response to loss or misfortune (e.g., appropriate sadness associated with bereavement). However, depression becomes abnormal when the response is out of proportion or unduly prolonged (Harrison *et al*., 2018a). In the literature, the term ‘depression’ is widely used to describe depressive illnesses including MDD. Depression is closely associated with depressed mood (low mood), which is an abnormal emotional reaction. Mood is defined as ‘a pervasive and sustained emotion that colours the person’s perception of the world’. Affect is defined as a ‘person’s present emotional responsiveness’ (Casey and Kelly, 2019, p.72), and the affective state refers to the underlying emotional state (Harmon-Jones, Gable and Price, 2012; Ede *et al*., 2019).

1.1.2 Depressive Disorders, Syndrome and Depressive Symptoms

In 1952, the DSM-I used the term ‘neurotic depressive reaction’ to describe depressive illnesses (Shorter, 2015). In 1968, the DSM-II included a mood disorders section featuring manic-depressive illness and other depressive states (e.g., psychotic and melancholic). Leonhard (1957) laid out the psychopathological difference between the depression of unipolar disorder and the depression of bipolar disorder. In 1970, the term ‘major depressive disorder’ was first introduced by clinicians in the United States (US) and was included in the DSM-III in 1980.

The term ‘syndrome’ is defined as a collection of associated symptoms that are unique as a group (Casey and Kelly, 2019). Depressive disorder is a syndrome with a collection of

symptoms called depressive symptoms. Different types of depressive symptoms have been identified in the diagnosis of a depressive order, including low mood, anhedonia (inability to experience pleasure), fatigue, sleep disturbance (insomnia or hypersomnia), appetite changes (increased or decreased) resulting in weight changes (increase or decrease), psychomotor symptoms (anxiety, distress, agitation, retardation), cognitive symptoms (low self-esteem and confidence, feelings of worthlessness and guilt), reduced concentration, decreased libido and thoughts of self-harm (see Table 1.1). Mood is typically low for most of the day (nearly every day), generally unresponsive to changes and circumstances or only briefly improving with environmental cues. According to the ICD-10:

> Mood change may also be masked by added features such as irritability, excessive consumption of alcohol, histrionic behaviour, and exacerbation of pre-existing phobic or obsessional symptoms, or by hypochondriacal preoccupations. (WHO, 1992a, p.100)

Table 1.1: Depressive symptoms described under the DSM-5 and the ICD-10

Symptoms described under the DSM-5 for MDD	Symptoms described under the ICD-10 for depressive episodes (ICD-10 F 32)
Depressed mood as indicated by either subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful)	Depressed mood
Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation)	Loss of interest and enjoyment
Fatigue or loss of energy nearly every day	Reduced energy leading to increased fatiguability and diminished activity (tiredness after slight effort)
Insomnia or hypersomnia nearly every day	Disturbed sleep
Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day	Diminished appetite
Feelings of worthlessness or excessive or inappropriate guilt nearly every day (not merely self-reproach or guilt about being sick)	Ideas of guilt and unworthiness
Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)	Reduced concentration and attention

Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide	Ideas or acts of self-harm or suicide
Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)	—
—	Reduced self-esteem and self-confidence
—	Bleak and pessimistic views of the future

1.1.3 Diagnostic Systems for Depressive Disorders

Mood disorders (affective disorders) include depressive disorders and bipolar disorder. A range of diagnostic tools are used to screen, diagnose and assess the severity of depressive disorders, with two classification systems widely used: i) the International Classification of Diseases, Tenth Revision (ICD-10[1]) by the World Health Organization (WHO, 1992b); and ii) the Diagnostic Statistical Manual 5 (DSM-5) by the American Psychiatric Association (APA, 2013). The DSM-5 divides depressive disorders into the following subcategories:

- disruptive mood dysregulation disorder
- major depressive disorder
- persistent depressive disorder (dysthymia)
- premenstrual dysphoric disorder
- substance/medication-induced depressive disorder
- depressive disorder due to another medical condition
- other specified depressive disorder
- unspecified depressive disorder.

The MDD category is further divided into the following groups:

- single or recurrent episodes
- current severity (mild, moderate, severe)
- presence of psychotic features
- remission status (partial remission, full remission)
- unspecified.

[1] At the time of writing this thesis, ICD-10 was used. ICD-11 was effective from January 2022.

MDD is also further divided into the below specifiers:

- with anxious distress
- with mixed features
- with melancholic features
- with atypical features
- with mood-congruent psychotic features
- with mood-incongruent psychotic features
- with catatonia
- with peripartum onset
- with seasonal pattern.

In addition to depressive disorders in the DSM-5, major depressive episodes are categorised separately under bipolar and related disorders. Depressive disorders in the ICD-10 come under affective (mood) disorders (ICD-10 F30–39). Depressive disorders are divided into the following subcategories:

- depressive episode (mild, moderate, severe, psychotic symptoms, other, unspecified [ICD-10 F 32])
- recurrent depressive disorder (ICD-10 F 33)
- persistent mood (affective) disorder (dysthymia, cyclothymia, other, unspecified [ICD-10 F 34])
- other mood (affective) disorder (ICD-10 F 38)
- unspecified mood (affective) disorder (ICD-10 F 39).

The ICD-10 requires a minimum of four symptoms to diagnose a mild depressive episode (five symptoms for a moderate depressive episode), whereas the DSM-5 requires five symptoms to diagnose MDD (see Table 1.1). In both, depressive symptoms need to be present for at least two weeks. Both the ICD-10 and the DSM-5 permit the diagnosis of depressive disorders and personality disorders concurrently. Symptom profile in depression may differ in some Eastern cultures (Parker, Gladstone, and Chee, 2001; Ryder *et al*., 2008).

1.1.4 Subsyndromal Depressive Symptoms

Subsyndromal depressive symptoms can co-exist with other mental disorders such as anxiety disorders, adjustment disorders, autistic spectrum disorders, post-traumatic stress disorder and psychotic disorders. Here, the patient may not fulfil the diagnostic criteria for MDD but may still display a number of subsyndromal depressive symptoms. The term 'subsyndromal depressive symptoms' is defined as two or more depressive symptoms beneath the diagnostic threshold of MDD, dysthymia or mild depressive episode (Judd, Akiskal and Paulus, 1997).

1.1.5 The Epidemiology of Depressive Disorders

The prevalence of depressive disorders varied depending on the diagnostic guidelines used and the study sample. It is estimated that the 12-month prevalence of MDD in community samples is between 2% and 5%, and the lifetime risk of developing MDD varied from 4% to 30% (Harrison *et al.*, 2018a). The prevalence rates are higher in females than males. MDD can occur at any point in the lifespan, although the mean age of onset is estimated at approximately 27 years. The lifetime risk of experiencing dysthymia is around 4% (Alonso *et al.*, 2004). It is estimated that around 20% of the patients with MDD have psychotic symptoms (Ohayon and Schatzberg, 2002).

1.1.6 Course and Prognosis of Depressive Disorders

The average duration of a depressive episode is around six months. About 25% of patients have a depressive episode that lasts more than one year. Of those with MDD, around 80% will experience another episode after the first episode. Around 10–20% of the patients with depression develop a chronic unremitting course. Patients with MDD with recurrent episodes experience roughly four episodes over a 25-year period, and around 50% do not achieve complete remission between episodes and present with subsyndromal depressive symptoms. Around 25% with recurrent depressive disorder experience a period of five years of stable social and occupational functioning (Harrison *et al.*, 2018a). The rate of suicide is 15 times higher in those with depression compared to the general population (Angst, 2009). Treatment reduces the mortality rate in patients with depression (Angst *et al.*, 2013).

1.1.7 Treatment of Depressive Disorders

Mild depressive illness is treated with individual guided help, cognitive behavioural therapy and exercise, and antidepressants are recommended for moderate to severe depressive illness (Taylor, Barnes and Young, 2021). Treatment of depressive disorder by antidepressants achieves a short-term response rate of around 50% in controlled trials (Cleare *et al.*, 2015), with gradual remission of symptoms over 2–3 weeks. Response to treatment is defined as a reduction of at least 50% in depressive symptoms evaluated using a standard instrument such as the Montgomery-Asberg Depression Rating Scale (Frank *et al.*, 1991). For those who do not respond to antidepressant monotherapy, switching or a combination or augmentation of strategies can be trialled. Around 40% of patients with depressive illness respond to lithium augmentation (Nelson *et al.*, 2014). Treatment with electroconvulsive therapy is superior to antidepressant drug treatments in the short term (UK ECT Review Group, 2013). For psychotic depression, a systematic review concluded that a combination of an antidepressant and an antipsychotic treatment was superior to monotherapy of either class (Farahani and Correll, 2012). Structured psychotherapies perform as well as drug treatments in moderate depression, and cognitive behavioural therapy is superior to a waiting list control in relieving depressive symptoms (NICE, 2009a). Treatment of depression with behavioural activation is superior to waiting list control (Ekers *et al.*, 2014). Depression can be treated using several other methods, such as bright light treatment and transcranial magnetic stimulation.

1.2 Personality

1.2.1 Historical and Contemporary Conceptions

Personality can be considered the enduring qualities of an individual that are manifest in the way they behave in a wide variety of circumstances (Harrison *et al*., 2018b). Such behaviours tend to persist throughout the individual's adult life. Some aspects of personality may predispose an individual to a mental disorder and influence their engagement in treatment. A variety of divisions and classification systems have evolved to describe personality. Broadly, approaches to describe personality are as follows:

- psychological types
- personality types
- personality styles (interpersonal styles)
- temperaments

- personality changes
- personality traits (dimensions)
- personality disorders
- personality ratings.

1.2.2 Psychological Types

In *Psychological Types, or The Psychology of Individuation*, Carl Jung (1921) described two personality types:

- extraverted
- introverted.

In *Emotions of Normal People*, Marston (1928) categorised personality-related behaviour into four types:

- dominance
- influence
- steadiness
- conscientiousness.

1.2.3 Personality Types

Personality type is defined as typical configurations of the dispositional attributes that define the individual (Donnellan and Robins, 2010). Studies have identified three replicable personality types: resilient, overcontrolled and under-controlled personalities (Donnellan and Robins, 2010). However, the existence of personality types remains controversial compared with personality traits (Gerlach *et al*., 2018). Personality types involve qualitative differences between people, whereas traits are construed as quantitative differences (Bernstein *et al*., 2008).

One of the tools used to assess personality types is the Myers–Briggs Type Indicator (Myers and Myers, 1995), which is a self-report questionnaire indicating differing psychological preferences in how people perceive the world and make decisions.

1.2.4 Personality Style (Interpersonal Style)

'Personality style' is not clearly defined in the literature. The term 'interpersonal style' is also used to describe the personality style of an individual; it can be defined as how an individual interacts with other people (Sadler and Woody, 2003). Personality traits influence the personality style and behaviour of an individual. Tools that are used to assess interpersonal styles include the Impact Message Inventory (Perkins *et al*., 1979).

1.2.5 Temperaments

'Temperament' is another term used to describe personality. Different types of temperaments have been identified over the years, and the terms 'personality type' and 'interpersonal style' have been used interchangeably to describe temperament. The Greek physician Hippocrates (370 BC) identified four temperaments:

- sociable and pleasure-seeking
- ambitious and leader-like
- melancholic
- relaxed and quiet.

Subsequently, the four-temperament theory identified four fundamental types of temperament (Merenda, 1987; Ekstrand, 2021):

- sanguine (highly talkative, enthusiastic, active and social)
- choleric (more extraverted, independent, decisive, goal-oriented and ambitious)
- melancholic (analytical, thoughtful, detail-oriented, deep thinkers and feelers)
- phlegmatic (more relaxed, peaceful, quiet and easygoing).

1.2.6 Personality Change

Personality disorders tend to appear in childhood or adolescence and proceed into adulthood, but they are not the same as personality changes. Personality changes are defined as being:

> …acquired, usually during adult life, following severe or prolonged stress, extreme environmental deprivation, serious psychiatric disorder, or brain disease or injury. (WHO, 1992c, p.156)

An enduring change in personality may result from an organic disease of the brain, severe stressful events and following psychiatric illness. To diagnose enduring personality change after psychiatric illness or severe stressful events, change in personality must have lasted for minimum two years according to ICD-10.

1.2.7 Personality Traits (Personality Dimensions)

A review of the literature shows that authors use the terms 'personality traits' and 'personality dimensions' interchangeably. Emil Kraepelin (1856–1926) explored human personalities and stressed the existence of overt pathological conditions (some authors later called this 'abnormal personality' or 'personality disorders'; Oyebode, 2018) and personality features encountered in normal people (some authors later called this 'personalities of normal people'; Oyebode, 2018). Kraepelin used the term 'psychopathic personalities' to describe the overt pathological condition of personality and identified seven types of pathological personalities (Huber and Gross, 2009). Later, Schneider (1958) described 10 'psychopathic' (i.e., abnormal) personalities.

The term 'personality traits' or 'personality dimensions' was later used to describe symptom clusters. DSM-III-R defined personality disorders as clusters of personality traits that are inflexible and maladaptive, and that cause either significant functional impairment or subjective distress. Here, the term 'personality traits' is used, but it shows a different aspect of psychopathology, and clusters of personality traits are used to diagnose personality disorders. Therefore, 'personality trait' is considered a conceptual unit of analysis, defined as an enduring pattern of perceiving, relating and thinking about the environment and oneself, and exhibited in a wide range of important and personal contexts (Berrios, 1993; Huber and Gross, 2009).

Certain personality traits tend to occur together, resulting in clinical significance. The relative predominance of these personality traits determines the type of personality disorder, and to be clinically relevant, these traits need to affect the functioning of an individual (Oyebode, 2018). The ICD-10 and the DSM-5 follow the same principles and use a collection of personality traits to diagnose a subtype of personality disorder (e.g., borderline personality disorder). When conducting a mental state examination, the assessor should determine whether these personality traits are present to a significantly abnormal extent, leading to a diagnosis of personality disorder (Oyebode, 2018). This approach is used when diagnosing personality disorder using standard personality disorder diagnostic tools such as the

Structured Clinical Interview for DSM-5 Personality Disorders (SCID-5-PD). To diagnose personality disorder according to the DSM-5, an evaluation of pathological personality traits is required (APA, 2013). According to the DSM-5, there are five main types of pathological personality traits:

- negative affectivity (high levels of negative emotions)
- detachment (avoidance of socio-emotional experience)
- antagonism (behaviours that put the individual at odds with others)
- disinhibition (immediate gratification, impulse behaviours)
- psychoticism (culturally incongruent, eccentric).

Bernard Cattell (1905–1998) grouped the multitude of terms usually used to describe personality into a smaller number of personality traits (Crocq, 2013). Cattell (1963) formulated five personality factors (also called personality traits): novelty-seeking, conscientiousness, extraversion–introversion, agreeableness and neuroticism. A NEO (neuroticism, extraversion, openness) Personality Inventory (NEO-PI) was introduced to examine the main five personality traits (Costa and McCrae, 1985):

- neuroticism (tendency to be anxious, depressed and stress-reactive)
- extraversion (outgoing, friendly and emotionally positive)
- openness to experience (curious and imaginative)
- agreeableness (empathetic and gets along with others)
- conscientiousness (tendency to be orderly and achievement-oriented).

The full revised NEO Personality Inventory (NEO-PI-R) consists of 240 items (Costa and McCrae, 2008) that assess 30 specific personality traits (dimensions) as described in Table 1.2. Its shorter forms, NEO-FFI-3 and NEO-PI-3, consist of 60 items and 37 items, respectively.

Table 1.2: Examples of items assessed within the five personality dimensions of the NEO Personality Inventory (30 specific personality traits assessed in the NEO-PI-R)

Neuroticism	Extraversion	Openness to experience	Agreeableness	Conscientiousness
Anxiety	Warmth	Fantasy	Trust	Competence
Hostility	Gregariousness	Aesthetics	Straightforwardness	Order
Depression	Assertiveness	Feelings	Altruism	Dutifulness
Self-consciousness	Activity	Actions	Compliance	Achievement striving
Impulsiveness	Excitement seeking	Ideas	Modesty	Self-discipline
Vulnerability to stress	Positive emotion	Values	Tendermindedness	Deliberation

The NEO inventories are used for basic research on personality structure and development and in clinical settings. In clinical practice, the NEO inventories are used to understand the strengths and weaknesses of the patient, assist in diagnosis, identify problems in living, establish rapport, provide feedback and insights, determine the course of therapy, and select optimal forms of treatment (Costa and McCrae, 2008). This five-factor model is also called the OCEAN (openness, conscientiousness, extraversion, agreeableness, neuroticism) model (see Figure 1.1) (Goldberg, 1992).

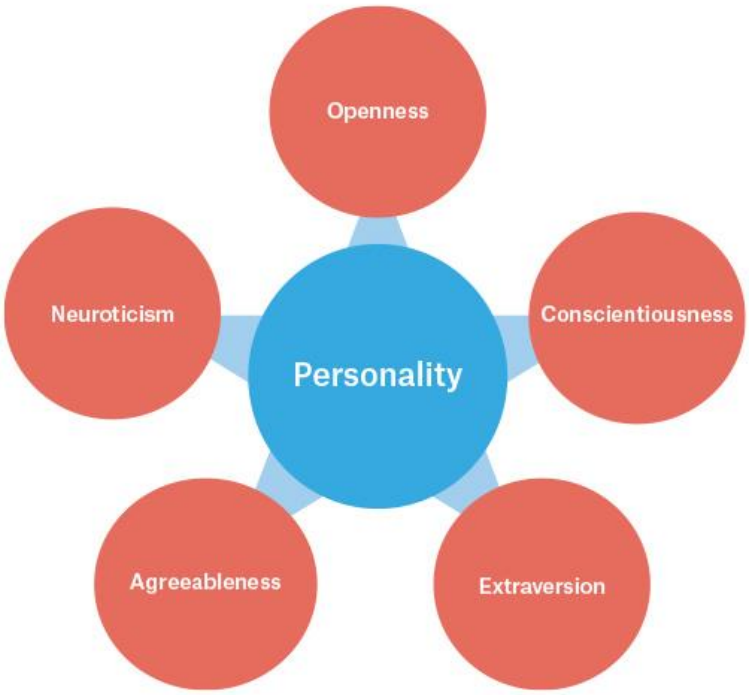

Figure 1.1: The OCEAN model (Goldberg, 1992)

Eysenck (1970) proposed a categorisation based only on extraversion–introversion, neuroticism and psychoticism, while Cloninger proposed a seven-factor model that included novelty-seeking, harm avoidance, reward dependence, persistence, self-directedness, cooperativeness and transcendence (Cloninger, Svrakic and Przybeck, 1993). This latter model was revised by the same author to produce the Temperament and Character Inventory — Revised (TCI-R) (Cloninger, 1999). Two versions of the TCI are now available: TCI and TCI-Revised. Subscales in the TCI-R are shown in Table 1.3. Personality traits are further defined by the alternative five-factor (AFF) model, which includes neuroticism-anxiety, activity, sociability, impulsive sensation-seeking and aggression-hostility (Zuckerman *et al*., 1993).

Table 1.3: Seven-factor model and associated subscales of the TCI-R (Cloninger, 1999)

Novelty-seeking	Harm avoidance	Reward dependence	Persistence	Self-directedness	Cooperativeness	Self-transcendence
Exploratory excitability	Anticipatory worry	Sentimentality	Eagerness of effort	Responsibility	Social acceptance	Self-forgetful
Impulsiveness	Fear of uncertainty	Openness to warm communication	Work hardened	Purposeful	Empathy	Transpersonal identification
Extravagance	Shyness	Attachment	Ambitious	Resourcefulness	Helpfulness	Spiritual acceptance
Disorderliness	Fatigability	Dependence	Perfectionist	Self-acceptance	Compassion	
				Enlightened second nature	Pure-hearted conscience	

The domains in the OCEAN model, AFF model and seven-factor model organise both normal and abnormal personality (Geddes, Andreasen and Goodwin, 2020). Studies have investigated the link between these personality traits (described under NEO and the TCI) and personality disorders. Bricaud *et al*. (2012) investigated the link between personality traits in TCI and personality disorders and found that novelty-seeking was negatively correlated with schizoid personality disorder and positively correlated with antisocial, borderline, histrionic and narcissistic personality disorders. Obsessive-compulsive personality disorder was negatively correlated with reward dependence, and all personality disorders were negatively correlated with self-directedness (see Section 1.4 for further details).

1.2.8 Personality Development

A variety of theories have been proposed for personality development. Children may have personality characteristics that resemble those of their parents through genetic influence and social learning. Genetic influences on personality origin have shown that virtually all aspects of personality are heritable (Turkheimer, 2000; Plomin *et al*., 2001). Freudian theory emphasised events during the first five years of life, while Jung considered personality development a life-long process with 'individuation'. Erikson proposed eight development stages and an attachment theory in personality development derived from the work of Bowlby. Early childhood experience and childhood temperament have also been investigated.

The cognitive-adaptive theory of traits was proposed to explain associations between traits and performance (Penke, Denissen and Miller, 2007; Matthews, 2009, 2016). It rejects the view that personality dimensions (traits) directly reflect brain systems. Instead, traits correspond to variations in strategies for managing key adaptive challenges; each trait is expressed in environments that pose those challenges, and each trait corresponds to skills and self-knowledge that facilitate adaptation to those environments (Matthews, 2018). For the development of abnormal personalities, changes in brain neurotransmission (5-hydroxytryptamine) and cerebral pathology (e.g., prefrontal grey matter) have also been investigated.

1.3 Personality Disorders

Personality disorders are not a new concept; there is a rich and descriptive history exploring the concepts of dysfunctional or maladaptive character traits. Many descriptions would be considered pejorative in today's culture. In 1835, James Prichard from the Bristol Infirmary suggested a new term, 'moral insanity', to describe abnormal personality:

> Morbid perversion of the natural feelings, affections, inclinations, temper, habits, moral dispositions and natural impulses, without a remarkable disorder or defect of the intellect or knowing or reasoning faculties, and in particular without any insane delusion or hallucination. (Prichard, 1835)

In 1885, Henry Maudsley described patient characteristics similar to those that would now attract a diagnosis of antisocial personality disorder. In 1891, Julius Koch introduced the term 'psychopathic inferiority', and this term was later replaced by 'personality'. Kurt Schneider used the term 'psychopathic' in 1923 to cover a wide range of abnormal personalities.

Various criteria have been proposed to differentiate normal from abnormal personalities. They are broadly grouped into those emphasising a statistical differentiation and those focusing on social impact. Statistical criteria approaches seek to identify aspects of personality that quantitatively differ from normal. Social criteria approaches focus on delineating personalities deemed abnormal by virtue of them causing suffering to the individual and others (Harrison *et al*., 2018c). The ICD-10 defines 'disorder' as a clinically recognisable set of symptoms or behaviours associated with distress, and interference with personal functions. According to the ICD-10, personality disorders comprise:

> deeply ingrained and enduring behaviour patterns, manifesting themselves as inflexible responses to a broad range of personal and social situations. (WHO, 1992b, p.156)

Here, extreme or significant deviations are observed in how an average individual in a given culture perceives, thinks, feels and relates to others. Enduring behaviours are known to be associated with subjective distress and problems in social functioning.

1.3.1 Personality Ratings and Diagnosing Personality Disorders

Personality disorders are generally assessed using multiple assessment methods, such as clinical interviews, questionnaires, self-reports and informant reports, and for assessment purposes, self-ratings and interviewer-based ratings of personality are used (Nuzum, Ready and Clark, 2019). A variety of personality rating scales have been developed to assess normal and abnormal personalities, including the SCID-5-PD, which is based on the DSM-5 and is used to diagnose personality disorders. Another common diagnostic tool used to diagnose personality disorders is the International Personality Disorder Examination (Loranger, Janca and Sartorius, 1997), which is based on the ICD-10. The diagnostic classification divides personality disorders into subtypes according to the DSM-5 and the ICD-10 (see Table 1.4).

Other tools that have been developed to assist with a clinical diagnosis of personality disorders include the Minnesota Multiphasic Personality Inventory (MMPI), the Millon Clinical Multiaxial Inventory (MCMI) and the Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD). The MMPI was developed to elicit both depressive and personality psychopathology. The original MMPI (Hathaway and McKinley, 1940; Schiele, Baker and Hathaway, 1943) was later revised to create the MMPI-2 (Butcher *et al*., 1989), and an adolescent version (MMPI-A) was subsequently printed. Mental health professionals use the MMPI to help develop treatment plans, assist with differential diagnoses and screen job

candidates, as well as in forensic psychology and therapeutic assessment procedures (Butcher and Williams, 2009). The MCMI tool is intended to provide information on personality traits and psychopathology, including personality disorders (Millon, Millon and Grossman, 2015). The ZAN-BPD assesses the change in DSM-IV borderline psychopathology (Zanarini *et al*., 2003). These assessment tools are used to identify changes in personality traits to observe responses to treatment. For example, a clinical trial regarding the effectiveness of lamotrigine in patients with borderline personality disorder used the ZAN-BPD scale to explore changes in personality traits such as affective instability and impulsiveness (Crawford *et al*., 2018), and those traits are present in borderline personality disorder according to the DSM-5 and the ICD-10.

According to the ICD-10, to diagnose a personality disorder, the below diagnostic guidelines must be applied to all personality disorders:

- Conditions are not directly attributable to gross brain damage or disease, or to another psychiatric disorder.
- Markedly disharmonious attitudes and behaviours are present, usually involving several areas of functioning (e.g., affectivity, arousal, impulse control, ways of perceiving and thinking, and style of relating to others).
- The abnormal behaviour pattern is enduring, of long standing and not limited to episodes of mental illness.
- The abnormal behaviour pattern is pervasive and clearly maladaptive to a broad range of personal and social situations.
- The above manifestations always appear during childhood or adolescence and continue into adulthood.
- The disorder leads to considerable personal distress, but this may only become apparent late in its course.
- The disorder is usually, but not invariably, associated with significant problems in occupational and social performance.

Table 1.4: Diagnostic categories of personality disorders according to the ICD-10 and the DSM-5

ICD-10	DSM-5
Paranoid	Paranoid
Schizoid	Schizoid
	Schizotypal
Dissocial	Antisocial
Emotionally unstable	Borderline
Impulsive type	
Borderline type	
Histrionic	Histrionic
	Narcissistic
Anankastic	Obsessive-compulsive
Anxious (avoidant)	Avoidant
Dependent	Dependent

To diagnose most subtypes (see Table 1.4), clear evidence is usually required of the presence of a number of personality traits (dimensions) under each subtype according to the DSM-5 or the ICD-10:

> Personality disorders are therefore subdivided according to clusters of traits that correspond to the most frequent or conspicuous behavioural manifestations. (ICD-10, p.156)

Table A.1 in Appendix A lists the personality traits that must be present for the diagnosis of different categories of personality disorder such as borderline personality disorder.

Similar diagnostic traits (personality ratings) are used in the SCID-5-PD diagnostic tool to diagnose different types of personality disorders. Personality disorders are further grouped into clusters based on common features. In the DSM-5, personality disorders are grouped into three clusters:

- Cluster A: paranoid, schizoid, schizotypal
- Cluster B: antisocial, borderline, histrionic, narcissistic
- Cluster C: avoidant, dependent, obsessive-compulsive.

Cluster A consists of odd and eccentric personalities; cluster B describes dramatic, impulsive and emotional personalities; and cluster C includes fearful and anxious personalities (Ekselius, 2018).

1.3.2 Diagnosing Comorbidities

Neuroscientific classifications have divided disorders into organic and functional, but the general consensus later was that the organic–functional dichotomy was neither valid nor helpful (Spitzer, First and Williams, 1992). Likewise, the concept of neurosis and psychosis was previously a popular division. However, Claridge (1972) argued that psychotic symptoms were qualitatively not distinct from neurotic symptoms. It is now evident that psychotic symptoms can be a feature of neurotic disorders (Kelleher and Cannon, 2014). In additional to categorical divisions, dimensional classifications have been explored. A multiaxial approach was proposed in the DSM-IV (APA, 2000):

- Axis I: major psychiatric disorders and substance use disorders
- Axis II: personality disorders or mental retardation
- Axis III: medical or physical conditions
- Axis IV: contributing environment or psychosocial factors
- Axis V: global assessment of functioning.

The DSM-5 removed this multiaxial classification system. In hierarchies of diagnosis (another type of classification), one takes precedence and is regarded as the main disorder when two or more disorders are present. At present, psychiatry diagnoses are frequently categorised using the term ‘comorbidity’. For example, patients with a diagnosis of MDD are given a comorbid diagnosis of mixed personality disorder. Kessler (2004) reported that ‘comorbidity’ is commonly used and it reminds treating teams to focus on all disorders.

1.3.3 The Epidemiology of Personality Disorders

The prevalence rates for personality disorders depend on the study sample used. It is estimated that between 4% and 16% (around 9%) of the general population has at least one personality disorder (Huang *et al.*, 2009; Nestadt *et al.*, 1990). The prevalence of borderline personality disorder is approximately 1.6% in the general population (Lenzenweger *et al.*, 2007). Among those presenting at community mental health services, the prevalence of personality disorders ranges from 40% to 50% (Beckwith *et al.*, 2014; Newton-Howes *et al.*, 2010). The prevalence

of personality disorders ranges from 50% to 70% among the inpatient psychiatry population (Evans *et al.*, 2017), and around 25% of inpatient crisis admissions are due to personality disorders (Lewis *et al.*, 2019).

1.3.4 Course and Prognosis of Personality Disorders

Over 50% of those with a diagnosis of personality disorder failed meet the diagnostic criteria for the personality disorder over time (Skodol, 2008). Other studies have also reported a similar change in personality disorder over time (Newton-Howes *et al*., 2015). A study of the course of borderline personality disorder over 10 years found that over 88% of patients went into remission at the end of 10 years follow-up (Zanarini *et al*., 2006). Those who still had a borderline personality disorder diagnosis at the end of 10 years were found to have either substance use disorders or a history of childhood sexual abuse. In antisocial personality disorder, studies have reported remission or stability around the fourth decade of life (Robins and Regier, 1991; Rutter and Rutter, 1993). Around 38% of patients with a diagnosis of obsessive-compulsive personality disorder went into remission over two years. Of those with a diagnosis of schizotypal personality disorder, around 23% went into remission over two years (McGlashan *et al.*, 2005). The suicide rate is estimated to be around 8.5% in those with a diagnosis of borderline personality disorder (Stone *et al.*, 1987).

1.3.5 Treatment of Personality Disorders

Treatment of personality disorders may vary depending on the type of personality disorder, but most research on evidence-based interventions focuses on borderline personality disorder. Broadly, psychological therapy has been the mainstay of treatment and is preferred over psychotropic medications. Psychological therapies specifically designed for personality disorder are mentalisation-based treatment (Bateman and Fonagy, 2016), dialectical behaviour therapy (Linehan and Wilks, 2015) and schema therapy (Young, Klosko and Weishaar, 2003). Response rates to psychotherapy vary. A systematic review exploring the efficacy of psychotherapy in those with borderline personality disorder found that psychotherapies were moderately more effective than control interventions. Specifically, dialectical behavioural therapy and psychodynamic approaches were found to be more effective than control interventions (Cristea *et al*., 2016). Another recent systematic review exploring the non-response to psychotherapy in borderline personality disorder found that up to 50% of patients failed to respond to treatment at the end of 11 months (Woodbridge *et al*., 2022). Interventions reviewed in this systematic review included dialectical behaviour

therapy, schema-focused therapy, transference-focused psychotherapy, mentalisation-based therapy, generalised approaches (i.e., general psychiatric management), treatment as usual, cognitive behaviour therapy and psychodynamic psychotherapy. Interventions were provided by group or individual format, and adjunct pharmacotherapy was allowed. Medications should not be used to treat symptoms or behaviours associated with borderline personality disorder. Irrespective of any personality disorder diagnosis, medications can be used to treat comorbid disorders such as MDD according to usual guidance for the particular condition (NICE, 2009b). Short-term sedative medications such as promethazine can be used to treat borderline personality disorder patients in crisis (Taylor, Barnes and Young, 2021).

1.4 Literature

This section reviews the literature exploring the relationship between personality traits (dimensions), personality ratings, personality disorders, depressive disorders and other mood disorders in addition to comorbidity of depressive disorders and personality disorders, leading towards the hypothesis. We illustrate how neurocognition and its association with depressive disorders and personality disorders and, childhood trauma and its relationship to depressive disorders and personality disorders.

1.4.1 Personality Traits (Dimensions), Personality Ratings, Personality Disorders and Depressive Disorder

The relationship between depressive disorders and personality disorders is complex and has been the subject of much research. Few studies have specifically investigated changes in ratings of personality during the course and treatment of depressive disorder. Studies using the Maudsley Personality Inventory, which is used to measure two major dimensions of personality, namely extraversion and neuroticism, have demonstrated alterations in personality dimensions in a depressed state (Coppen and Metcalfe, 1965; Ingram, 1966; Kerr, Schapira and Roth, 1970; Biachi and Fergusson, 1977; Hirschfeld and Klerman, 1979; Hirschfeld *et al*., 1983a, 1983b).

Russell and Joseph (1988) assessed the influence of the presence of depression on various ratings of personality by investigating 42 patients attending a mood disorder clinic for the treatment of MDD. Patients were treated according to a standard algorithm. Responses to antidepressant treatment were assessed using the Hamilton Rating Scale for Depression (HAMD), and the MCMI and the Diagnostic Interview for Borderlines scales were used to

evaluate personality traits or disorders. The study found significant reductions in personality trait level scores with successful treatment. In the remitted state, patients were less likely to attract a diagnosis of personality disorder compared with when they were depressed. All 42 patients were found to have a personality disorder diagnosis during a depressed phase, although only 30 patients were diagnosed with a personality disorder in the remitted state. A similar finding was reported by Hakulinen *et al*. (2015), who conducted an individual participant meta-analysis using data from 10 prospective community cohort studies (117,899 participants). The study found that the personality traits of low extraversion, high neuroticism and low conscientiousness were associated with the development of depressive symptoms. This study also found that depressive symptoms were associated with the five-factor personality model traits of extraversion, neuroticism, conscientiousness, agreeableness and openness to experience. Another study reported that attributes such as obsessionalism, dependency, introversion, restricted social skills and maladaptive self-attributions may reflect state characteristics woven into the post-depressive personality (Akiskal, Hirschfeld and Yerevanian, 1984). This study further reported that some personalities modify the clinical expression of affective disorders and their prognosis. When borderline personality disorder patients were compared with individuals without this diagnosis or substance abuse (comparison group), those with borderline personality disorder displayed higher levels of impulsivity, novelty-seeking and harm avoidance, but lower levels of self-directedness and cooperativeness than the comparison group (Black *et al*., 2009).

A community study evaluating the relationship between personality and mood in 50 psychiatry outpatients found that traits of novelty-seeking and reward dependence were independent from mood and anxiety states, but harm avoidance and its corresponding lower-order traits reflected changes in mood and anxiety (Brown *et al*., 1992). They argued that large portions of personality may be independent of current mood, and some personality domains are inclined to change simultaneously with current mood. Subsequently, 40 patients with major depression (before and after antidepressant treatment) were examined using the Tridimensional Personality Questionnaire, wherein novelty-seeking and reward dependence were not affected by a depressed state or the treatment response status, although harm avoidance was significantly lower in antidepressant responders and was altered by a depressed state (Joffe *et al*., 1993).

In contrast, Kool *et al*. (2003) evaluated changes in personality traits (personality pathology) in depressed outpatients undergoing structured treatment using randomised parallel group design. The personality traits were measured using the 'Vragenlijst voor Kenmerken van de Persoonlijkheid' (VKP [the Questionnaire on Personality Traits]; Duijsens *et al*., 1996), which is a self-report version of the International Personality Disorder Examination (Loranger *et al*., 1994). The personality traits assessed here were paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive, passive-aggressive, sadistic and self-defeating traits (personality traits as per DSM-III-R and ICD-10 diagnoses). The study reported a significant reduction in personality traits despite the persistence of depressive symptoms with treatment. Similarly, Santor, Bagby and Joffe (1997) identified that personality traits were not merely a direct concomitant of depressive illness severity. The study used the NEO Personality Inventory, and the participants were outpatients with a depressive illness (attending a mood disorders clinic) who were undergoing algorithm-based antidepressant treatment over five weeks. The findings showed changes in personality traits (neuroticism and extraversion) but were not accounted for by changes in the severity of the depressive illness.

In a controlled trial conducted in an outpatient research setting, Tang *et al*. (2009) used the Hamilton Depression Rating Scale (HAMD) and the NEO Five Factor Inventory to assess depression and personality disorder in depressed patients who were randomised to receive paroxetine, cognitive therapy or a placebo. A greater change in personality rating scale scores was reported in patients receiving antidepressants compared with those taking a placebo, with the difference maintained after controlling for the effects of improvements in ratings of depression. Conversely, De Fruyt *et al*. (2006) assessed the five-factor model personality traits in 599 depressed outpatients over a six-month period of treatment with antidepressants and psychological therapy. The study found largely stable personality traits during the course of treatment, with only minor changes in emotional stability and agreeableness.

It had been questioned whether an accurate diagnosis of a personality disorder can be made in the presence of a depressive disorder due to personality fluctuations. Kool *et al*. (2003) suggested that diagnosis of a personality disorder can be made in the presence of depression. In contrast, Peselow *et al*. (1994) established that a diagnosis of Cluster A and Cluster C personality traits can be affected by depression, arguing that personality traits are interwoven with depressive symptoms. Similarly, Hirschfeld *et al*. (1983b) considered depression to have a major effect on emotional intensity, interpersonal dependence and extraversion.

Corruble *et al*. (2002) explored the status of character changes during recovery from depression. They argued that the chronology of personality changes associated with depression recovery had not previously been studied. The authors investigated early (first month) and delayed personality changes associated with depression recovery. They assessed 57 depressed inpatients using the Temperament and Character Inventory at admission and after one month and one year of treatment. According to the study, favourable depression outcomes were associated with early and delayed character changes. Early changes were a decrease in harm avoidance and an increase in cooperativeness and self-directedness. Delayed changes were an increase in self-directedness and a decrease in self-transcendence. In patients with a poor depression outcome, no significant personality change was observed.

1.4.2 Comorbidity: Depressive Disorders and Personality Disorders

In addition to changes in personality traits during depressive disorder treatments, comorbid personality disorders can be found in depressive disorders. A meta-analytic review conducted by Friborg *et al*. (2014) of 122 studies published between 1988 and 2010 reported participants having comorbid personality disorders in mood disorders. Notably, the authors included bipolar disorder and dysthymic disorders in addition to MDD. They reported that Cluster C personality disorders were common in unipolar depression, while Clusters B and C were comparably frequent in bipolar disorder. Comorbid personality disorder was diagnosed in up to 53% of those with a diagnosis of MDD (Pfohl, Stangl and Zimmerman, 1984). Comorbid personality disorder was diagnosed in up to 60% of those with a diagnosis of dysthymia (Pepper *et al*., 1995). Borderline personality disorder was diagnosed in around 25% of patients with a diagnosis of MDD (Pfohl, Stangl and Zimmerman, 1984) and dysthymia (Pepper *et al*., 1995). When discussing the difference between depressive disorders and personality disorders, Erkens *et al*. (2018) reported:

> Patients with persistent depressive disorder and comorbid personality disorder differ primarily in the rate of axis I comorbidity, particularly anxiety disorders, and the severity of interpersonal problems. (Erkens *et al*., 2018, p.267)

The meta-analysis found no difference between overall personality disorder diagnosis among inpatients and outpatients with mood disorders. However, inpatients were found to have high comorbidity of Cluster C personality disorders (Friborg *et al*., 2014). Other common comorbid disorders associated with MDD are anxiety disorders and substance use disorders.

Comorbid personality disorder can affect the course and treatment of depressive disorders (Reich, 2003) because it reduces treatment adherence and increases the dropout rate (McFarland and Klein, 2005; Pompili *et al*., 2009). To explore this issue, Spinhoven *et al*. (2012) investigated the prognostic value of the five-factor personality model in depression and anxiety disorders. Their cohort study included 2,566 community participants, and the study concluded that conscientiousness (of the five-factor personality model) is a prognosis predictor for anxiety and depression. Similarly, Grilo *et al*.'s (2005) two-year prospective naturalistic study concluded that participants with MDD with a comorbid personality disorder had a significantly longer time before they went into remission. Newton-Howes *et al*. (2014) conducted a systematic review and meta-analysis that evaluated the influence of personality disorders on the treatment of depressive disorders. They concluded that a coexisting personality disorder and depressive disorder doubles the odds of nonresponse to depressive disorder treatment. Banyard, Behn and Delgadillo (2021) reported that depressed patients with a comorbid personality disorder tended to improve less than depressed patients without a comorbid personality disorder after cognitive behavioural therapy for depression. In contrast, the presence of a comorbid personality disorder did not influence treatment outcomes in a study by Erkens *et al*. (2018), who compared two treatment arms: a disorder-specific Cognitive Behavioural Analysis System of Psychotherapy and a nonspecific supportive psychotherapy. In their study sample, the prevalence of comorbid personality disorder in persistent depressive disorder patients was lower (38.4%) than the prevalence in previous studies (Rothschild and Zimmerman, 2002; Russell *et al*., 2003; Maddux *et al*., 2009; Brakemeier *et al*., 2015). Similarly, personality disorder was not a significant predictor of functional outcomes in patients with MDD (Kavanagh *et al*., 2020).

In addition to the comorbidity of a personality disorder in a depressive disorder, those with a personality disorder can present with comorbid depressive symptoms or a depressive disorder. In a retrospective study of 180 inpatients with borderline personality disorder, 91% of patients were found to have an additional diagnosis, and 42% had two or more additional diagnoses (Fyer *et al*., 1988). According to some studies, more than 70% of individuals with borderline personality disorder have a lifetime history of major depressive illness (Grunhaus *et al*., 1985; Zimmerman and Mattia, 1999; Zanarini *et al*., 2003). Anxiety disorders and post-traumatic stress disorder were found to be other common disorders among borderline personality disorder patients (Zanarini *et al*., 1998). These findings suggest the comorbidity of other diagnoses in patients with a personality disorder.

1.4.3 Other Mood Disorders and Personality Traits

Other studies have investigated changes in personality traits not only in depressive disorders, but also in other mood disorders such as hypomania (Peselow, Sanfilipo and Fieve, 1995). In this study, 66 outpatients who met the diagnostic criteria for hypomania (who also had a lifetime diagnosis of bipolar disorder) and their informants were assessed. A reduction in all maladaptive personality traits except schizoid and dependent traits was reported by both patients and their informants following successful recovery from the hypomanic episode.

In summary, previous studies have recognised changes in personality traits during depressive disorder. Some authors concluded that these personality traits would not interfere with diagnosing depressive illness, although other studies contradicted this finding. The prevalence of comorbid personality disorder diagnosis in depressive disorders varied among the studies. Comorbidity is also common in personality disorders including depressive disorders. It further appeared that changes in personality ratings were not limited to depressive disorders but were also observed in other mood conditions such as hypomania.

1.5 Hypothesis

The above literature review suggests a possible theoretical and conceptual overlap between the affective state and personality ratings. This may pose difficulties in differentiating mood disorders such as MDD from personality disorders. When symptoms of personality disorders and depressive disorders are viewed together, it may be that the patient has a personality disorder and is also depressed (personality disorder with MDD), or that the patient has MDD (without a personality disorder) with manifest behaviour superficially consistent with a personality disorder, only for that to resolve with successful treatment of MDD. In practice, distinguishing those with a personality disorder (with or without MDD) from those with MDD is important because diagnosis can direct the primary focus of treatment, especially for inpatients. Risk profile and management differ in those two conditions. This differentiation is important because inpatients typically receive more intensive treatment such as antidepressants in combination with augmentation strategies and electroconvulsive therapy. These intense treatments can be offered (if correctly diagnosed as MDD) in the early part of admission to reduce the distress associated with the symptoms for patients. These intense treatments may have little efficacy in treating patients with a personality disorder (Stoffers-Winterling *et al*., 2012). In routine clinical practice, patients with MDD tend to stay longer in an inpatient setting. Conversely, for patients with a diagnosis of personality disorder, current

practice favours community-based psychological and behavioural interventions to avoid, as much as possible, reliance on medication and prolonged hospital admission (Leonard, 2004; Goodman *et al*., 2012; Van Veen *et al*., 2019). The National Institute for Health and Care Excellence (NICE, 2009b) guidelines recommend first referring borderline personality disorder patients to alternative community services such as crisis resolution and home treatment before considering hospital admission. Given the reduction in the number of inpatient psychiatry beds in countries such as the United Kingdom and Australia, the average length of an inpatient stay has been reduced. This has resulted in inpatient teams having to make a clinical diagnosis early in the course of admission and deciding management plans swiftly.

An inpatient setting may provide more unique insights as well as novelty, and longitudinal assessments have great strength. However, the setting has its own challenges, such as operational capacity and planning in bed management. The different multidisciplinary treatment teams working on inpatient treatment for patients can create multiple therapeutic climates (Tschuschke and Dies, 1994). Longitudinal assessments of patients can take place in an inpatient setting to examine particular effects of inpatient treatment and its environment, and to identify changes and the remission of symptoms over time. In an inpatient setting, patients can be assessed at regular intervals, frequent follow ups can take place, and data can be classified according to the interval of measure (Caruana *et al*., 2015). The setting also enables observations of how the patients' journey through an inpatient setting ends. The complexity and comorbidity of mental disorders in inpatients create diagnostic difficulties for staff. There is high turnover of both MDD and personality disorder patients in the inpatient setting, and staff have to make management decisions regarding patients' symptoms within a shorter period of time.

Diagnostic difficulties between MDD v. personality disorder (with or without personality disorder) can be complicated by the factor of heterogeneity. The symptom profile of both MDD and personality disorder can vary both within and between patients. MDD is associated with eight major subtypes with different levels of disability, symptom expression, comorbidity and heritability (Geddes, Andreasen and Goodwin, 2020). Widiger and Smith (2008) reported that the concept of pathoplasticity mutually influences the non-etiological relationship between psychopathology and personality. Pathoplasticity is defined as 'variability in a symptom's specific form and content, shaped by events in a patient's life' (Szilagyi and Chisolm, 2021).

Pathoplastic features are different from pathognomonic features. Clinicians make a diagnosis of MDD using pathognomonic signs and symptoms for the disorder. However, pathoplastic features can vary between individuals with the same diagnosis. In pathoplasticity, psychopathology and personality traits influence the expression of each other (Cain *et al*., 2012). This may result in a patient with a correct diagnosis of MDD presenting to clinicians with features suggestive of a different diagnosis. In interpersonal pathoplasticity, interpersonal factors (e.g., personality traits) are linked to the depressive disorder in a mutually influencing, non-etiological pathoplastic relationship (Simon *et al*., 2015). Interpersonal pathoplasticity offers an avenue for examining specific personality vulnerabilities that may be associated with the course of the depressive disorder (Cain *et al*., 2012).

In addition to diagnostic difficulties and treatment differences between MDD v. personality disorder (with or without MDD), the issue between these two disorders extends to include the pathological constructs of the disorders. Studies have investigated the aetiology of MDD and personality disorders (with or without MDD) and described the multifactorial origin. Both genetic and environmental factors contribute to the aetiology of MDD and personality disorders. As described above, the personality trait neuroticism predisposes to depressive disorder (see Section 1.4.1). Twin studies have suggested that neuroticism and depressive disorder have common genes (Fanous and Kendler, 2004). Environmental factors such as stressful life events can be associated with the onset of both MDD and personality disorders. In contrast, MDD and personality disorder may present as two distinct heterogeneous disorders as classified in DSM-5 and ICD-10. The epidemiology, course, prognosis and treatment of MDD and personality disorders are different (see Sections 1.1.5–1.1.7 and 1.3.3–1.3.5). Two broad psychopathological dimensions — internalising and externalising — have been suggested to describe non-psychotic mental disorders including personality disorder and MDD without psychosis (Markon, Krueger and Watson, 2005). Internalisation involves the expression of mental problems through negative feelings and behaviours directed at oneself, and externalising involves the expression of mental problems through negative feelings and behaviours directed at other people. MDD and anxiety disorders are predominantly considered an internalising disorder, while personality disorder is mainly considered an externalising disorder. Mental disorders falling within either internalisation or externalisation have been shown to exhibit common cognitive and emotional processing abnormalities. Some personality disorders are related to internalising disorders such as MDD because they

are primarily characterised by traits of negative affectivity (Geddes, Andreasen and Goodwin, 2020).

Three models (vulnerability model, complication model, common cause model) have been identified in the literature when discussing the relationship between depression and personality. In the vulnerability model, personality traits are said to predispose patients to the development of depressive illness (Clark, Watson and Mineka, 1994; Hirschfeld, 1994; Widiger, Verheul and van den Brink, 1999). A personality feature characterised by sociotropy (a strong desire for approval by others in the relationship) increases the risk of developing depressive disorder after adverse life events (Mazure and Maciejewski, 2003). In the complication model, a personality disorder is considered a complication of a depressive illness. The common cause model includes a shared third factor that is responsible for the onset of both the depressive disorder and the personality disorder (Santor, Bagby and Joffe, 1997). An early-onset depressive disorder may adversely influence personality development, with maladaptive behaviour arising as a consequence of illness and secondary adversity.

When differentiating a personality disorder (with or without a depressive disorder) from MDD, we explored the relationship between the two diagnoses by looking into previous assessment tools used in the literature. Previous studies have noted differences in subjective and observer-based assessments between the two disorders. Stanley and Wilson (2006) compared outpatients with a diagnosis of MDD v. MDD with borderline personality disorder using the Beck Depression Inventory (BDI) as a subjective self-rating measure and the HAMD as an observer-rated measure (observer-based rating). The study found that the two groups were rated similarly depressed in observer-rated measures, although the MDD with borderline personality disorder group reported more severe depressive symptoms on the subjective measure. Similarly, a greater level of symptom severity was exhibited by patients with MDD plus borderline personality disorder compared with those with MDD without a personality disorder (Abela *et al*., 2003). The study used six assessment scales, including the Hopelessness Scale and Self-Esteem Questionnaire. Therefore, the subjective and observer-rated discrepancy between MDD and personality disorder was observed not only between BDI and HAMD, but also in other assessment scales.

Another study reported that patients with MDD plus borderline personality disorder experienced greater severity of depressive symptoms compared with MDD without a

personality disorder in both self-rated and observer-rated measures (Comtois *et al*., 1999). The study used the HAMD, BDI and Spielberger State-Trait Anxiety Inventory.

Snyder and Pitts (1986) compared inpatients with a diagnosis of dysthymia v. borderline personality disorder using seven self-rated and nine observer-rated scales. Some of the self-rated scales used were Profile of Mood States, the Zung Self-Rating Depression scale and the Zung Self-Rating Anxiety Scale. The observer-rated scales used were the Hamilton Psychiatric Rating Scale for Anxiety, the Hamilton Psychiatric Rating Scale for Depression and the Brief Psychiatric Rating Scale. In the borderline personality disorder group, the scores were significantly higher than the mean scale score on seven out of nine self-rated scales and none of the nine observer-rated scales. The study concluded that the psychopathology reported in the self-rated scales was higher than the corresponding observer-rated scales in the borderline personality disorder group. In contrast, a community study comparing patients with borderline personality disorder plus major depressive episodes to those with major depressive episodes (without personality disorder) found that the severity and type of depressive symptoms reported on the BDI failed to differentiate the two groups (Kurtz and Morey, 2001). Bellodi *et al.* (1992) used HAMD (observer-rated) and the Symptoms Checklist (SCL-90; self-rated) to compare depressed borderline personality disorder patients and a group with major depression only and found no significant differences in the total scorings of the two instruments in the two groups. The authors argued that the depressive episodes of borderline personality disorder patients were qualitatively different from those of depression, but not in the assessment scales they used.

The mechanism underlying higher subjective reporting of depressive symptoms (in self-rating scales) by those with a diagnosis of personality disorder compared with observer-based assessments remains unknown. Negative affectivity is considered one of the main types of pathological personality traits that must be evaluated to diagnose personality disorders according to DSM-5. In negative affectivity, patients experience intense and high levels of negative emotions (e.g., anxiety, depression, guilt, shame, worry and anger), as well as behavioural and interpersonal manifestations (e.g., dependency, self-harm). Linehan (1993) argued that this discrepancy in patients with a personality disorder could be a result of the sense of invalidation (dismissing or rejecting patients' thoughts, feelings or behaviours). Study limitations in previous research may also account for subjective and observer-rated discrepancy findings. It has also been questioned whether negative emotional states such as anger and frustration, or depression itself, is associated with this discrepancy (Stanley and

Wilson, 2006). Another possibility for discrepant scores is the variation in questions and item content of self-rated and observer-rated scales (Prusoff *et al*., 1972; Carroll *et al*., 1973). Subjective self-rating scales provide a measure of the patient's perception of their own illness and recovery, and are designed for frequent use, while observer-rated scales are used as the principal outcome criterion in depressive disorders (Möller, 2000). Both subjective and observer-rated scales can be sensitive to change in the course of the depressive illness. Our study attempted to replicate and extend the above subjective and observed differences between those with a diagnosis of MDD v. personality disorder. An inpatient psychiatry setting provides closer and more frequent observations of patients by staff compared with the community setting. Therefore, subjective and objective differences can be better assessed in an inpatient setting. Hence, in line with previous work, we hypothesised the following:

- For patients presenting to inpatient services with depressive symptoms, there would be differences in subjective and observed ratings of mood between those who were discharged with a diagnosis of MDD and those with a diagnosis of a personality disorder.

1.5.1 Neurocognition

There is evidence of subjective and observer differences in mood ratings between those with MDD and personality disorder (with or without MDD), and this might manifest in other domains where subjective and objective ratings can be made. One such area is neurocognition, where global and domain-specific neurocognition are rated using comprehensive self-report subjective (e.g., perceived neurocognitive symptoms) and objective neuropsychological tests, including observations of patients' behaviours while performing the test. The cognitive areas that are commonly measured are memory, processing speed, attention, reasoning, problem solving, judgment, visual-spatial and language. Studies have been conducted into cognitive performance in depressive illness and personality disorders. Burgess (1991c) described the 'cognitive impairment' model (neurocognitive model) whereby he explored self-injury in borderline personality disorder, major depression and chronic paranoid schizophrenia. Sixty-four adults were rated according to acute depression, chronic depression, self-injurious behaviour and neuro-cognitive deficits as measured by the Cognitive Function Examination. Self-injury was not significantly correlated with acute or chronic depression but was correlated with neurocognitive deficits in borderline personality disorder and schizophrenia, thus supporting the cognitive impairment model in self-injury.

Some studies were inconclusive in finding cognitive deficits in borderline personality disorder patients using the Luria Nebraska Neuropsychological Battery (Rogalski *et al*., 1986; Moses and Maruish, 1988). Studies using the Wechsler Adult Intelligence Scale, Peabody Picture Vocabulary Test, Wechsler Memory Scale and the Boston Diagnostic Aphasia Examination on borderline personality disorder patients revealed results similar to those found in controls (Cornelius *et al*., 1989). Burgess (1990) found cognitive deficits in frontal lobe function compared with the control group in borderline personality disorder patients. Cognitive impairments, particularly in tests of planning and sequencing, have been reported in borderline personality disorder (Burgess, 1990, 1991a, 1991b, 1992; O'Leary *et al*., 1991). Patients with histrionic, narcissistic and borderline personality disorder have also been reported to have significant impairment on tests of cognition and information processing, particularly on subtests requiring multistep, multi-element associative operations (Burgess, 1992). In patients with schizotypal personality disorder, severe childhood traumatic experiences (measured using the Childhood Trauma Questionnaire [CTQ]) are associated with impairments in working memory, verbal fluency, visual and verbal learning, and memory (Velikonja *et al*., 2019).

Subjective complaints of cognitive impairment are common among those with borderline personality disorder (Ruocco, Lam and McMain, 2014). Ruocco, Lam and McMain applied a self-reported measure to assess cognitive difficulties and functioning in 26 patients with borderline personality disorder, 17 of their first-degree nonaffected biological relatives and 31 nonpsychiatric control subjects using the World Health Organization's Disability Assessment Schedule II. They found inattention and memory problems in borderline personality disorder patients and their non-affected first-degree biological relatives compared with the control subjects.

A meta-analysis of 10 studies comparing borderline personality disorder and healthy comparison groups on neuropsychological measures (attention, cognitive flexibility, learning and memory, planning, speeded processing, and visuospatial abilities) found that performance was poor across all neuropsychological domains in borderline personality disorder patients compared with the healthy control group, with mean effect sizes (Cohen's d) ranging from −0.29 for cognitive flexibility to −1.43 for planning (Ruocco, 2005). Black *et al*. (2009) compared individuals with borderline personality disorder (n = 25) to a comparison group without borderline personality disorder or substance abuse (n = 20). Borderline personality disorder subjects exhibited cognitive inhibition, perseveration, decision-making and deficits

in working memory not accounted for by intelligence quotient (IQ) differences between the groups.

Cognitive deficits in MDD have also been reported. Those with MDD can present with subjective memory symptoms such as diminished ability to think clearly, difficulty concentrating, indecisiveness and amotivation. A systematic review of cognitive functioning in the first episode of MDD found impairments in most cognitive domains, while remission from the episode led to improvements in processing speed, learning and memory, autobiographical memory, shifting, and IQ (Ahern and Semkovska, 2017). Other studies comparing MDD to health subjects have found deficits in the neurocognitive domains of processing speed, attention, executive function, learning and memory (Hasselbalch *et al.*, 2012; Murrough *et al.*, 2011). However, some studies have identified cognitive deficits even after remission from the depressive symptoms. A systematic review of the differences in cognitive performance between major depressive episode remitters and healthy controls found persistent deficits in selective attention, working memory and long-term memory in major depressive episode remitters, and those deficits worsened with repeated episodes (Semkovska *et al*., 2019).

Cognitive dysfunction in MDD is influenced by age of onset (Thomas *et al*., 2009; Wekking *et al*., 2012), education (Beblo, Sinnamon and Baune, 2011), premorbid IQ, illness duration (Elgamal *et al*., 2010) and psychiatric comorbidity (Baune *et al*., 2009). Significant correlations were found between depression severity scores and neuropsychological test performance in the domains of episodic memory, executive function and processing speed, but not for semantic memory and visuospatial memory (McDermott and Ebmeier, 2009).

A systematic review investigating the clinical relationship between cognitive impairment and psychosocial functioning found that older age and greater MDD symptom severity appeared to increase the cognition–psychosocial dysfunction relationship (Cambridge *et al*., 2018). The term ‘pseudodementia’ has previously been used to describe MDD patients — especially the elderly — with clear impairment in concentration and memory without a typical dementia profile on cognitive testing. Several features are suggestive of pseudodementia: patients’ complaints of memory issues are greater than information from a collateral source, development of depressive symptoms earlier than memory difficulties, ‘don’t know’ responses from the patient, poor involvement with neuropsychological testing, and family history of mood disorder (Harrison *et al*., 2018d).

Given that cognition is disrupted in both MDD and personality disorders, it would be interesting to observe the pattern of deficits in subjective and objective measures of neurocognition in these disorders. Subjective and objective differences in cognitive assessments have been identified in depressed patients compared with health controls (Petersen, Porter and Miskowiak, 2019), and in bipolar disorder patients compared with health controls (Miskowiak *et al*., 2016). Impairments in neuropsychological testing were found in both subjective measures (Ruocco, Lam and McMain, 2014) and objective measures (Semkovska *et al*., 2019). Discrepancies in subjective and objective cognitive assessments have been reported in other disorders such as schizophrenia (Prouteau *et al*., 2004). In those with non-demented Parkinson's disease, subjective complaints of cognitive deficits are not necessarily consistent with objective evidence of cognitive impairment, and this discrepancy is related to the presence of fatigue, depressive symptoms and frontal executive impairments (Siciliano *et al*., 2021). A subjective measure of cognitive functions, namely the Cognitive Failures Questionnaire (CFQ), was found to be correlated to stressful events (Broadbent, 1981), and it was suggested that this correlation was controlled by personality traits such as self-consciousness (Matthews and Wells, 1988) and neuroticism (Broadbent *et al.*, 1982). Correlations between some coping strategies (escape–avoidance and self-control) and CFQ scores were also found (Matthews, Coyle and Craig, 1990). In addition, Broadbent (1981) found a correlation between the CFQ and the Standard Psychiatry Interview (Goldberg *et al*., 1970). In subjective cognitive impairment, subtle changes in cognitive function are perceived by the patient before detection through objective assessment, or factors such as depressive and anxiety symptoms may contribute to the perception of cognitive problems by the patient (Buckley *et al.*, 2013; Jessen *et al*., 2014; Yates *et al.*, 2015; Hill *et al*., 2016).

Park *et al.* (2012) investigated subjective and observer-rated differences in cognitive function in those with a diagnosis of personality disorder with or without comorbid Axis I diagnoses such as MDD and anxiety disorders. The study reported that schizoid and schizotypal personality disorder were associated with subjective and objective memory dysfunction, both with and without adjustment for comorbid Axis I disorders. Those with obsessive-compulsive personality disorder showed a positive correlation with objective cognitive findings of delayed recall and subjective worry about memory functioning in the presence of Axis I disorders. However, borderline, antisocial, avoidant and dependent personality disorder scores were associated with no objective impairment but subjective memory impairment only (adjusted for with or without comorbid Axis I disorders). In contrast, Ruocco, Lam and

McMain (2014) argued that subjective assessments of cognitive function may provide important information about cognition in personality disorders that may not be measured by objective assessments. The study argued that in patients with borderline personality disorder, executive cognitive functions such as impulse control affected by stress would be better detected in subjective measures than objective cognitive measures.

The exact mechanism underlying subjective and objective memory dysfunction in personality disorders is unknown, but it is possible that those with a personality disorder may over-endorse subjective cognitive signs as a way of conveying distress despite no objective evidence of cognitive impairments. Those with personality disorder display cognitive deficits in executive functions such as impulse control (Ruocco, 2005). Impulse control difficulties may not be observable in objective cognitive testing (Krause-Utzbut *et al.*, 2013), but they may manifest in subjective testing. Those with borderline personality disorder may recall greater inattention and slow learning during childhood (Fossati, Novella and Donati, 2002), which may extend into adulthood. As a result, patients with borderline personality disorder may subjectively perceive difficulties with attention and long-term memory. Conventional neuropsychological testing does not measure cognitive impairments that emerge during periods of emotional instability and stress; therefore, subjective reports of cognitive impairment may be more reflective of the routine difficulties in attention and long-term memory encountered by patients (Ruocco, Lam and McMain, 2014). Muñozet *et al.* (2020) investigated the link between personality traits and subjective cognitive deficits in participants older than 49 years who complained of subjective memory deficits. This study used personality traits as defined by the AFF model. This study reported that participants with subjective cognitive deficits scored lower on the personality traits of neuroticism-anxiety and activity scales than the general population sample. The findings suggest a link between personality traits and subjective cognitive impairment. Murrough *et al.* (2011) described cognitive affective processing bias for cognitive impairment in MDD. In cognitive affective processing bias, patients experience distorted information processing, and the focus moves away from positive stimuli towards negative stimuli. Other proposed methods that the cognition in depressed patients affected is by abnormal response to negative feedback and decision-making, such as catastrophic responses to perceived failures (Chamberlain and Sahakian, 2006). Patients with depression may express those complaints in subjective neurocognitive testing. Neuroimaging studies in those with MDD have shown abnormalities in brain regions (e.g., hippocampus) similar to the brain regions involved with the

neurocognitive function. These deficits may appear in objective neurocognitive testing in those with MDD. Hence, this subjective and objective discrepancy may be useful for exploring the differences between MDD and personality disorder. The second hypothesis stems from the fact that subjective and objective differences are possible in the cognitive domains in those with a diagnosis of MDD and personality disorder. Therefore, based on previous research, we hypothesised the following:

- For patients presenting to inpatient services with depressive symptoms, there would be differences in subjective and objective measures of cognitive function between those who were discharged with a diagnosis of MDD and those with a diagnosis of a personality disorder.

1.5.2 Childhood Trauma

Childhood trauma has been implicated in the development of depressive disorders and personality disorders. The Freudian theory explains that the stages of libido development must be completed for personality development, and failure will result in certain features of adult personality. Findings in the Adverse Childhood Experiences Study (Felitti *et al*., 1998) showed a relationship between adverse childhood experiences and emotional state, health risks, disease burden, sexual behaviour, disability and healthcare costs (Anda and Felitti, 2009).

Several retrospective studies have reported an association between childhood trauma and chronic depression (Lizardi *et al*., 1995; Brown *et al*., 2007; Wiersma *et al*., 2009; Murphy and Byrne, 2012; Van Randenborgh *et al*., 2012). These studies defined chronic depression as depression lasting longer than two years. Prospective studies have also reported similar results (Brown and Moran, 1994; Horwitz *et al*., 2001). A study assessing depressiveness using the BDI and self-reported childhood adversities found that the association between depressiveness and childhood trauma was partly mediated by other risk factors, such as living alone, education, alcohol consumption, social support and negative affectivity (Korkeila *et al*., 2005). Multiple traumatic experiences, including childhood sexual abuse, substantially increase the likelihood of persistent self-rated depressive symptoms (Tanskanen *et al*., 2004). Responses to depressive disorder treatments are also affected by childhood trauma (Durbin, Klein and Schiwartz, 2000; Nanni, Uher and Danese, 2012). Nanni, Uher and Danese (2012) performed a meta-analysis of 10 clinical trials (3,098 participants) and found that childhood maltreatment was associated with a lack of response or remission to depression treatment (OR

= 1.43). In those with MDD, a history of childhood trauma is associated with an earlier age of MDD onset, its relapses, duration of the depressive symptoms and substandard clinical course (Bernet and Stein, 1999; Nelson *et al.*, 2017; Tunnard *et al*., 2014).

Patients with personality disorders were also found to have increased rates of trauma, including childhood trauma (Johnson *et al*., 2000; Yen *et al*., 2002; Widom, Czaja and Paris, 2009; Lobbestael, Arntz and Bernstein, 2010; Zhang *et al*., 2012). Lobbestael *et al.* (2010) explored different types of childhood trauma and their relationship to personality disorders. The study found that sexual abuse was associated with paranoid, schizoid, borderline and avoidant personality disorders; physical abuse with antisocial personality disorder; emotional abuse with paranoid, schizotypal, borderline and cluster C personality disorders; and emotional neglect with histrionic and borderline personality disorders. All types of childhood trauma were significantly associated with schizotypal personality disorder, while severe sexual abuse was associated with a higher cognitive–perceptual load (e.g., ideas of reference, odd ideas), and severe emotional neglect was associated with interpersonal scores such as excessive social anxiety (Velikonja *et al*., 2019).

In addition to the association between childhood trauma, depressive illness and personality disorders described above, studies have reported an increased risk of developing a depressive illness and personality disorders in those exposed to childhood trauma (Kessler, Davis and Kendler, 1997; Molnar, Buka and Kessler, 2001; Tanskanen, 2004; Widom, DuMont and Czaja, 2007; Lobbestael, Arntz and Bernstein, 2010). In particular, emotional abuse was found to increase the lifetime risk of developing depression (Chapman *et al*., 2004). Nanni, Uher and Danese (2012) conducted a meta-analysis involving 16 epidemiological studies (23,544 participants) and found that childhood maltreatment was associated with an increased risk of developing recurrent and persistent depressive episodes (OR = 2.27). A community-based longitudinal study found that emotional neglect was associated with the development of avoidant personality disorder (Johnson *et al*., 1999, 2000).

Chronic depression with comorbid personality disorder has been well acknowledged (Klein *et al*., 1999; Melartin *et al*., 2002; Rothschild and Zimmerman, 2002; Hellerstein *et al*., 2010). Those with chronic depression have a higher rate of comorbid personality disorder (48.6%) compared with episodic depression (28.7%), and the common types of comorbid personality disorders in chronic depression are borderline, antisocial and avoidant types (Rothschild and Zimmerman, 2002). Avoidant and dependent personality disorders are common in patients

with chronic depression compared with the general population (Blanco *et al*., 2010). The level of emotional abuse had a moderating effect on the association between avoidant personality disorder and chronic depression (Klein *et al*., 2015). This comorbidity between chronic depression and personality disorders may be a result of common underlying factors like early trauma and the existence of self-generated interpersonal stress, which may explain the development and maintenance of these disorders (Klein, Fassbinder and Schweiger, 2014). Hengartner *et al*. (2015) reported that childhood emotional abuse, emotional neglect, physical abuse, physical neglect and sexual abuse are significantly associated with the personality trait neuroticism. Those with MDD are also found to have higher rates of neuroticism compared to the control group (Hirschfeld and Klerman, 1979), and this personality trait is associated with poorer outcomes in MDD (Quilty *et al*., 2008; Duggan, Lee and Murray, 1990; Weissman, Prusoff and Klerman, 1978). Other personality traits, such as extraversion, also mediate the relationship between childhood trauma and depression (Hovens *et al*., 2016). Personality factors may intervene between the severity of MDD and the sequel of childhood trauma (Hayashi *et al.*, 2015; Toda *et al.*, 2016). These findings suggest there is a link between childhood trauma in the constructs of MDD and personality disorders. Personality scores on neuroticism are significantly correlated with the scores on the BDI, which is a measure of depressive symptom severity (Buhan, Rehman and Ooi, 2017). The BDI, and an assessment tool of childhood trauma, the CTQ, are both self-reported subjective assessment tools.

Subjective reporting of childhood trauma has been explored in both MDD and personality disorders. A study exploring childhood trauma using the Emotional and Physical Abuse Questionnaire (self-reporting questionnaire) identified that a higher proportion of women (83% in the study sample) who experienced major depression during their lifetime defined themselves as being abused (subjectively) during their childhood (Carlin *et al*., 1994). Patients with a self-reported history of childhood sexual and emotional abuse were at increased risk of suicidal behaviour (Gould *et al*., 1994). Similarly, self-reported history of childhood abuse was associated with antisocial and suicidal behaviours (Bensley *et al*., 1999). Self-reports of childhood abuse were associated with a significant increase in risk for drug abuse (Widom, Weiler and Cottler, 1999). Antisocial, drug abuse and suicidal behaviours can be observed in personality disorders. Battle *et al*. (2004) compared the rate of childhood trauma assessed using semi-structured interview by personality disorder patients relative to those with MDD in a community sample. The study hypothesised that personality disorder patients would report higher rates of abuse and neglect compared with those with MDD. The results indicated

that rates of childhood trauma among patients with personality disorder were high (73% reported abuse; 82% reported neglect) compared with those with MDD (51% reported abuse; 68% reported neglect). The study concluded that personality disorder participants were significantly more likely to report several types of childhood trauma compared with those with MDD. Therefore, it appears that subjective reporting of childhood trauma could be a way of exploring the differences between MDD and personality disorders. As described above, previous research has also suggested common underlying factors, such as early childhood trauma, for the comorbidity of depressive disorders and personality disorders. Childhood trauma could be a cause or a confounder for MDD and personality disorders. For this reason, our study seeks to measure the occurrence and severity of childhood trauma to determine whether there are differences, and whether these differences can explain the subjective and observer-rated pattern. Consequently, we hypothesised the following:

- There would be differences in the occurrence and severity of reported childhood trauma between those with personality disorders and those with MDD.

1.5.3 Staff Observations

It is estimated that around 20% of those in inpatient psychiatric settings meet the diagnostic criteria for borderline personality disorder (APA, 2001). The multidisciplinary team approach in mental healthcare plays a key role in assessing and managing patients who are admitted to the psychiatry inpatient setting. In a multidisciplinary setting, different opinions from staff members around the diagnosis of a patient affect the final clinical diagnosis at a given time, and this clinical diagnosis given by the team affects the management pathways. Confusion arises when those with an actual diagnosis of MDD (without personality disorder), with manifest behaviour superficially consistent with a personality disorder, influence staff decision-making.

A variety of factors may affect staff deciding on a patient's diagnosis, including individual staff members' training and experience, and the empathy of the staff towards their patients. Empathy as a process was first developed by the German philosopher Edith Stein (1917–1970) and is identified as a combination of emotional, psychological, sociological, philosophical, aesthetic, interpersonal and transcendent aspects (Davis, 2003). Here, projecting one's feelings onto another is recognised as a psychological aspect of empathy. Inpatient mental health professionals generally found it difficult to interact with patients with personality disorders. Mental health professionals struggled to show empathy and treat this

patient group because of their behaviours, and those behaviours may adversely affect interpersonal relationships with the nursing staff (Stuart and Laraia, 2005). A qualitative study that explored nursing responses towards patients with borderline personality disorder described their behaviours as 'challenging and difficult', 'manipulative, destructive and threatening behaviour', 'preying on the vulnerable resulting in splitting staff and other service users', and 'boundaries and structure' (McGrath and Dowling, 2012). Terms that were often used to describe borderline personality disorder included 'difficult', 'dangerous', 'treatment-resistant', 'manipulative', 'demanding' and 'attention seeking' (Aviram, Brodsky and Stanley, 2006).

Acute inpatient wards can be a challenging environment for staff due to a lack of service provisions, and this may affect their decision-making, including their diagnostic formulation for individual patients. It was found that, in 2016, 93% of inpatient psychiatry wards were operating above the Royal College of Psychiatrists' recommended 85% bed occupancy rate, leading to challenging environments (Crisp, Smith and Nicholson, 2016). Different tools have been used to assess interactions between staff and patients. The Staff–Patient Interaction Response Scale was developed to assess verbally expressed empathy of staff towards their patients (Adriaansen, Van Achterberg and Borm, 2008). This scale has been used in research studies assessing expressed empathy towards personality disorder patients by mental health staff. The nursing Interactive Observation Scale for Psychiatric Inpatients is another scale that shows significant test–retest reliability and concurrent validity, showing a significant correlation with the Brief Psychiatry Rating Scale total score (Pedrão *et al*., 2001). The Nurses' Observation Scale for Inpatient Evaluation (NOSIE-30) is another 30-item scale developed for the behavioural and observational rating of psychiatric inpatients.

In clinical practice, multidisciplinary staff who accurately distinguish those with personality disorders (with or without MDD) from those with MDD can direct the team towards appropriate management pathways, and this would affect intense treatment decisions such as electroconvulsive therapy. Therefore, it would be interesting to determine the differences between MDD and personality disorder using not only quantitative methods, but also qualitative methods. Subjective and observer-rated differences between those with MDD and those with a personality disorder may be observed in both quantitative and qualitative assessments. Westen *et al.* (1992) suggested that borderline personality disorder patients (with or without MDD) can be distinguished from MDD alone (without personality disorder) by the quality of their depressive experiences. The study reported that qualitative experiences such

as anger, fear, desperation, loneliness, dependency and interpersonal concerns were marked in those with a diagnosis of borderline personality disorder (with or without MDD) compared with those with MDD alone. The key dimensions on self-report measures in which borderline personality disorder patients with depression differed from those with depression (without a personality disorder) were anger and hostility (Joyce *et al*., 2002). Chaotic interpersonal relationships, self-destructive behaviours, impulsivity and substance misuse have been reported as the differences between borderline personality disorder patients and non-borderline personality disorder patients (Gunderson and Kolb, 1978; Kroll *et al*., 1981), and these can be assessed as qualitative behaviours.

Differences between multidisciplinary inpatient staff responding to patients with a diagnosis of personality disorder and those responding to another disorder, such as a depressive disorder, have been reported. Nursing staffs' perceptions of patients with a diagnosis of borderline personality disorder have been reported as powerful, challenging and destructive (Markham and Trower, 2003; Woollaston and Hixenbaugh, 2008). In contrast, Holmqvist (2000) found that nursing staff were more likely to respond with warm and helpful feelings towards those with neurosis, and for patients with psychosis, they were more likely to respond with sadness and self-critical feelings. It is possible that the staff may consider patients showing challenging behaviours as having a diagnosis of personality disorder rather than a depressive disorder. Consequently, it would be interesting to determine the relationship between the two conditions using staff qualitative data that mainly focus on staff diagnoses. Therefore, we hypothesised the following:

- Ward staff would more readily reach a diagnosis of personality disorder compared with formal research assessments, and such diagnoses would be applied to those with challenging behaviour.

1.6 Objectives

On the basis of the above hypotheses, we sought to investigate the following objectives:

1. To explore patterns of change in observed and subjective ratings of mood to determine whether there were differences between those with a diagnosis of personality disorder and those with MDD.

2. To explore patterns of change in the objective and subjective ratings of cognitive functions to determine whether there were differences between those with a diagnosis of personality disorder and those with MDD.
3. To explore differences in the subjective reporting of childhood trauma to determine whether there were differences between those with a diagnosis of personality disorder and those with MDD.
4. To identify qualitatively the factors that predict diagnosis at discharge in inpatients presenting with features of depression.
5. To determine how the team's perceptions of the diagnosis on admission, over the span of admission and at discharge relate to the structured assessment of the diagnosis at discharge.

To achieve these objectives, we conducted a structured observational study in which we identified all patients presenting to inpatient services with features suggestive of MDD, the severity of which was assessed soon after admission. At discharge, patients underwent a structured diagnostic interview exploring depressive illness and personality disorders. We reviewed the behaviours and views of the treating care team for the span of the admission to identify whether any components were predictive of diagnosis at discharge. Chapter 2 describes the research methodologies we used. Quantitative data are presented and discussed in Chapters 3–5, and qualitative data are presented in Chapters 6 and 7.

CHAPTER 2: METHODOLOGY

2.1 Background

This chapter describes the quantitative and qualitative research methodologies that were used to achieve the objectives outlined in Chapter 1. The qualitative methods are described further in Chapters 6 and 7.

2.2 Study Design

The main study was a structured observational design. Patients with depressive symptoms were recruited from three acute adult psychiatry inpatient wards at St Georges Park, Cumbria, Northumberland, Tyne and Wear (CNTW) and National Health Service (NHS) Foundation Hospital Trust.

2.2.1 Inclusion Criteria

Patients were eligible for inclusion if they were aged 18 years or over and had been an inpatient for more than 72 hours, permitting identification of depressive symptoms by professionals at the formulation meeting. Participants were required to be capable of providing written informed consent (literate adult) and were assessed for their capacity to make an informed decision to take part in the study at the time of recruitment (initial interview). Recruited participants were again asked whether they wanted to continue taking part in the study at subsequent assessments, and if in doubt, capacity was re-assessed. Patients who were lacking in capacity to make an informed decision to take part in the study at the initial interview were not recruited to the study subsequently, despite regaining the capacity during the ward stay. Depressive symptoms were recognised by the treating care team staff at the formulation meeting and then referred to the research team. The research team regularly reminded the treating care team staff who were participating in the meetings of the inclusion and exclusion criteria of the Relationship between Affective state and Personality ratings in Inpatient Depression (RAPID) study. It was explained to the staff members that if they came across depressive symptoms (as described in Table 1.1) under the criteria for diagnosing MDD (DSM-5) or a depressive episode (ICD-10), they should refer the patients to the research team after applying the inclusion and exclusion criteria of the study. We neither specified the severity of the depressive symptoms or signs nor advised them to use any standard assessment tools to determine the symptoms. Our aim was to conduct an observational study; thus, we

ensured the research team did not influence the decision-making of the treating care team at the meetings.

2.2.2 Exclusion Criteria

Patients were ineligible for inclusion if they had a primary established diagnosis of a psychotic illness (other than MDD with psychosis), bipolar disorder, regular use of illicit psychoactive substances, alcohol or drug abuse (at the time of admission) or significant intellectual impairment (moderate, severe or very severe learning disability). The presence of excluding diagnoses was confirmed by a review of case notes and clarified with the responsible consultant psychiatrist if in doubt. Patients who were already detained under the *Mental Health Act* (England and Wales 1983, revised 2007) by the time of referral to the research team were included only if they consented (to take part in the study) and were found to have the capacity to make a decision on taking part in the study at the initial interview.

2.2.3 Outcome Measures

The primary outcome measures for the study were:

1. a quantitative assessment of data to identify mood and cognitive factors that predict the diagnosis at discharge
2. a quantitative assessment of MDD and personality disorder data with respect to Childhood Trauma Questionnaire findings
3. a qualitative assessment of data to identify any staff observational differences in those with a diagnosis of MDD compared with personality disorder.

2.2.4 Patient Identification

Each inpatient ward consisted of two inpatient treating teams (two multidisciplinary teams) under two different consultant psychiatrists. Potential participants were identified by the respective inpatient treating care team that the patient was allocated under, and referred to the research team if they were considered eligible. In routine practice, all patients who are admitted to CNTW NHS Foundation Trust inpatient wards are discussed at a formulation meeting within 72 hours of their ward stay, and those meetings are attended by the respective multidisciplinary team. Staff from all the disciplines (e.g., nursing, occupational therapy, psychology) were informed of the study and the entry criteria and were asked to identify potential subjects. The research team regularly visited the wards to remind the inpatient teams

about the importance of subject identification and recruitment. Posters about the project were also displayed in the ward (see Appendix E).

2.2.5 Patient Recruitment

Following the identification of a potential subject, those deemed eligible by the research team were offered an information pack that clearly and briefly explained the nature of the research and described what was required of the participants. In the information provided, patients were asked to contact either the staff of their treating care team or one of the research team members directly if they were interested in taking part. The research team operated an opt-out policy in which they routinely followed up the initial written invitation with a brief meeting unless the patient indicated that they did not want this to happen.

If patients expressed an interest in joining the study, an appointment was made for them to meet a member of the research team in an appropriate clinical setting. This interview was conducted by a member of the research team and provided an opportunity for the patient to ask questions and seek clarification about any concerns they had about the study. If the patient wanted to proceed, informed consent was documented. In cases of enrolment, patients received a copy of the patient information sheet (see Appendix E) before consent was sought.

2.3 Assessments and Ratings

The study applied various observer and self-rated scales to assess mood and cognition in depressive and personality disorders, together with assessments of childhood trauma and qualitative methods. Individual rating scales that were used are described below. The choice of mood and cognitive tests was informed by the domains most notably affected in mood disorders, as well as tasks that have a strong research base and can be readily implemented in a clinical care setting. For example, one of our assessment tools, Digit Symbol Substitution Test (DSST), had been used to assess cognitive performance in patients with MDD following treatment with an antidepressant (Baune, Sluth and Olsen, 2018). Further, the assessment tools we used have higher reliability and validity, and some (HAMD, BDI, Clinical Global Impression [CGI]) were already in use in the acute adult wards where the study was conducted and would suffice the training requirements of the staff. In addition, we aimed to select assessment tools that assessed subjective, observer-based and objective ratings.

2.3.1 Depressive Disorder Ratings

The severity and degree of change in the depressive disorder and functioning were assessed using the following scales:

a) The Hamilton Rating Scale for Depression (Hamilton, 1960): The HAMD is designed to screen for depressive disorders and to assess the severity of depressive illness. The HAMD consists of 21 items, and scoring is based on the first 17 items. The HAMD has a sensitivity of 86.4% and a specificity of 92.2% (Strik *et al*., 2001) for screening depressive disorders. The HAMD was found to have adequate internal reliability (Bagby *et al.*, 2004). It is a psychiatric interview administered by an experienced clinician and takes 15–20 minutes to complete. Out of 17 items, eight items are scored on a five-point scale ranging from 0 = not present to 4 = severe, and nine items are scored from 0 to 2. It is a widely used measure to assess the severity of a patient's depressive disorder before, during and after treatment. The response to treatment is defined as a reduction in the total score (sum score) of 50% or greater, and remission from the depressive disorder is considered when the total score becomes less than 7. The HAMD total scores from the first 17 items define the level of the depressive disorder as follows:
    - 0–7 = normal
    - 8–13 = mild depression
    - 14–18 = moderate depression
    - 19–22 = severe depression
    - ≥ 23 = very severe depression.

b) The Beck Depression Inventory (Beck *et al*., 1961, revised 1996): In practice, the BDI is used as a screening questionnaire to identify depressive illness or to measure the severity of depressive disorder. The BDI-II (third version) was used in our study. It is a self-reported inventory of 21 items, with a sensitivity and specificity of 93% and 82% respectively (Beck, Steer and Brown, 1996). It evaluates key symptoms of MDD ranging from mood symptoms to somatic symptoms. The recall period is two weeks for major depressive symptoms, and the criterion validity is positively correlated with the HAMD scale (r = 0.71). According to the cut-off score, depression severity is divided into four categories: minimal, mild, moderate and severe. Scores above 20

indicate depressive illness in non-clinical populations (Kendall *et al.*, 1987). The cut-off scores are as follows:

- 0–13: minimal depression
- 14–19: mild depression
- 20–28: moderate depression
- 29–63: severe depression.

c) Clinical Global Impression scale (Guy, 1976, 2000): The CGI scale is a clinician-rated seven-point scale that measures symptom severity and treatment response (subscales: Q1: severity of illness; Q2: global improvement; Q3: efficacy index). It is an observer-based rating scale. Q1 asks the clinician: 'Considering your total clinical experience with this particular population, how mentally ill is the patient at this time?' and is rated on the following seven-point scale: 1 = normal, not at all ill; 2 = borderline mentally ill; 3 = mildly ill; 4 = moderately ill; 5 = markedly ill; 6 = severely ill; 7 = among the most extremely ill patients. It is rated using observed and reported symptoms, behaviours and functions (average severity level) in the past seven days (Busner and Targum, 2007). Q2 asks the clinician: 'Compared to the patient's condition at admission to the project [prior to medication initiation], this patient's condition is? 1 = very much improved since the initiation of treatment; 2 = much improved; 3 = minimally improved; 4 = no change from baseline (the initiation of treatment); 5 = minimally worse; 6 = much worse; 7 = very much worse since the initiation of treatment'. The CGI scale is a valid clinical outcome measure and is sensitive to change when comparing the admission and discharge CGI severity ratings (Berk *et al.*, 2008). Q3 is used to assess the treatment effects of psychotropic medications and its side effects.

2.3.2 Diagnostic Assessments

The SCID-5 is currently accepted as the gold standard in psychiatric diagnosis (Segal and Williams, 2014). It is used in research settings where the accurate diagnosis of primary and comorbid disorders is required for the study's eligibility criteria (Brodey *et al.*, 2018). The SCID directly adheres to DSM criteria. It has strong test–retest and inter-rater reliability for most psychiatry diagnoses (Lobbestael, Leurgans and Arntz, 2011). Other diagnostic instruments are frequently validated using the SCID as the gold standard (Germans *et al.*, 2010).

Diagnostic assessments were performed using the SCID-5 Research Version (SCID-5-RV; First *et al*., 2015b), which is a semi-structured interview used for diagnosing the major DSM-5 diagnoses. The SCID-5-RV is streamlined for use in research studies of selected disorders that incorporate inclusion and exclusion criteria. It has separate modules correlating to categories of DSM-5 diagnoses. In the booklet, symptoms are coded as present, sub-threshold or absent. The SCID-5-RV interview must be administered by a clinician, trained mental health professional or trained non-clinician research assistant.

2.3.3 Personality Disorder Diagnosis

Personality disorder diagnostic assessments were performed using the SCID-5 Personality Disorders (SCID-5-PD; First *et al*., 2015a), which is a semi-structured diagnostic interview used to assess DSM-5 Personality Disorders. The SCID-5-PD includes a clinical interview and self-report screening questionnaire for patients called the SCID-5 Personality Disorders Screening Personality Questionnaire (SCID-5-SPQ; First *et al*., 2015c). The SCID-5-SPQ takes around 20 minutes to complete, and its use is optional. It serves as a self-report screening tool to reduce the time of the SCID-5-PD clinical interview. The SCID-5-SPQ has 106 self-report questions that correspond directly to each first question in the full SCID-5-PD. In the SCID-5-SPQ, screening questions are listed with yes and no options. Personality disorder symptoms are coded as present (threshold), sub-threshold or absent in the SCID-5-PD. Friborg *et al*. (2014) concluded that comorbid personality disorder was less commonly reported when the diagnosis was based on structured clinical interviews compared with self-reported measures, and that structured clinical interviews were beneficial in identifying false positive diagnoses of personality disorders. We determined group allocation using interviewer-rated assessments of personality (SCID-5-PD) rather than the self-reported personality questionnaire (SCID-5-SPQ) alone. We applied diagnostic tools (SCID) at discharge instead of admission to minimise bias.

2.3.4 Neurocognitive Ratings

a) The CFQ (Broadbent *et al*., 1982): The CFQ is a 25-item self-rating scale used to assess cognition. Broadbent *et al*. (1982) developed the CFQ to assess the frequency of everyday errors (memory, cognition), with each item in the scale referring to a particular type of mistake (e.g., forgetting names). It also measures daily life attentiveness such as the frequency of lapses in attention (Chan, 1999; Bridger, Johnsen and Brasher, 2013). The participant is asked to mark the frequency of errors

(under each item) in the past six months. Scoring for each item ranges from 0 (never) to 4 (very often), and the final scoring is divided into five categories:

- T = total
- D = distractibility
- M = memory
- B = blunders
- N = names.

The CFQ is unrelated to standard personality and intelligence scales (Broadbent *et al*., 1982), and its scores are not correlated with relevant demographic factors such as age. The questionnaire has acceptable internal consistency, retest reliability and face validity (Knight *et al*., 2004).

b) The Digit Symbol Substitution Test (Lezak, Howieson and Loring, 2004): The DSST version 1 was used (DSST, 2005). The test contains digit-symbol pairs, and participants are required to write down a corresponding unique symbol under each digit. They must fill in as many as possible in 90 seconds. The number of correct digit-symbols is then counted, with one point given for each correct answer. Participants should first complete a practice. It is sensitive to cognitive dysfunction, changes in cognitive functioning, impairments and improvements in processing speed, executive functioning, working memory, and real-world functional outcomes (Jaeger, 2018). It requires response speed, sustained attention, visual spatial skills and set shifting, and it is part of the Wechsler Adult Intelligence Scale. The DSST has high test–retest reliability (Matarazzo and Herman, 1984). DSST has been widely used in psychiatry research. The DSST was used as an objective measure of cognitive functions to measure the relative effect of antidepressants on cognitive dysfunction in patients with MDD (Baune, Brignone and Larsen, 2018).

The CFQ and the DSST formed a brief assessment of subjective and objective neurocognitive functions. They were added to identify subjective and objective neurocognitive measures in MDD and personality disorders. Emerging research suggests that cognitive abilities may differ in depressive disorders and personality disorders (Beaujean, Parker and Qiu, 2013; Czekóová *et al*., 2020), so the CFQ (subjective assessment) and the DSST (objective assessment) were included.

2.3.5 Assessment of Childhood Trauma

The Childhood Trauma Questionnaire (CTQ) is a self-completed screening tool used to establish traumatic childhood experiences (Bernstein and Fink, 1998; Bernstein *et al*., 2003). The short-form CTQ is a 28-item self-report inventory administered to adults and adolescents to provide screening for childhood trauma, including abuse and neglect history (Bernstein and Fink, 1998). The original 70 items in the CTQ were used to create subsequent versions (34 items and 28 items). The CTQ 34-item version was converted into the 28-item short version (Bernstein *et al*., 2003). The CTQ provided instructions to participants to report on their trauma experiences before the age of 18 years old. The CTQ is phrased in both the objective and subjective manner. For example, one of the objective non-evaluative items was 'When I was growing up, someone touched me in a sexual way or made me touch them', and a subjective evaluation item was 'When I was growing up, I believe I was sexually abused' (Walker *et al*., 1999a, 1999b). See Chapter 5 for further information on the CTQ. Scoring for 28 questions is subdivided into five groups for each question:

1. never true
2. rarely true
3. sometimes true
4. often true
5. very often true.

The results are then subcategorised into emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect. If a participant gives a cumulative score of five within a subcategory, it means no reported abuse under the equivalent subcategory. Reliability and validity of the CTQ have been explored (Bernstein *et al*., 1994, 1997).

The CTQ has demonstrated high internal consistency (Cronbach's alpha for the factors range from 0.79 to 0.94). It has high test–retest reliability (intraclass correlation = 0.88) and convergence with the Childhood Trauma Interview (Bernstein *et al*., 1994). We extracted individual childhood trauma scores under emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect. The CTQ can be used with a minimisation/denial scale, which is used to detect a response bias by the under-reporting of childhood trauma (Church *et al*., 2017).

2.4 Qualitative Methods

We further applied qualitative research methods, which are broadly divided into four types:

- grounded theory (inductive process of generating theory from data)
- ethnography (observations as they naturally unfold)
- phenomenology (focus on people's subjective experiences and interpretations)
- field research (group of qualitative methodologies used in the field of the natural environment).

In our RAPID study, we used field research involving a group of qualitative research methodologies (see Chapters 6 and 7 for further details).

2.4.1 Staff Observations

Staff observations are a key process in acute psychiatry wards. These observations are mainly made by nursing staff with a view to monitor risks and provide therapeutic engagement. In the UK, patients admitted to acute psychiatric units are on three levels of standard observations (Department of Health, 1999): general observations (checked hourly); intermittent observations (checked every 15–30 minutes) and constant observations (remains within eyesight of staff at all times). Staff observations take place 24 hours a day, 7 days a week. In addition to the standard observations (related to risk management), multidisciplinary staff are further involved in one-to-one therapeutic and treatment engagements, assessments and family engagement, and in group interactions with the patients. Previous research studies regarding the effectiveness and validity of formal and informal staff observations in mental health wards are limited, and these deficits are highlighted in previous studies (Manna, 2010; Papastavrou, Efstathiou and Charalambous, 2011). Myklebust and Bjørkly (2019) investigated the quality and quantity of staff–patient interactions in mental health wards as recorded in progress notes under nursing documentation. The study used the Scale for the Evaluation of Staff–Patient Interactions in progress notes to assess the clinical records. It found that acute psychiatric wards reported more staff–patient interactions in progress notes, but further research was required to validate the scale. Therapeutic interactions where staff tried to be attuned to patients' requests were rarely described in nursing clinical records in this study.

2.5 Study Conduct and Processes

The total duration of the study was 20 months (1 May 2016 to 31 December 2017). In terms of individual participant engagement, discharge from the ward marked the end of a participant's involvement with the study, so the duration in the study was directly determined by the duration of their admission. The CNTW NHS Foundation Trust target for discharge from inpatient services is 21 days. Regardless of their duration of stay, participants were assessed by the research team at enrolment and discharge only. No changes to treatment or clinical management plan decisions were made as a result of taking part in our study.

2.5.1 Subject Characteristics and Mood Assessments

Quantitative data for subject characteristics and mood assessments were acquired from patient notes, recruited patients and treating care teams through the application of assessment scales. For affective state (mood) assessments, the observer-rated (HAMD and CGI) and self-rating scales (BDI), which focus on depressive symptoms, overall functioning, and antecedent stressors and behaviours, were completed soon after enrolment and at discharge. Personality ratings were assessed using the SCID-5-PD to come up with a personality disorder diagnosis. Diagnostic assessments were performed following the treating care team's decision to conduct a discharge planning meeting. In usual practice, CNTW NHS Foundation Trust patients are discharged from inpatient care after the discharge planning meeting. Decisions to hold those discharge planning meetings were made at the daily multidisciplinary ward rounds (Monday to Friday) conducted by treating care teams. The research team visited the wards regularly to identify whether those decisions were made, and SCID assessments were then performed for those awaiting discharge planning meetings. Our aim was to conduct the SCID assessment when the patient was deemed to be in a state of early remission from depressive symptoms, as identified by the treating care teams. The SCID was conducted by one assessor, and the HAMD (at discharge) and the CGI (at discharge) were conducted by a different assessor. Their findings were not disclosed to each other. Therefore, discharge HAMD and CGI assessors were blind to the SCID findings. The BDI was completed by the patient following admission (during enrolment into the study) and at discharge. The research team and treating care team staff completed the HAMD and the CGI during the initial interview. The discharge HAMD and the CGI were completed by a consultant psychiatrist responsible for that particular patient from the treating care team, or by the ward medical and nursing staff, discharge facilitators (nursing staff) or care co-ordinator (at the discharge meeting) of

the patient from the treating care team. The HAMD and the CGI were conducted by staff who had prior training and had applied the questionnaires in their clinical practice in the past. The research team asked those staff members whether they had used the questionnaires before; if they had, they were allowed to proceed with its usage in the study. In routine practice, the three acute adult wards use both the HAMD and the CGI for patient assessments — especially patients in receipt of electroconvulsive therapy treatment in this acute setting. Rating scale data were collected at a time deemed clinically appropriate rather than at a fixed point in the day. All 60 SCID-5-PD assessments were completed by the principal investigator, who had completed the psychiatry training and was working as a consultant psychiatrist at the unit. The principal investigator, who had undertaken training on SCID-5-PD and SCID-5-RV, completed 59 of 60 SCID-5-RV assessments, and the remaining SCID-5-RV assessment was completed by a senior psychiatry trainee under the supervision of the principal investigator. Quantitative data obtained for baseline sample characteristics included patients' age, sex, duration of hospital stay, reasons for admission and whether they had been on psychotropics upon admission to the acute ward.

2.5.2 Neurocognition

Selected neurocognitive functions were assessed using the CFQ (Broadbent *et al*., 1982) and the DSST (Lezak, Howieson and Loring, 2004), with the CFQ providing a subjective rating of function (expressed as total value of distractibility, memory, blunders and name scores) and the DSST providing an objective assessment. Following enrolment in the study, patients underwent an initial assessment that included completion of the CFQ and the DSST. No further study procedures were conducted until the patient was ready for discharge, at which point a diagnostic assessment was conducted (SCID-5-PD and SCID-5-RV) and the neurocognitive test battery repeated (CFQ and DSST). The CFQ was completed by recruited patients, and the DSST was conducted by a research team member. Patients were given instructions on how to complete the CFQ questionnaire, and sufficient time was provided for them to complete it. All DSST assessments were conducted by trained senior mental health staff from the research team.

2.5.3 Childhood Trauma

The CTQ was given to enrolled participants during their ward stay when deemed appropriate. The CTQ was distributed when the participants appeared to be in a stable state and were willing to answer potentially sensitive questions. Therefore, the CTQ was distributed among

participants awaiting discharge planning meetings. It was delayed when the participants were in a crisis period during their ward stay. Instructions on how to complete the questionnaire was explained to participants in a one to one meeting with the research staff member, and the patients were requested to complete the questionnaire within two days.

2.5.4 Staff Observations

Staff members' opinions on diagnosis was sought using a staff questionnaire. The primary nurse (or equivalent) and a key member from the multidisciplinary team (e.g., psychologist) involved in providing clinical care to the recruited patient (from the treating care teams) were given this staff questionnaire. We aimed to provide the questionnaire to the staff member closer to their patient's discharge, but it was not always practically possible. The qualitative phase of gathering information took place throughout the admission. Key behaviours recorded in the patient notes by staff (clinical records) were extracted, and key statements made by treating care staff about patients' behaviours at multidisciplinary ward rounds were also extracted from clinical records. Figure 2.1 summarises the study methodology. Table 2.1 summarises the assessment interventions, the frequency of the assessments conducted and the average time taken to complete the assessments.

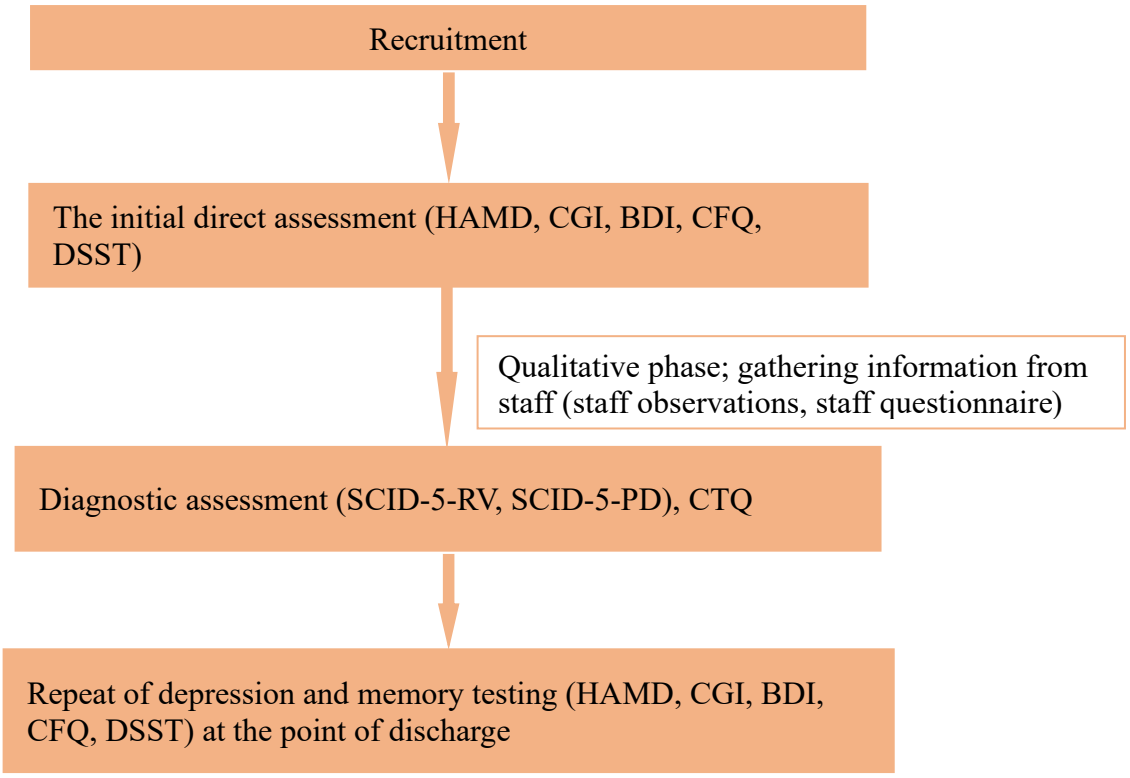

Figure 2.1: Summary of study methodology

Table 2.1: Assessment procedures

Assessment/intervention	Number of assessments received by each participant	Average time taken per assessment
Diagnostic interview to confirm the diagnosis according to SCID-5-RV and SCID-5-PD	Once (at discharge)	1–3 hours
Consent	Once (admission)	10 minutes
BDI	Twice (admission and discharge)	5 minutes
HAMD	Twice (admission and discharge)	10 minutes
CGI	Twice (admission and discharge)	5 minutes
CTQ	Once (closer to discharge)	5 minutes
CFQ	Twice (admission and discharge)	5 minutes
DSST	Twice (admission and discharge)	5 minutes
Qualitative data gathering	Once	Throughout patients' stay from staff observations, staff questionnaire and clinical records

In summary, after consent was sought, the initial direct assessment (HAMD, CGI, BDI, CFQ, DSST [see Appendix E]) was followed by a qualitative phase in which information was gathered from the treating care team (staff questionnaire, patients' clinical records). The patients' engagement concluded with a diagnostic assessment (SCID), the CTQ and a repeat of mood and selected neurocognitive testing (HAMD, CGI, BDI, CFQ, DSST) at the point of discharge.

2.6 Approvals

The study was approved by the Research Ethics Committee (REC reference 15/WA/0219 with one amendment, IRAS project ID 167260; see Appendix E) and CNTW NHS Foundation Trust Research and Development office (http://www.hra.nhs.uk/news/research-summaries/RAPID-3/). The study methods were subject to an internal peer review at Newcastle University (July 2015), and all recommendations for design changes were implemented. Indemnity was provided by Newcastle University (design) and CNTW NHS Foundation Trust (conduct). The study was discussed with the CNTW NHS Foundation Trust research lead, the service manager and the lead clinician for acute adult wards (Embleton, Warkworth, Alnmouth) before launch. The Royal College of Psychiatrists provided funding to obtain assessment material to complete the SCID-5-PD and the SCID-5-RV, and permission for its use was approved by the American Psychiatric Association.

2.6.1 Research Team Composition

The research team consisted of inpatient consultant psychiatrists and psychiatry doctors (speciality doctors and psychiatry trainees). They were involved in patient recruitment, conducting interviews, performing structured clinical interviews (using SCID), qualitative data gathering and completing the HAMD and the CGI. Treating care team staff on the ward, including nurses, ward managers, clinical psychologists, occupational therapists, exercise therapists and discharge facilitators, took part in completing the HAMD, the CGI and the staff qualitative questionnaire (see Appendix E).

2.6.2 Data Collection and Storage

Study data were recorded in individual 'subject booklets' that contained the necessary documents for recruitment, enrolment, data collection sheets (see Appendix E) and conducting the study. Personal identifying information was restricted in rating scales and documented assessments, and data were stored electronically using a specific identified study code. The link between patient details and the study code was retained by the Principal Investigator and held separately from the study ratings. All personal identifying information was removed from the booklet before it was placed in storage. No patient-identifiable information was included in any report or output.

2.7 Sample Size

Sample size was calculated using qualitative research methodology. In a qualitative study, sample size is determined by the principle of saturation (Glaser and Strauss, 1967), although Guest, Bunce and Johnson (2006) suggested that saturation principles provide little guidance at a practical level. For ethnography and ethnoscience studies, it had been proposed that 30–50 interviews provide a sufficient sample size (Morse, 1994), while Bernard (2000) observed that most studies use 30–60 interviews. Grounded theory and phenomenology methods suggest sample sizes anywhere between five and 50 subjects (Morse, 1994; Creswell, 1998), although 15 has been suggested as the smallest acceptable sample (Bertaux, 1981 adapted from Guest, Bunce and Johnson, 2006). In our study, we aimed for a sample size of 60.

2.8 Statistical Analysis

The SPSS version 25 (SPSS Inc., US) was used for the quantitative analysis. For group comparisons, the normality of distribution of data was assessed using the Shapiro–Wilk test

and the Kolmogorov–Smirnov test, and their histograms were examined (see Appendix B). An appropriate statistical test was then applied. Parametric statistics were used for data that were normally distributed, and nonparametric tests were used for non-normally distributed data. For the two-group comparison, a paired *t*-test and an independent sample *t*-test were used (parametric statistics), and Wilcoxon and Mann–Whitney *U* tests were applied for the nonparametric data. All values are presented as mean ± standard deviation (SD) unless otherwise stated. To explore the correlation between the variables, the Pearson correlation coefficient (parametric statistics) was used for normally distributed data. The qualitative analysis methods used are described in Chapters 6 and 7, and data analysis was completed using NVivo 11 (QSR International, 2015).

CHAPTER 3: QUANTITATIVE ANALYSIS OF THE RELATIONSHIP BETWEEN AFFECTIVE STATE AND PERSONALITY RATINGS (SUBJECT CHARACTERISTICS AND MOOD ASSESSMENTS)

3.1 Background

In this chapter, we present our quantitative analysis of the relationship between MDD and personality disorder as assessed by the HAMD, BDI and CGI. Subject characteristics and diagnostic groups are also described further.

3.2 Objective

Our objective was to explore patterns of change in observed and subjective ratings of mood to determine whether there were differences between those with a diagnosis of personality disorder and those with MDD. The outcome measure was a quantitative assessment of data to identify mood factors that predict the diagnosis at discharge.

3.3 Group Comparisons

To achieve the above objective, we divided the patients into two main groups according to their diagnosis established at the point of discharge. The two groups were:

a) MDD group (n = 24): This group included patients with a DSM-5 diagnosis of MDD (n = 24) after applying the inclusion and exclusion criteria (see Figure 3.2). Patients presenting with depressive symptoms but classified as having an alternative diagnosis (e.g., an anxiety disorder with depressive symptoms [subsyndromal depressive symptoms]) were excluded from this group (n = 7). Two patients with a diagnosis of dysthymia were not included in this group, and none of the patients in this group had a comorbid diagnosis of personality disorder. A secondary analysis was conducted in which those with any depressive symptoms were included (n = 33; see Figure 3.1).
b) Personality disorder group (n = 27): This group included patients with personality disorders diagnosed on an SCID-5 assessment with or without a diagnosis of MDD (n = 27 [personality disorder with MDD = 14 and personality disorder without MDD = 13]).

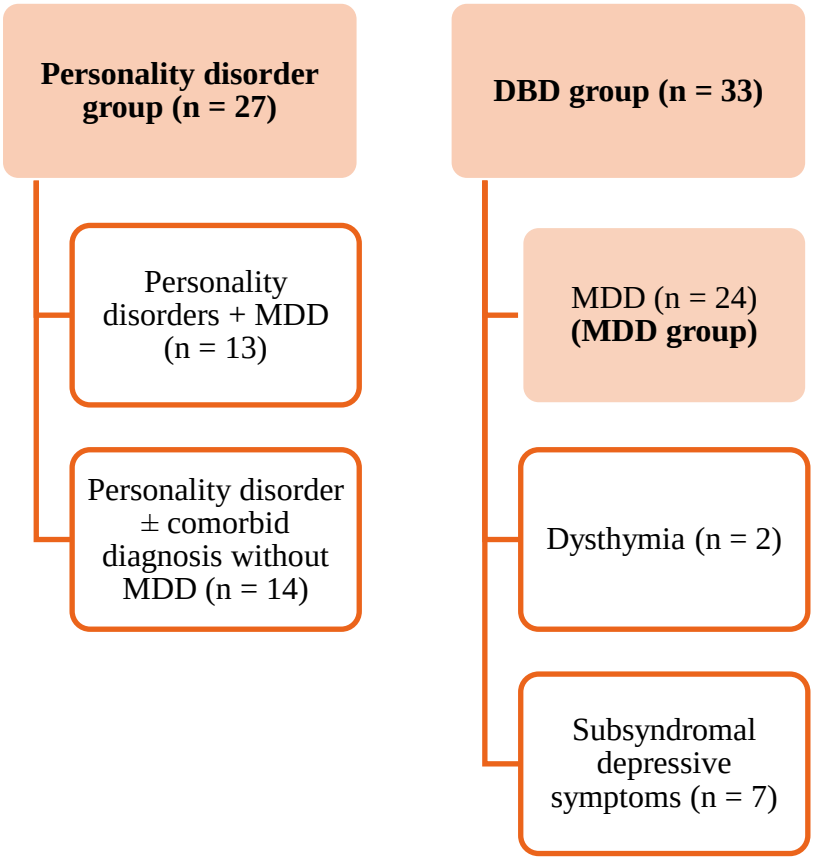

Figure 3.1: Diagnostic groups for the BDI and the HAMD

3.4 Secondary Analysis

We included 51 patients enrolled in our study for the comparison between the MDD group and the personality disorder group. For the secondary analysis, all 60 patients were included. The diagnostic groups were divided as follows for the secondary analysis:

a) Depression-broad-definition (DBD) group (n = 33): This group included patients diagnosed with MDD (n = 24), dysthymia (n = 2) and subsyndromal depressive symptoms (n = 7). It is well established that patients with other diagnoses such as anxiety disorder, post-traumatic stress disorder, eating disorder and adjustment disorder can present with depressive symptoms, although the depressive symptoms alone are not sufficient to make a comorbid diagnosis of MDD in this group. Therefore, this group included seven patients with a DSM-5 diagnosis showing depressive symptoms after applying the inclusion and exclusion criteria (e.g., anxiety disorders, adjustment disorders, autistic spectrum disorders, eating disorders were included [subsyndromal depressive symptoms]). None of the patients with personality disorders were included in this group (see Figure 3.2).

b) Personality disorder group (n = 27): This group included 27 patients with a personality disorder alone or with a comorbidity.

In the DBD group, patients in the secondary analysis included seven patients with subsyndromal depressive symptoms (RAPID study IDs 19, 24, 32, 38, 47, 49 and 52) and two patients with dysthymia (RAPID study IDs 28 and 31; see Appendix D). Secondary quantitative analysis was then conducted using HAMD, BDI and CGI data to compare the DBD group and the personality disorder group.

3.5 Results

The total number of patients admitted to the three acute adult wards during the 20-month period was 1,002 (see Figure 3.1), and 210 patients were deemed eligible for inclusion in our study as recognised by the inpatient care teams. These patients were identified by the inpatient treating care teams at the routine formulation meetings held within 72 hours of the patient being admitted and then referred to the research team. Of the 210 patients referred to the research team, the exclusion criteria were met in 84 patients. Two patients were detained under the *Mental Health Act* and were found to lack the capacity to enrol in the study. Following the application of the inclusion and exclusion criteria, 124 patients were suitable for enrolment. Of these, 64 patients declined to consent to take part in the study, and 60 patients consented and were recruited. The SCID diagnostic assessments and qualitative data gathering via patients' notes were completed for all 60 patients. The HAMD admission data were available for all 60 patients, while discharge HAMD data were missing for three patients. CFQ, DSST and BDI admission data were collected for all 60 patients, but discharge data were missing for two patients. CGI admission data were available for all 60 patients, but discharge data were missing for four patients. All 60 patients completed the CTQ.

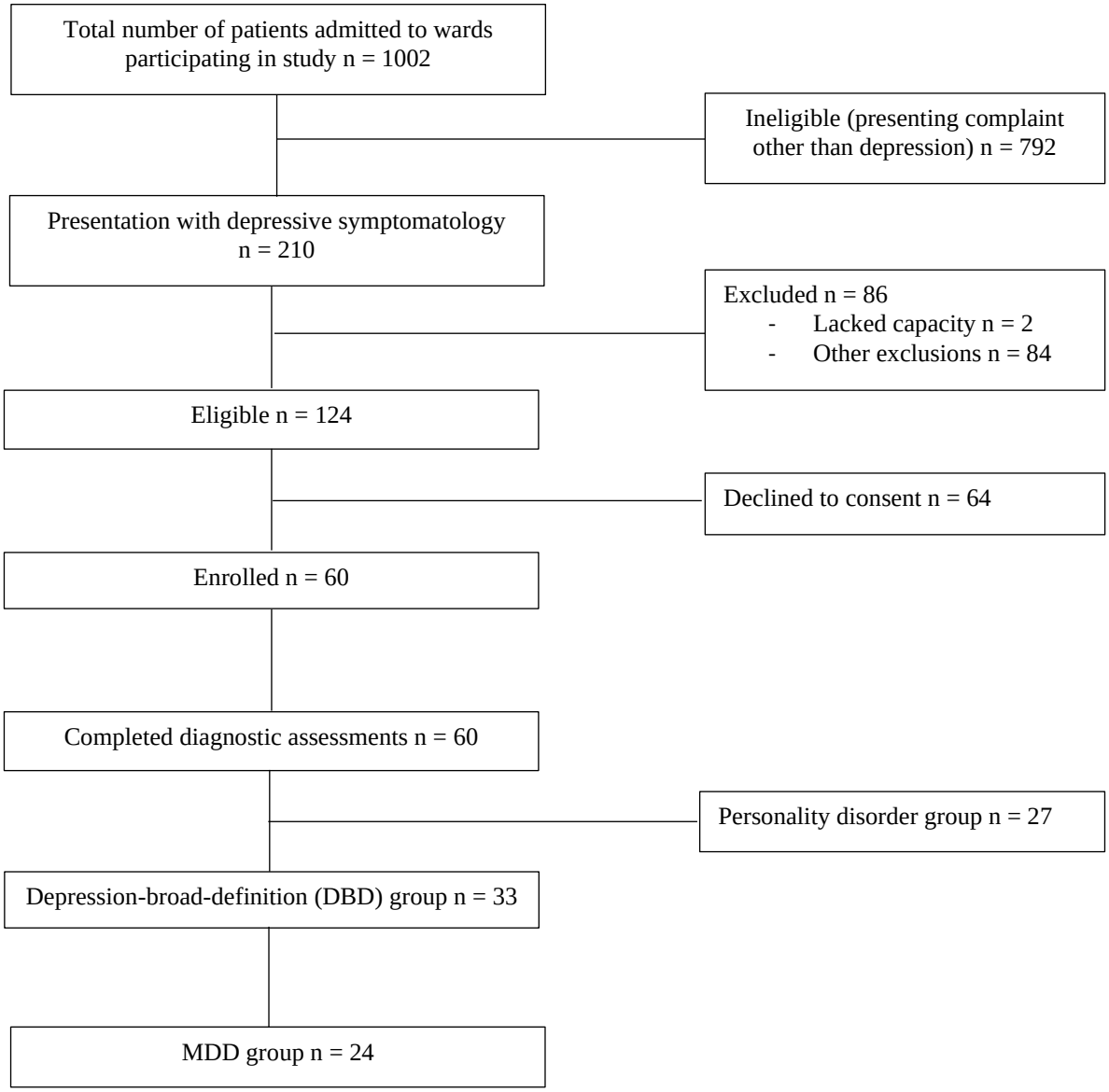

Figure 3.2: Consort diagram

3.6 Overall Subject Characteristics

Overall subject characteristics were analysed for the total sample (n = 60). The mean age of the study population was 40.9 ± 14.7 years (mean ± SD). Of the 60 patients, 37 were male (61.7%) and 23 were female (38.3%), similar to the bed numbers allocated to male and female patients in the acute adult wards at St George's Park, CNTW NHS Foundation Trust (two male wards and one female ward). The length of stay (LOS) was calculated for each recruited patient using the number of days. The mean LOS for the overall sample was 30.5 ± 31.3 days. We identified that 90% (n = 54) of the patients were on psychotropic medications on admission, and 10% (n = 6) were not. The psychotropics prescribed were antidepressants, antipsychotics, anxiolytics and mood stabilisers. The key reasons for admission were also

scrutinised. One of the main reasons for admission was self-harm thoughts (51.7% [n = 31]), whereby the patient had expressed having self-harm or suicidal thoughts, which triggered their admission to the inpatient wards. Of the sample, 41.7% (n = 25) of the patients were admitted following an incident of self-harm (e.g., patient took an overdose of prescribed medications, which triggered admission to the inpatient wards). Table 3.1 summarises the subject characteristics for all 60 patients.

Table 3.1: Overall subject demographics for all 60 patients

Subject demographics	Results
Mean age (years) and SD	40.9 (±14.7)
Male (%)	61.7% (n = 37)
Female (%)	38.3% (n = 38)
Mean LOS (days) and SD	30.5 (±31.3)
Had patient been on any psychotropics on admission to the ward?	Yes: 90% No: 10%
Main reasons for admission	Self-harm thoughts: 51.7% Actual self-harm: 41.7% Other (aggression, carer fatigue, deterioration in mental state): 6.7%

3.6.1 Group Comparisons

Age, LOS and sex differences were explored between the groups. There were 24 patients in the MDD group, 27 in the personality disorder group and 33 in the DBD group. Table 3.2 summarises the subject demographics for the MDD group, the personality disorder group and the DBD group.

Table 3.2: Subject demographics as per groups

Subject demographics comparing between diagnostic groups	MDD group n = 24	Personality disorder group n = 27	*p*	Statistical test
Mean age (years) and SD	47.2 (±14.1)	35.1 (±12.8)	0.002	Independent sample *t*-test
Mean LOS (days) and SD	41.5 (±41.9)	24.3 (±20.5)	0.04	Mann–Whitney *U*
Male	16 (66.6%)	15 (55.6%)	0.41	Chi-squared test
Female	8 (33.3%)	12 (44.4%)		
	DBD group n = 33	Personality disorder group n = 27		
Mean age (years) and SD	45.5 (±14.6)	35.1 (±12.8)	0.005	Independent sample *t*-test
Mean LOS (days) and SD	35.5 (±37.5)	24.3 (±20.5)	0.21	Mann–Whitney *U*
Male	22 (66.6%)	15 (55.5%)	0.37	Chi-squared test
Female	11 (33.3%)	12 (44.5%)		

The mean LOS for the MDD group was significantly longer (41.5 days [SD ± 41.9]) compared with 24.3 days (SD ± 20.5) for the personality disorder group ($Z = -2.0$, $p = 0.04$; see Table B.1 in Appendix B). No significant sex differences were observed between the MDD group and the personality disorder group (X^2 (1, N = 51) = 0.65, $p = 0.41$). The mean age of the patients was 35.1 ± 12.8 years (significantly younger patients) for the personality disorder group, 47.2 ± 14.1 for the MDD group and 45.5 ±14.6 years for the DBD group (age comparison; MDD group v. personality disorder group *t* 3.2, 49 df, $p = 0.002$; DBD group v. personality disorder group *t* 2.9, 58 df, $p = 0.005$). Figures 3.3-3.4 show the data distribution for the MDD group and the personality disorder group.

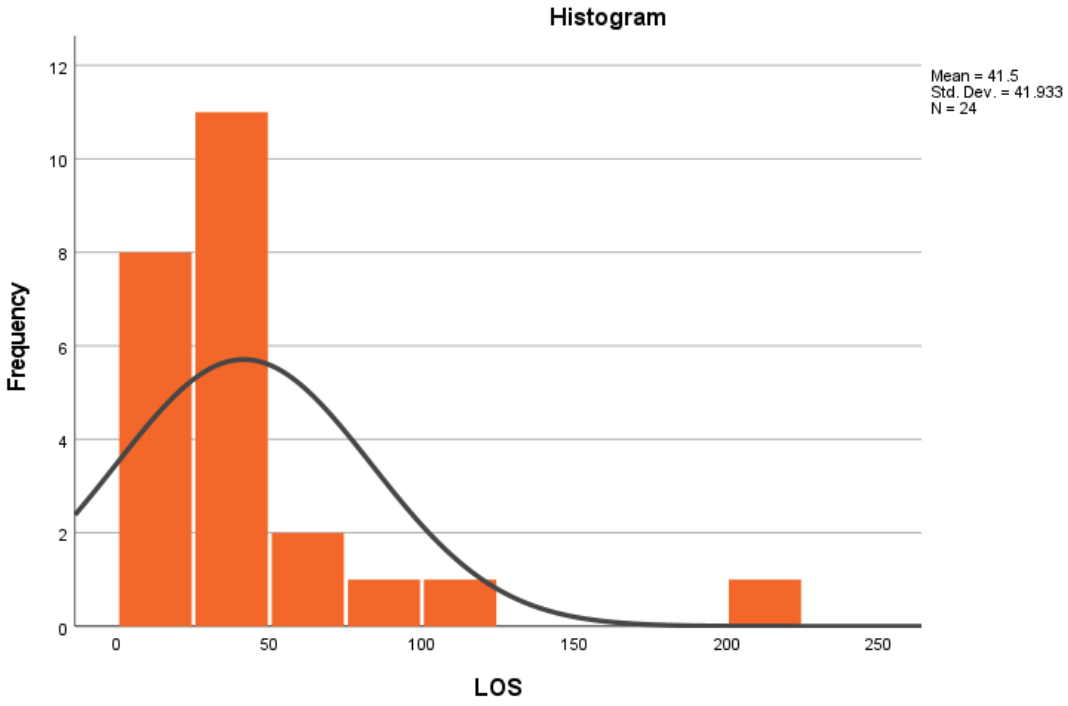

Figure 3.3: LOS data distribution for the MDD group

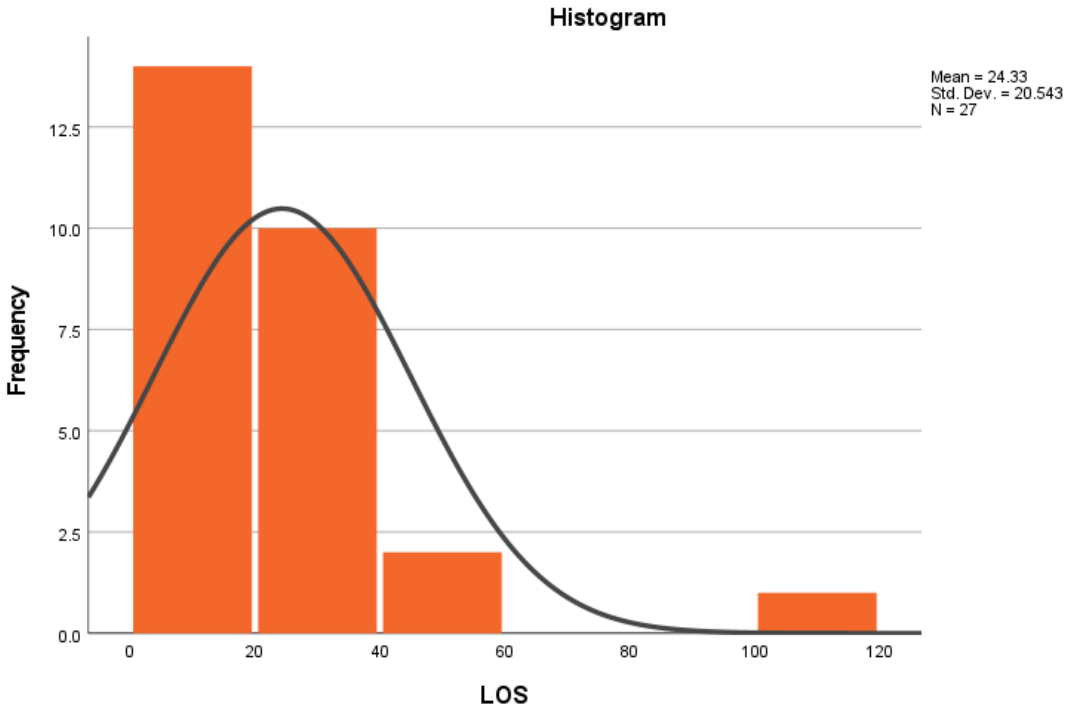

Figure 3.4: LOS data distribution for the personality disorder group

The mean LOS for the DBD group was 35.5 (SD ± 37.5; see Table B.1 in Appendix B). No statistically significant difference was found in mean LOS between the DBD group and the personality disorder group (Z = −1.2, p = 0.21). No significant sex differences were observed between the DBD group and the personality disorder group (X^2 (1, N = 60) = 0.77, p = 0.37). Data distribution for LOS is shown in Figure 3.5.

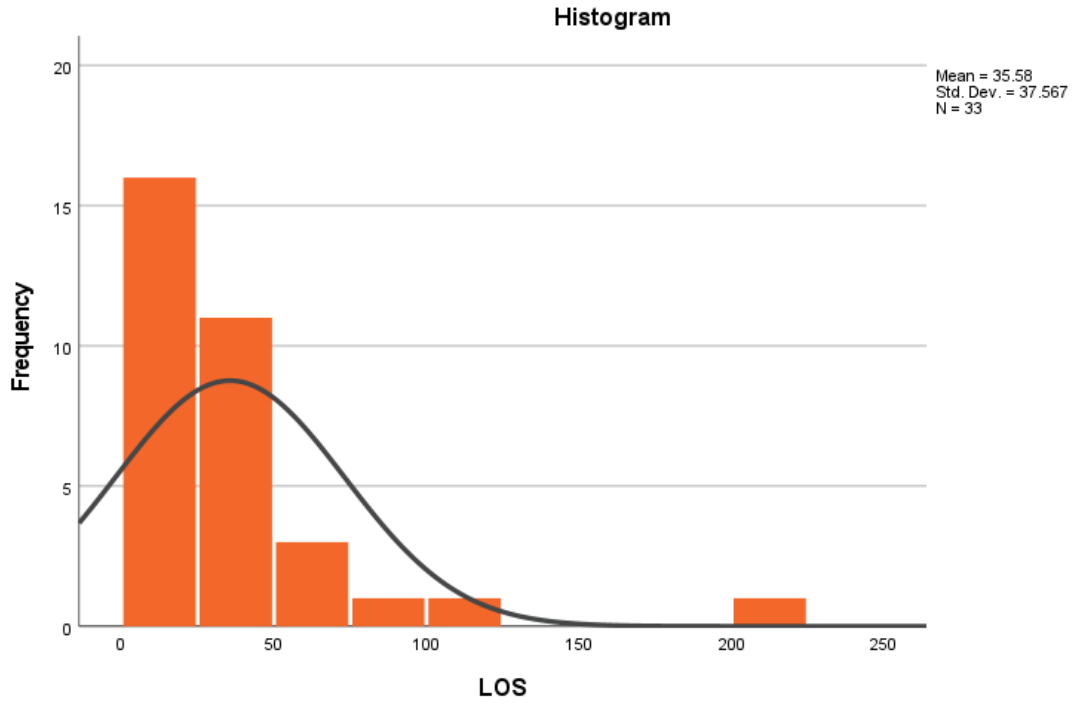

Figure 3.5: LOS data distribution for the DBD group

The outliers were determined by 1.5 times the interquartile range (IQR) above the upper quartile (Q3) and below the lower quartile (Q1). The interquartile range is the middle 50% of the data distribution (difference between the 75th and 25th percentiles of the data).

Therefore, outliers are determined if the data point is below Q1 − 1.5 × IQR or above Q3 + 1.5 × IQR. We applied the methodology described by Hoaglin, Iglewicz and Tukey (1986) when describing the values beyond the outliers. Calculations of the outliers for each group are presented in Table 3.3 (see Table B.1 in Appendix B).

Table 3.3: Outlier calculations for the diagnostic groups

	MDD group n = 24	Personality disorder group n = 27	DBD group n = 33
Outlier calculations for diagnostic groups	IQR = Q3 − Q1	IQR = Q3 − Q1	IQR = Q3 − Q1
	IQR = 46 − 13	IQR = 29 − 13	IQR = 43 − 13
	IQR = 33	IQR = 16	IQR = 30
	Q1 – 1.5 × IQR	Q1 – 1.5 × IQR	Q1 – 1.5 × IQR
	13 − (1.5 × 33)	13 − (1.5 × 16)	Q1 − (1.5 × 30)
	13 − (49.5)	13 − (24)	13 − 45
	= −36.5	= −11	= −32
	Q3 + 1.5 × IQR	Q3 + 1.5 × IQR	Q3 + 1.5 × IQR
	Q3 + (1.5 × 33)	Q3 + (1.5 × 16)	Q3 + (1.5 × 30)
	46 + 49.5	29 + 24	43 + 45
	= 95.5 days	= 53 days	= 88 days

In the MDD group, two values were noted beyond the outlier value (95.5 days) in LOS (RAPID study IDs 56 [LOS: 203 days] and 33 [LOS: 103 days]). The same values (RAPID study IDs 56 and 33) were in the DBD group (outlier cut-off: 88 days). The RAPID56 (LOS: 203 days) had a comorbid diagnosis of post-traumatic stress disorder in addition to MDD, and the RAPID33 (LOS: 103 days) had an MDD diagnosis only. In the personality disorder group, two values were beyond the outlier value (53 days): RAPID39 (LOS: 53 days), who was diagnosed with MDD plus anorexia nervosa plus anxious avoidant personality disorder; and RAPID9 (LOS: 109), who was diagnosed with MDD plus obsessive-compulsive personality disorder). None of the outliers had a diagnosis of borderline personality disorder or a personality disorder alone. The box plot in Figure 3.6 summarises the LOS results.

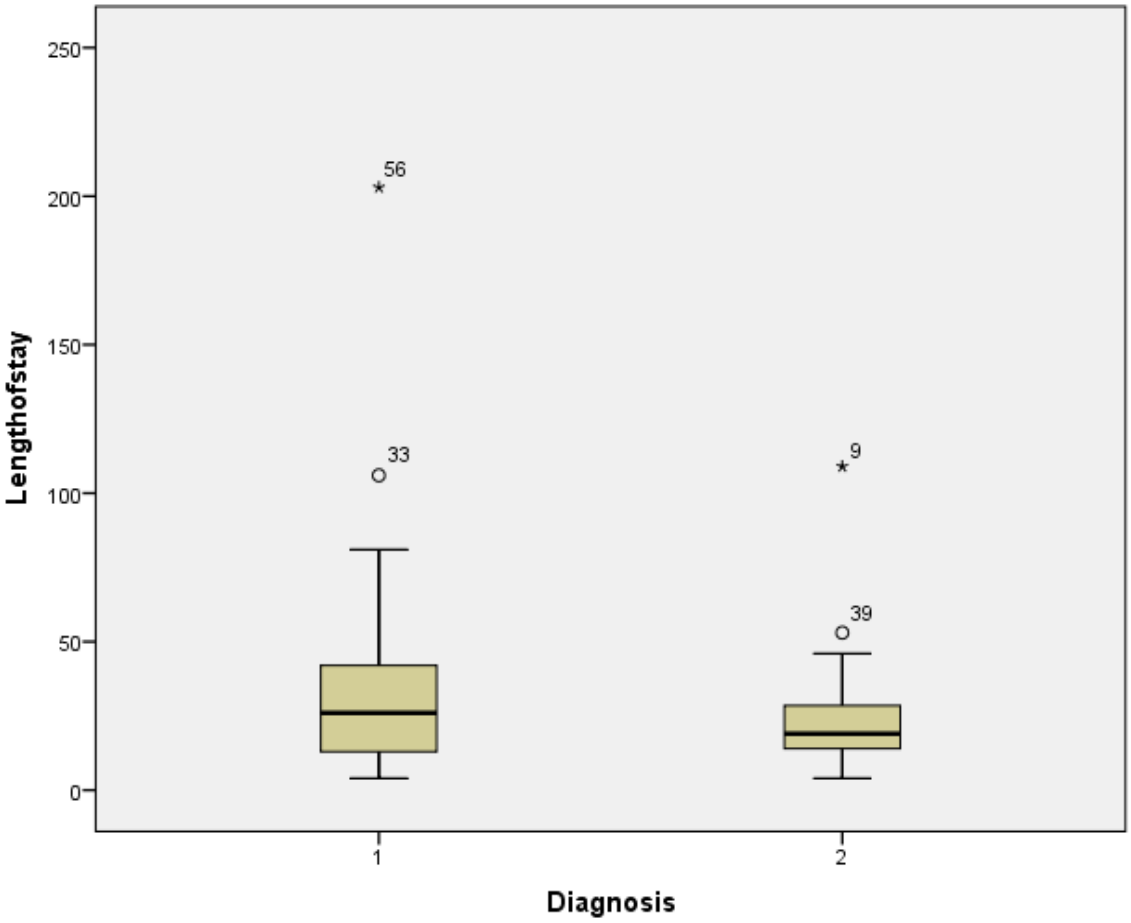

Figure 3.6: LOS for the DBD group (1) and the personality disorder group (2)

3.6.2 Subject Characteristics for the MDD Group and the DBD Group

As described above, in the MDD group (n = 24), 15 were diagnosed with MDD with anxiety distress, while four patients had MDD with either melancholic features or psychotic features, or both (see Table 3.4). One patient had MDD with atypical features, and four had MDD without specifiers (with or without other comorbidities) in this group. In the DBD group (n = 33), of the seven patients with subsyndromal depressive symptoms, four were diagnosed with an adjustment disorder with or without other comorbid diagnoses (see Appendix D). Of those two dysthymia patients, one was diagnosed with other comorbidities.

Table 3.4: Diagnostic groups in the MDD group and the DBD group

		SCID-5-RV diagnoses	MDD group n = 24	Dysthymia n = 2	Subsyndromal depressive symptoms n = 7
DBD group (n = 33)	MDD group (n = 24)	MDD with anxiety distress	15		
		MDD with both melancholic and psychotic features	2		
		MDD with melancholic features	1		
		MDD with psychotic features	1		
		MDD with atypical features	1		
		MDD without specifiers	4		
		Dysthymia		1	
		Dysthymia with comorbidity		1	
		Adjustment disorder with or without comorbidity			4
		Generalised anxiety disorder			2
		Autistic spectrum disorder with comorbidity			1

3.6.3 Subject Characteristics for the Personality Disorder Group

In the personality disorder group, 22 patients had borderline personality disorder, nine had avoidant personality disorder and seven had paranoid personality disorder (see Table 3.5). Of the 27 patients in the personality disorder group, 13 were diagnosed with a single personality disorder (borderline: n = 8, avoidant: n = 3, obsessive-compulsive: n = 2). The remaining 14 patients had personality disorder combinations. Seven patients had two personality disorders combined (borderline: n = 7, avoidant: n = 2, paranoid: n = 2, schizotypal: n = 1, antisocial: n = 1), six patients had three personality disorders combined (borderline: n = 6, paranoid: n = 4, avoidant: n = 4, antisocial: n = 2, dependent: n = 2, schizotypal: n = 1) and one patient had four comorbid personality disorders (paranoid, schizoid, antisocial and borderline).

Of the total 27 patients in the personality disorder group, 13 had an additional diagnosis of comorbid MDD. The main type of this comorbid MDD was an anxiety distress specifier (n = 10), while one patient had an atypical specifier. The remaining 14 patients in this group

had a diagnosis of either personality disorder alone or other comorbid diagnoses (without MDD) at the time of the study (see Appendix D).

Table 3.5: Types of personality disorder in the personality disorder group

Personality disorder type	Number of patients with one personality disorder only n = 13	Number of patients with two personality disorders n = 7	Number of patients with three personality disorders n = 6	Number of patients with four personality disorders n = 1
Paranoid		2	4	1
Schizoid				1
Schizotypal		1	1	
Antisocial		1	2	1
Borderline	8	7	6	1
Histrionic		1		
Avoidant	3	2	4	
Dependent			2	
Obsessive-compulsive	2			
Total (n = 27)	13	7	6	1

3.7 Results: MDD Group v. Personality Disorder Group (BDI and HAMD)

Analysis was performed excluding seven patients (RAPID study IDs 19, 24, 32, 38, 47, 49, 52) who did not attract a depressive disorder diagnosis and two patients with a diagnosis of dysthymia. Diagnoses were divided as follows for the analysis:

a) MDD group (n = 24): This group included patients with a DSM-5 diagnosis of MDD (n = 24) after applying the inclusion and exclusion criteria. Patients without an MDD diagnosis (i.e., patients with subsyndromal depressive symptoms such as adjustment disorder, anxiety disorder, post-traumatic stress disorder and eating disorder) were not included in this group. Two patients with a diagnosis of dysthymia were not included in this group, and none of the patients in this group had a comorbid diagnosis of personality disorder (see Figure 3.2).

b) Personality disorder group (n = 27): This group included 27 patients with a personality disorder alone or with a comorbidity.

3.7.1 Comparison: MDD Group v. Personality Disorder Group (BDI and HAMD)

The BDI was completed by all 24 patients both at admission and discharge for the MDD group. It was completed by 27 patients in the personality disorder group on admission and by 26 patients at discharge. The HAMD was completed for all 24 patients on admission and for 22 patients at discharge for the MDD group. It was completed for 27 patients on admission and 26 patients at discharge for the personality disorder group. Analysis of the BDI and the HAMD is presented in Figure 3.7. The data distribution and statistical tests used are described in Table B.2 in Appendix B.

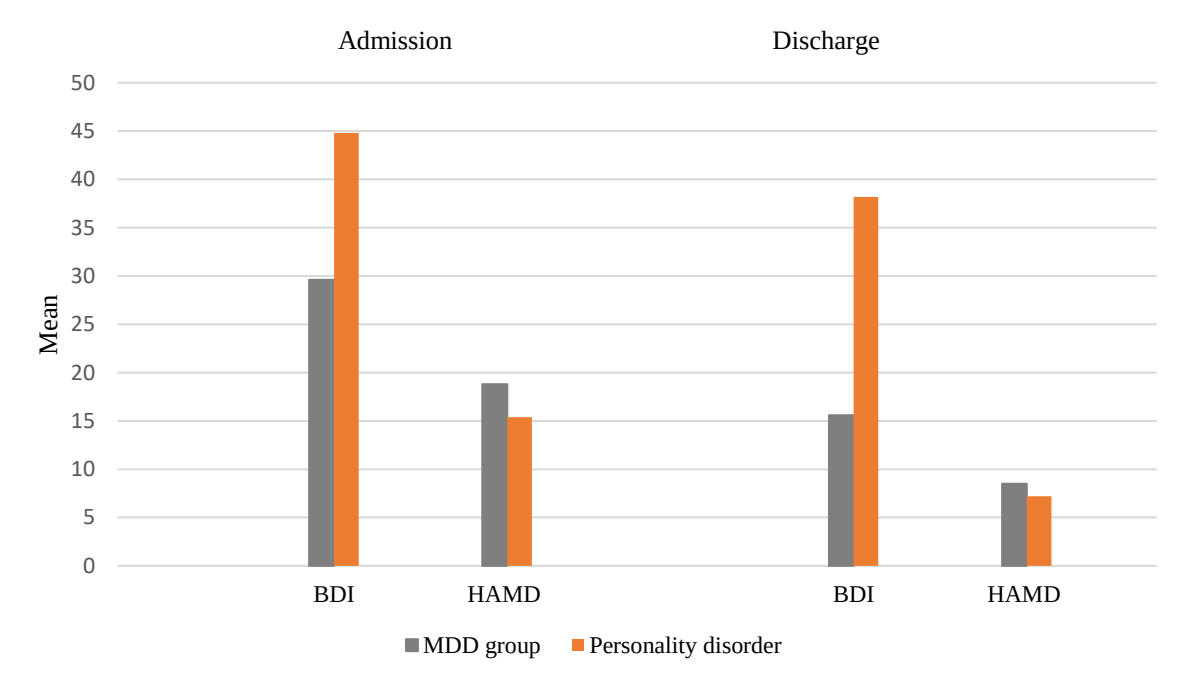

Figure 3.7: Mean BDI and HAMD scores at admission and discharge for the MDD group and the personality disorder group

The HAMD and BDI mean scores were then compared between admission and discharge for the MDD group and the personality disorder group. Table 3.6 summarises the results.

Table 3.6: Comparison between admission and discharge for the MDD group and the personality disorder group, n = number of patients completed after excluding missing data

Diagnostic group	Comparison: admission versus discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
MDD group				
BDI	29.6 (±12.5), 24	15.6 (±13.8), 24	0.001	Wilcoxon
HAMD	18.8 (±4.8), 24	8.5 (±6.1), 22	0.001	Paired *t*-test
Personality disorder group				
BDI	44.8 (±9.7), 27	38.2 (±14.6), 26	0.025	Paired *t*-test
HAMD	15.4 (±3.6), 27	7.2 (±3.4), 26	0.001	Paired *t*-test

Both groups showed a significant reduction from admission to discharge in both subjective and observer-rated depression scores. That is, the mean BDI score showed a significant reduction between admission and discharge for the MDD group (BDI scores: admission 29.6 ± 12.5 to discharge 15.6 ± 13.8; Z = −3.5, $p = 0.001$) and the personality disorder group (BDI scores: admission 44.8 ± 9.7 to discharge 38.2 ± 14.6, mean reduction 6.3 ± 13.4; $t = 2.3$, 25 df, $p = 0.025$). A significant reduction (more than 50%) was observed between admission and discharge in the mean HAMD for the MDD group (HAMD scores: admission 18.8 ± 4.8 to discharge 8.5 ± 6.1, mean reduction 10.3 ± 7.4; $t = 6.5$, 21 df, $p = 0.001$) and the personality disorder group (HAMD scores: admission 15.4 ± 3.6 to discharge 7.2 ± 3.4, mean reduction 8.2 ± 5.1; $t = 8.1$, 25 df, $p = 0.001$). The mean BDI and HAMD scores were compared for both groups at admission and discharge. The findings are summarised in Table 3.7.

Table 3.7: Comparison between the MDD group and personality disorder group for the BDI and the HAMD, n = number of patients completed (after excluding missing data)

Time of assessment	Comparison: MDD group v. personality disorder group Mean (±SD), n		*p*	Statistical test
	MDD group	Personality disorder group		
Admission				
BDI	29.6 (±12.5), 24	44.8 (±9.7), 27	0.001	Independent sample *t*-test
HAMD	18.8 (±4.8), 24	15.4 (±3.6), 27	0.007	Independent sample *t*-test
Discharge				
BDI	15.6 (±13.8), 24	38.2 (±14.6), 26	0.001	Mann–Whitney *U*
HAMD	8.5 (±6.1), 22	7.2 (±3.4), 26	0.37	Independent sample *t*-test

Group comparisons between the MDD group and personality disorder group showed that subjective depression ratings (BDI) were significantly greater in the personality disorder group than the MDD group at both admission and discharge (BDI scores on admission: personality disorder group 44.8 ± 9.7 v. MDD group 29.6 ± 12.5; $t = -4.8$, 49 df, $p = 0.001$; BDI scores at discharge: personality disorder group 38.2 ± 14.6 v. MDD group 15.6 ± 13.8; $Z = -4.1$, $p = 0.001$), while the MDD group had greater observer-based ratings (HAMD) at admission, but there was no difference at discharge (HAMD scores on admission: personality disorder group 15.4 ± 3.6 v. MDD group 18.8 ± 4.8; $t = 2.8$, 49 df, $p = 0.007$; HAMD scores at discharge: personality disorder group 7.2 ± 3.4 v. MDD group 8.5 ± 6.1; $t = 0.90$, 46 df, $p = 0.37$).

3.7.2 Comparison: DBD Group v. Personality Disorder Group

For this secondary analysis, the diagnosis groups were divided as follows:

a) DBD group (n = 33): This group included patients diagnosed with MDD (n = 24), dysthymia (n = 2) and subsyndromal depressive symptoms (n = 7). It is well established that patients with other diagnoses such as anxiety disorder, post-traumatic stress disorder, eating disorder and adjustment disorder can present with depressive symptoms, although the depressive symptoms alone are not sufficient to make a comorbid diagnosis of MDD in this group. Therefore, this group included seven

patients with a DSM-5 diagnosis showing depressive symptoms after applying the inclusion and exclusion criteria (e.g., anxiety disorders, adjustment disorders, autistic spectrum disorders, eating disorders were included [subsyndromal depressive symptoms]). None of the patients with personality disorders were included in this group (see Figure 3.2).

b) Personality disorder group (n = 27): This group included 27 patients with a personality disorder alone or with a comorbidity.

The BDI was completed by all 60 patients on admission and 58 patients at discharge. On admission, all 33 patients completed the BDI in the DBD group and all 27 patients completed the BDI in the personality disorder group. At discharge, 32 patients completed the BDI in the DBD group, and 26 patients completed it in the personality disorder group (see Figure 3.8).

The HAMD was completed for 60 patients on admission and 57 patients at discharge. On admission, the HAMD data were obtained from all 33 patients in the DBD group and all 27 patients in the personality disorder group. At discharge, the HAMD data were missing from three patients; two of these patients were from the DBD group and the other was from the personality disorder group.

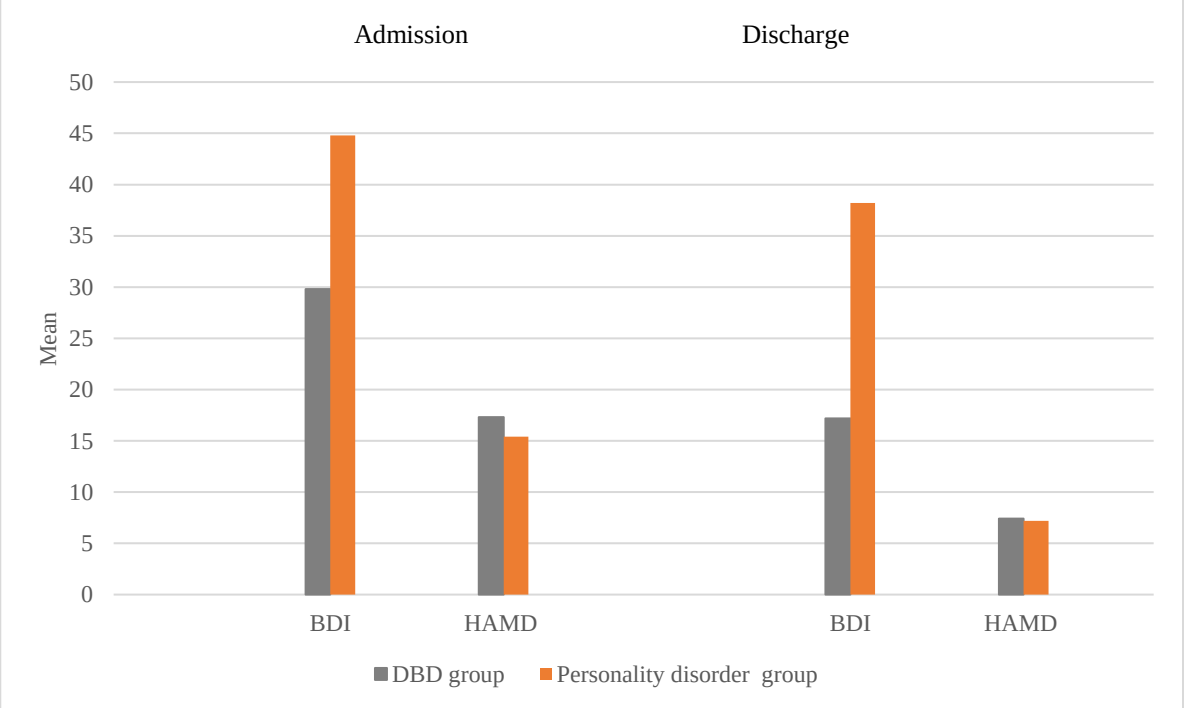

Figure 3.8: Mean BDI and HAMD scores at admission and discharge for the DBD group and the personality disorder group

We then compared the BDI and HAMD mean values at different time points (admission and discharge) for each diagnosis. Appendix B outlines the normality testing results and the statistical test used for the analysis. Table 3.8 presents the results.

Table 3.8: Comparison between admission and discharge for the DBD group and the personality disorder group, n = number of patients completed (after excluding missing data)

Diagnostic group	Comparison: admission versus discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
DBD group				
BDI	29.8 (±12), 33	17.2 (±13.5), 32	0.001	Wilcoxon
HAMD	17.3 (±5.1), 33	7.4 (±5.6), 31	0.001	Wilcoxon
Personality disorder group				
BDI	44.8 (±9.7), 27	38.2 (±14.6), 26	0.025	Paired *t*-test
HAMD	15.4 (±3.6), 27	7.2 (±3.4), 26	0.001	Paired *t*-test

3.7.3 Results: DBD Group v. Personality Disorder Group (BDI/HAMD)

Both the DBD group and the personality disorder group showed a significant reduction from admission to discharge in both subjective depression scores (BDI scores on admission: DBD group 29.8 ± 12 to discharge 17.2 ± 13.5; $Z = -4.2$, $p = 0.001$; BDI scores on admission: personality disorder group 44.8 ± 9.7 to discharge 38.2 ± 14.6, mean reduction 6.3 ± 13.4; $t = 2.3$, 25 df, $p = 0.025$) and observer-rated depression scores (HAMD scores on admission: DBD group 17.3 ± 5.1 to discharge 7.4 ± 5.6; $Z = -4.6$, $p = 0.001$; HAMD scores on admission: personality disorder group 15.4 ± 3.6 to discharge 7.2 ± 3.4, mean reduction 8.2 ± 5.1; $t = 8.1$, 25 df, $p = 0.001$).

The BDI and HAMD mean scores were then compared between the DBD group and the personality disorder group. The findings are summarised in Table 3.9.

Table 3.9: Comparison between the DBD group and the personality disorder group for the BDI and the HAMD, n = number of patients completed (after excluding missing data)

Time of assessment	Comparison between groups Mean (±SD), n		*p*	Statistical test
	DBD group	Personality disorder group		
Admission				
BDI	29.8 (±12), 33	44.8 (±9.7), 27	0.001	Independent sample *t*-test
HAMD	17.3 (±5.1), 33	15.4 (±3.6), 27	0.12	Independent sample *t*-test
Discharge				
BDI	17.2 (±13.5), 32	38.2 (±14.6), 26	0.001	Mann–Whitney *U*
HAMD	7.4 (±5.6), 31	7.2 (±3.4), 26	0.82	Mann–Whitney *U*

Group comparisons between the DBD group and the personality disorder group showed that subjective depression ratings (BDI) were significantly greater in the personality disorder group than the MDD group both on admission and at discharge (BDI scores on admission: personality disorder group 44.8 ± 9.7 v. DBD group 29.8 ± 12; $t = -5.2$, 58 df, $p = 0.001$; BDI scores at discharge: personality disorder group 38.2 ± 14.6 v. DBD group 17.2 ± 13.5; $Z = -4.4$, $p = 0.001$), but there was no difference in observer-based ratings both on admission and at discharge (HAMD scores on admission: personality disorder group 15.4 ± 3.6 v. DBD group 17.3 ± 5.1; $t = 1.5$, 58 df, $p = 0.12$; HAMD scores at discharge: personality disorder group 7.2 ± 3.4 v. DBD group 7.4 ± 5.6; $Z = -0.21$, $p = 0.82$).

3.8 Correlation Between the BDI and the HAMD

We explored the correlation between the BDI and the HAMD for each diagnostic group independently (MDD group, personality disorder group and DBD group) both at admission and discharge. The results are summarised in Table 3.10. Because the data were continuous (normally distributed), Pearson's correlation coefficient (r) was used.

Table 3.10: Correlation between the BDI and the HAMD at admission and discharge for the diagnostic groups (*p* = significance)

Diagnostic group	Correlation between the BDI and the HAMD at time points *r* statistic (*p* value)	
	Admission	Discharge
MDD group	0.38 ($p = 0.06$)	0.54 ($p = 0.008$)
Personality disorder group	0.21 ($p = 0.27$)	−0.05 ($p = 0.77$)
DBD group	0.31 ($p = 0.08$)	0.47 ($p = 0.01$)

In our study, subjective and observer-based depression ratings are correlated in the MDD group and the DBD group, but not in the personality disorder group, especially at discharge (MDD group: r (22) = 0.54, $p = 0.008$; personality disorder group: r (24) = −0.05, $p = 0.77$; DBD group: r (30) = 0.47, $p = 0.01$). Our findings suggest a weak positive but nonsignificant relationship between the BDI and the HAMD on admission for all three diagnostic groups (MDD group: r (22) = 0.38, $p = 0.06$; personality disorder group: r (25) = 0.21, $p = 0.27$; DBD group: r (31) = 0.31, $p = 0.08$). To assess the correlation, we applied standard correlation coefficient interpretation methods (Dancey and Reidy, 2007; Akoglu, 2018). Table B.7 in Appendix B describes the interpretation of the Pearson's correlation coefficients (interpretation of *r* values).

3.9 Clinical Global Impression (CGI)

The admission and discharge CGI data were extracted under the CGI category of severity of illness (question stem, 'How mentally ill was the patient at this time?'). Given that the RAPID study was not a medication trial, the CGI efficacy index (therapeutic effect and side effects) was not analysed. The CGI global improvement (compared with admission to the study, 'How much had he changed?') was analysed to compare the groups at discharge but not to compare admission and discharge. The CGI data distribution and appropriate statistical test used are described in Table B.3 in Appendix B.

3.9.1 Comparison: MDD Group v. Personality Disorder Group (CGI)

Analysis was performed for the MDD group and the personality disorder group. In the MDD group, the CGI severity of illness was completed for 24 patients on admission and 22 patients at discharge. In the personality disorder group, the CGI was completed for 27 patients on admission and 25 patients at discharge. In the MDD group, the mean CGI severity of illness

score was 4.5 ± 0.9 on admission and 2.5 ± 1 at discharge. In the personality disorder group, the mean CGI severity of illness scores on admission and discharge were 3.9 ± 0.4 and 2.7 ± 0.8 respectively (see Table 3.11).

Table 3.11: CGI comparison between admission and discharge for the MDD group and the personality disorder group, n = number of patients completed the CGI

Diagnostic group	Comparison: admission v. discharge Mean (±SD), N		*p*	Statistical test
	Admission	Discharge		
MDD group				
CGI severity of illness	4.5 (±0.9), 24	2.5 (±1), 22	0.001	Wilcoxon
Personality disorder group				
CGI severity of illness	3.9 (±0.4), 27	2.7 (±0.8), 25	0.001	Wilcoxon

Admission v. discharge CGI mean scores were then compared separately for the MDD group and the personality disorder group (see Table 3.11). A significant reduction was observed in the CGI mean scores between admission and discharge for the MDD group (Z −3.8, p = 0.001). Similarly, a significant reduction was observed between admission and discharge mean CGI (severity of illness) scores for the personality disorder group (Z −3.8, p = 0.001). The MDD group was then compared with the personality disorder group at different time points (see Table 3.12).

Table 3.12: CGI comparison between the MDD group and the personality disorder group, n = number of patients completed the CGI

Time of assessment	Comparison between groups Mean (±SD), n		*p*	Statistical test
	MDD group	Personality disorder group		
Admission				
CGI severity of illness	4.5 (±0.9), 24	3.9 (±0.4), 27	0.006	Mann–Whitney *U*
Discharge				
CGI severity of illness	2.5 (±1), 22	2.7 (±0.8), 25	0.6	Mann–Whitney *U*
CGI global improvement	1.96 (±0.7), 22	2.4 (±0.9), 25	0.06	Mann–Whitney *U*

On admission, the CGI severity of illness comparison between the MDD group and the personality disorder group was significant (Z −2.7, $p = 0.006$), although it was nonsignificant at discharge (Z −0.5, $p = 0.6$). At discharge, the CGI global improvement was completed for 22 patients in the MDD group and 25 patients in the personality disorder group. The mean CGI global improvement scores for the MDD group and the personality disorder group at discharge were 1.9 ± 0.7 and 2.4 ± 0.9 respectively. No significant difference was observed between the MDD group and the personality disorder group at discharge for the CGI global improvement (Z −1.8, $p = 0.06$).

3.9.2 Secondary Analysis: DBD Group v. Personality Disorder Group (CGI)

In the DBD group, the CGI severity of illness was completed for 33 patients on admission and 31 patients at discharge. In the personality disorder group, the CGI severity of illness was completed for 27 patients on admission and 25 patients at discharge. In the DBD group, the mean CGI severity of illness score was 4.3 ± 0.9 on admission and 2.5 ± 0.9 at discharge. In the personality disorder group, the mean CGI severity of illness was 3.9 ± 0.4 on admission and 2.7 ± 0.8 at discharge. The findings are summarised in Table 3.13.

Table 3.13: CGI comparison between admission and discharge for the DBD group and the personality disorder group, n = number of patients completed the CGI

Group	Comparison: admission v. discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
DBD group				
CGI severity of illness	4.3 (±0.9), 33	2.5 (±0.9), 31	0.001	Wilcoxon
Personality disorder group				
CGI severity of illness	3.9 (±0.4), 27	2.7 (±0.8), 25	0.001	Wilcoxon

In the DBD group, a significant reduction in the mean CGI severity of illness between admission and discharge was observed (Z −4.5, $p = 0.001$). Similarly, in the personality disorder group, a significant reduction between the admission and discharge mean CGI scores (severity of illness) was observed (Z −3.8, $p = 0.001$). We then compared the CGI severity of illness (admission and discharge) and global improvement (at discharge only) between the DBD group and the personality disorder group (see Table 3.14). The mean CGI global

improvement scores at discharge for the DBD group and the personality disorder group were 2.0 ± 0.8 and 2.4 ± 0.9 respectively.

Table 3.14: CGI comparison between the DBD group and the personality disorder group, n = number of patients completed the CGI (after excluding missing data)

Time of assessment	Comparison between groups Mean (±SD), n		*p*	Statistical test
	DBD group	Personality disorder group		
Admission				
CGI severity of illness	4.3 (±0.9), 33	3.9 (±0.4), 27	0.09	Mann–Whitney *U*
Discharge				
CGI severity of illness	2.5 (±0.9), 31	2.7 (±0.8), 25	0.42	Mann–Whitney *U*
CGI global improvement	2.0 (±0.8), 31	2.4 (±0.9), 25	0.17	Mann–Whitney *U*

At admission, no significant difference was observed between the DBD group and the personality disorder group with respect to the CGI severity of illness (Z −1.6, $p = 0.09$). Equally, no significant difference was observed in the CGI severity of illness between the DBD group and the personality disorder group (Z −0.8, $p = 0.42$) at discharge. The CGI global improvement at discharge also failed to show a significant difference between the DBD group and the personality disorder group (Z −1.3, $p = 0.17$).

3.10 Discussion

This study was conducted at the CNTW NHS Trust, where clinical practice favours earlier discharge for patients with a clear diagnosis of personality disorder. Our findings suggest that patients with a primary diagnosis of MDD (without a personality disorder diagnosis) had a significantly longer inpatient stay compared with personality disorder patients. The CNTW NHS Trust has an average target LOS of 21 days, and our findings suggest that the mean LOS went beyond the CNTW NHS Trust's recommendations. It is unclear whether the CNTW NHS Trust put forward this 21-day target LOS based on evidence. The target LOS for inpatients may vary between service providers. This study was conducted in three wards at the hospital Trust, which has distinct single-sex wards, and two wards in the study were for male patients, accounting for the sex distribution in the sample. No significant sex differences

were observed between the groups, but those with a personality disorder were significantly younger than those with a diagnosis of MDD. Previous studies reported that depressed personality disorder patients have an earlier age of onset compared with those with major depression without a personality disorder (Charney, Nelson and Dunlan, 1981; Pfohl, Stangl and Zimmerman, 1984; Bellodi *et al*., 1992). Data on the number of previous admissions were not collected, and we acknowledge that the number of previous admissions may affect the current mental state of patients, such as their anxiety level (at the time of our study) due to familiarity with the ward.

On admission, those in the personality disorder group rated themselves as more depressed compared with those in MDD group. The converse was the case for observer-rated assessments, with the MDD group scoring more highly than the personality disorder group. Similarly, those in the personality disorder group rated themselves as more depressed compared with those in the DBD group. However, there was no difference between the groups on observer-based ratings of depressive symptom severity.

At discharge, those in the personality disorder group continued to rate themselves as more depressed compared with those in the MDD group. However, there was no difference between the groups in relation to observer-based ratings of depressive symptom severity. Similarly, those in the personality disorder group continued to rate themselves as more depressed compared with those in the DBD group. However, there was no difference between the groups in relation to observer-based ratings of depressive symptom severity.

Both groups (MDD group and personality disorder group) showed significant reductions in the severity of observer-rated and subjective depressive symptoms over the span of admission. Observer-based ratings of depressive symptoms reduced by more than 50% in the MDD group and the personality disorder group. The DBD group also showed significant reductions in the severity of observer-rated depressive symptoms over the span of the admission. Subjective improvements in mood were more significant for the MDD group and the DBD group in contrast with the lesser reduction in rating scale scores for the personality disorder group.

In our study, higher mean BDI scores on admission for the personality disorder group compared with the MDD group could be reflective of the subjective experience of depressive symptoms by a personality disorder patient in an inpatient setting. The BDI is a self-reported measure of depressive symptom severity and is not designed to assess personality disorders. Studies have investigated the factors leading to higher BDI scores. Buhan, Rehman and Ooi

(2017) reported that the personality traits of neuroticism and conscientiousness correlated significantly with the BDI scores, while Peirson and Heuchert (2001) claimed that the personality traits of harm avoidance, self-directedness and cooperativeness were significantly correlated with BDI scores. Arkar (2010) investigated the relationship between the BDI(II) and the TCI in MDD patients and found that the personality traits of harm avoidance, self-directedness and cooperativeness correlated significantly with the BDI scores. Therefore, these personality traits may have contributed to higher BDI scoring in our study.

A weak to moderate association between the HAMD and BDI at first assessment (pre-treatment) has been reported by most previous studies, with correlation ranging from $r = 0.16$ to $r = 0.73$ (Davies, Burrows and Poynton, 1975; Schnurr, Hoaken and Jarrett, 1976; Lambert *et al*., 1986; Richter *et al*., 1998; Bagby *et al*., 2004). This weak to moderate association was caused by differences in the depressive symptoms sampled by the two scales (Lambert *et al*., 1986; Bagby *et al*., 2004). In our study, the first pre-treatment assessment (admission assessment) showed a weak positive (nonsignificant) correlation between the HAMD and BDI ranging from $r = 0.21$ to $r = 0.38$ in all three diagnostic groups (MDD group, personality disorder group and DBD group). The HAMD emphasises somatic symptoms/behaviours and is observer-rated, while the BDI rates the subjective experience of depression and is self-rated (Schneibel *et al*., 2012). Our findings could suggest that the HAMD assessors had not recognised some depressive symptoms in the personality disorder group despite self-recognition of depressive symptoms by the patients themselves in the personality disorder group. Another possibility is that the personality disorder group perceived a greater level of distress for a given level of severity of depression. Alternatively, the nature of depression in those with a personality disorder may be different from MDD alone, but the HAMD did not capture this or assess it very well. Silk (2010) reported that clinician-rated scales and diagnostic interviews do not easily differentiate the depression of MDD from the depression of borderline personality disorder, arguing that patients with borderline personality disorder often score more highly on self-rated scales of depression than on corresponding observer-rated scales.

In our study, a negative correlation (nonsignificant) was observed between the BDI and the HAMD at discharge only for the personality disorder group, which contained MDD plus personality disorder. In a study of those with treatment-resistant depression and comorbid personality disorder, the divergence between the BDI and the HAMD varied with various clinical and demographic characteristics; the presence of personality difficulties was

associated with high BDI–HAMD discrepancy, and it predicted a delayed treatment response (Rane *et al.,* 2010). In our study, treatment-resistant depression and comorbid personality disorder came under the personality disorder group, where we noted similar findings. Another recent study reported statistically incongruent BDI and HAMD scores with respect to the severity rating of depression in patients with borderline personality disorder (Cheney, Broadbear, and Rao, 2022). A high BDI score relative to the HAMD score has been reported in those of a younger age and with a higher level of education, and it varies according to the type of depressive disorder such as atypical and non-melancholic (Domken, Scott and Kelly, 1994; Enns, Larsen and Cox, 2000). In our study, of the total 27 patients in the personality disorder group, 13 patients had an additional diagnosis of comorbid MDD with non-melancholic features (mainly anxiety distress, while one patient had atypical features). Therefore, higher BDI scores relative to HAMD observer ratings could be a result of patient characteristics in the personality disorder group compared with the MDD group. The BDI is a measure of symptom severity and is not diagnostic. A study comparing self-reported and clinician-rated symptom severity measures found that dysthymic and nonendogenous major depressive groups self-reported significantly more symptoms than were recorded by clinicians (Rush, Hiser and Giles, 1987). Caution was needed in labelling individuals with high BDI scores as clinically depressed (Joiner, Schmidt and Metalsky, 1994; Rudd and Rajab, 1995). In contrast, Peirson and Heuchert (2001) claimed that individuals who scored high on the BDI were likely to be experiencing negative or depressed mood compared with the nonpsychiatric population. They administered the TCI and the BDI on a single occasion in a group format to 471 undergraduate psychology students, and correlations were found between the BDI and harm avoidance subscales; that is, harm avoidance was found to be associated with depressed mood. Features of harm avoidance include:

> cautious, fearful, tense, apprehensive, nervous, timid, doubtful, discouraged, insecure, passive, negativistic, or pessimistic even in situations that do not worry other people. (Cloninger *et al.*, 1994, p.20)

Peirson and Heuchert (2001) also found a strong inverse correlation between self-directedness in the TCI and the BDI — that is, low self-directedness in the TCI and high ratings of depressed mood in the BDI. Inverse correlations were also found between the BDI scores and reward dependence, persistence and cooperativeness. Novelty-seeking and self-transcendence were not correlated with the BDI as a measure of mood. Low self-directedness presents as:

> immature, weak, fragile, blaming, destructive, ineffective, irresponsible, unreliable, and poorly integrated when they are not performing to the direction of a mature leader. (Cloninger *et al*., 1994, p.24)

Richter, Polak and Eisemann (2003) compared 453 psychiatry inpatients to a normal population (850 subjects) by applying the TCI and the BDI. Again, they found that harm avoidance and self-directedness were substantially related to depressive mood. However, a study comparing 44 borderline personality disorder patients to control groups showed that borderline personality disorder patients differed significantly on novelty-seeking and cooperativeness (Fossati *et al*., 2001). The control group included 98 non–borderline personality disorder patients with other cluster B personality disorder diagnoses, 39 patients with any cluster A or cluster C personality disorder diagnoses, 70 patients with no personality disorder diagnosis and 206 non-clinical patients. In our study, some of these traits were found in patients belonging to the personality disorder group, which may have contributed to inflated BDI scoring in the group. If novelty-seeking was not correlated to the BDI mood, one trait could be low cooperativeness, which might have contributed to higher BDI scoring. Our results also revealed a significant difference in the mean BDI scores between the MDD group and the personality disorder group at discharge. Personality characteristics such as high neuroticism may cause discrepant HAMD–BDI results (Prusoff, Klerman and Paykel, 1972; Paykel *et al*., 1973; Enns, Larsen and Cox, 2000; Duberstein and Heisel, 2007). Other traits that may have contributed to the discrepancy include low extraversion, low agreeableness, dysfunctional beliefs and low self-esteem (Domken, Scott and Kelly, 1994).

The mean HAMD scores at discharge were low for both the MDD group and the personality disorder group compared with the corresponding admission scores. The results indicated a reduction in clinical symptoms since admission to the ward. It is worth noting that the HAMD assessors at discharge were blind to the SCID diagnosis results in our study. Our results showed a significant difference in the HAMD scoring between the MDD group and the personality disorder group on admission but not at discharge. For the DBD group, no significant difference in the mean HAMD scores was found both on admission and at discharge compared with the personality disorder group. Therefore, clinicians relying on the HAMD score alone are unlikely to differentiate MDD from a personality disorder. A study examining the psychometric properties of the HAMD identified that many scale items were poor contributors to the measurement of depression severity, and the HAMD was considered psychometrically and conceptually flawed (Bagby *et al*., 2004).

In terms of the CGI (severity of illness), on admission, the MDD group was judged to have a greater severity of illness compared with the personality disorder group. At discharge, the groups did not differ in the severity of illness ratings. A previous study examining the difference between bipolar II depression and MDD with comorbid borderline personality disorder concluded that the MDD with comorbid borderline personality disorder group was rated significantly lower on the Global Assessment of Functioning and poorer on social functioning compared with bipolar II depression. On the CGI depression severity scale, the MDD with comorbid borderline personality disorder group was rated significantly more severely depressed compared with bipolar II depression (Zimmerman *et al*., 2013). Our findings were mixed in terms of the CGI severity of illness. For example, at discharge, our personality disorder group (which included MDD and personality disorder) recorded a higher CGI mean score compared with the MDD group and the DBD group (similar to Zimmerman's study), but our findings were nonsignificant. However, on admission, the mean CGI severity of illness scores showed the opposite, with the personality disorder group scoring significantly less than the MDD group. For the DBD group on admission, the CGI severity of illness findings comparing the groups were nonsignificant. The Global Assessment of Functioning was not used in our study.

All groups had a significant reduction in the CGI severity of illness over the span of the admission and had a comparable degree of improvement at discharge. The CGI severity of illness failed to differentiate between the MDD group and the personality disorder group at discharge. Likewise, no observer-rated significant difference was noted at discharge between the MDD group and the personality disorder group in terms of the CGI global improvement.

3.11 Conclusions

Patients with MDD and those with a personality disorder presenting with depressive symptoms differed in profile on subjective and observer-based ratings of mood. A higher clinician rating of depressive symptoms on the HAMD was noted in the MDD group, while higher subjective reporting of depressive symptoms on the BDI was observed in those with a diagnosis of personality disorder. Improvements in observer-based assessments of mood were observed in all three diagnostic groups (MDD, DBD and personality disorder) over the span of inpatient admission. Subjective ratings of mood also improved in both the MDD group and the personality disorder group, but to a lesser extent in the personality disorder group. All

three diagnostic groups demonstrated a reduction in symptom severity compared with admission according to the CGI severity of illness findings.

CHAPTER 4: RESULTS: NEUROCOGNITION

4.1 Background

We examined the neurocognitive deficits in personality disorders and MDD, and we present the results in this chapter. Cognitive deficits in MDD have been well described, but there is an emerging body of literature that suggests that cognitive problems occur in personality disorders as well.

4.2 Objectives

Our objective was to explore patterns of change in objective and subjective ratings of cognitive function to determine whether there were differences in those with a diagnosis of personality disorder compared with those with MDD. Our outcome was a quantitative assessment of data to identify cognitive factors that predict the diagnosis at discharge. To achieve this objective, we followed the procedures and measurements outlined below.

4.3 Results (CFQ)

Diagnostic groups remain as per Chapter 3**:** MDD group (n = 24) and personality disorder group (n = 27). For the secondary analysis, diagnostic groups remain as the DBD group (n = 33) and the personality disorder group (n = 27). We calculated the total CFQ scoring (distractibility + memory + blunders + names) for analysis purposes.

4.3.1 Comparison: MDD Group v. Personality Disorder Group (CFQ)

On admission, all 24 patients completed the CFQ in the MDD group, and all 27 patients completed it in the personality disorder group (see Figure 4.1). At discharge, all 24 patients completed the CFQ in the MDD group, and 26 patients completed it in the personality disorder group. The total mean CFQ scores for the MDD group at admission and discharge were 45.0 ± 20.4 and 31.5 ± 17.8 respectively. The personality disorder group had mean scores of 74.7 ± 14.2 and 72.5 ± 17.1 for admission and discharge respectively. Table 4.1 compares the MDD group and the personality disorder group on admission and at discharge. Data distribution and appropriate statistical tests used are described in Table B.4 in Appendix B.

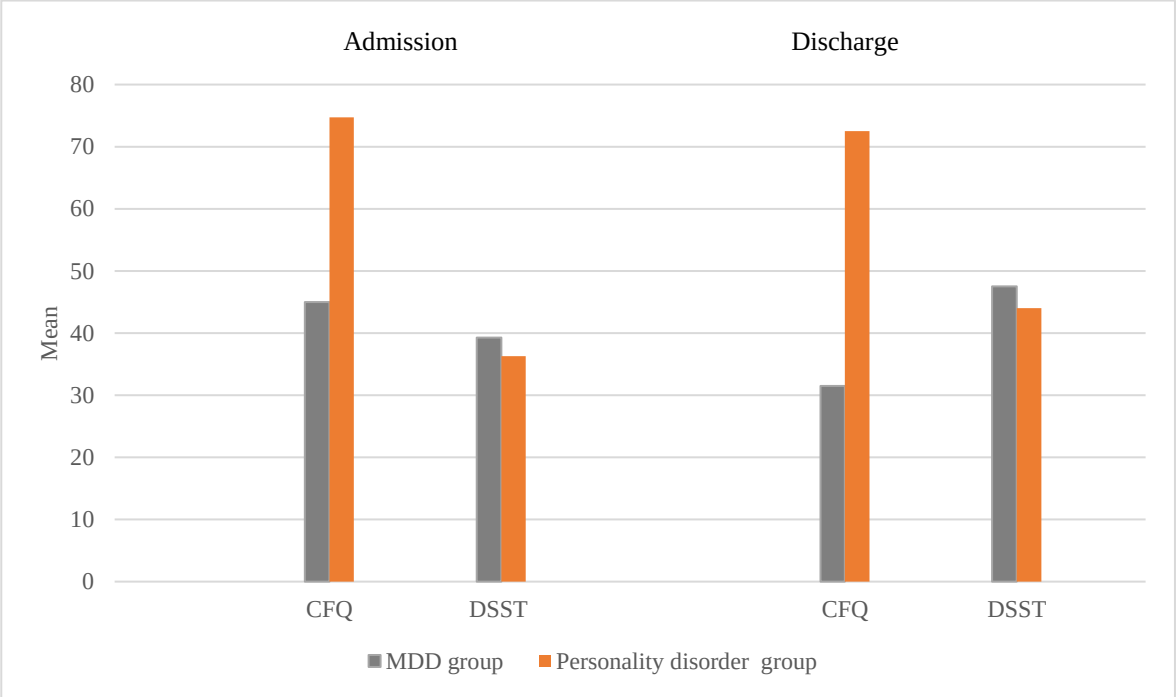

Figure 4.1: CFQ and DSST for the MDD group and the personality disorder group

Table 4.1: CFQ comparison between admission and discharge for the MDD group and the personality disorder group, n = number of patients completed the CFQ

Diagnostic group	Comparison: admission v. discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
MDD group				
CFQ	45.0 (±20.4), 24	31.5 (±17.8), 24	0.005	Paired *t*-test
Personality disorder				
CFQ	74.7 (±14.2), 27	72.5 (±17.1), 26	0.44	Paired *t*-test

In the MDD group, a significant reduction was observed in the total CFQ mean scores between admission and discharge (mean 13.4 ± 21.3, *t* 3.0, 23 df, $p = 0.005$). However, no significant difference in the CFQ mean scores was observed in the personality disorder group between admission and discharge (mean 3.6 ± 15.6, *t* 1.1 25 df, $p = 0.44$). The total CFQ means scores were then compared for the MDD group and the personality disorder group (see Table 4.2).

Table 4.2: CFQ comparison between the MDD group and the personality disorder group, n = number of patients completed the CFQ

Time of assessment	Comparison: admission v. discharge Mean (±SD), n		*p*	Statistical test
	MDD group	Personality disorder group		
Admission				
CFQ	45.0 (±20.4), 24	74.7 (±14.2), 27	0.001	Independent sample *t*-test
Discharge				
CFQ	31.5 (±17.8), 24	72.5 (±17.1), 26	0.001	Independent sample *t*-test

On admission, the total CFQ mean score for the personality disorder group was significantly higher than for the MDD group (t −6.0, 49 df, $p = 0.001$). Similarly, the total CFQ mean score at discharge for the personality disorder group was significantly higher than for the MDD group (t −8.2, 48 df, $p = 0.001$).

4.3.2 Comparison: DBD Group v. Personality Disorder Group (CFQ)

On admission, 33 patients completed the CFQ in the DBD group and 27 patients completed it in the personality disorder group (see Figure 4.2). At discharge, 32 patients completed the CFQ in the DBD group, while 26 patients completed it in the personality disorder group. The mean total CFQ for the DBD group was 43.0 ± 19 on admission and 32.5 ± 18.7 at discharge. For the personality disorder group, the total mean CFQ on admission and at discharge were 74.7 ± 14.2 and 72.5 ± 17.1 respectively. Data distribution and the statistical test used can be found in Table B.4 in Appendix B.

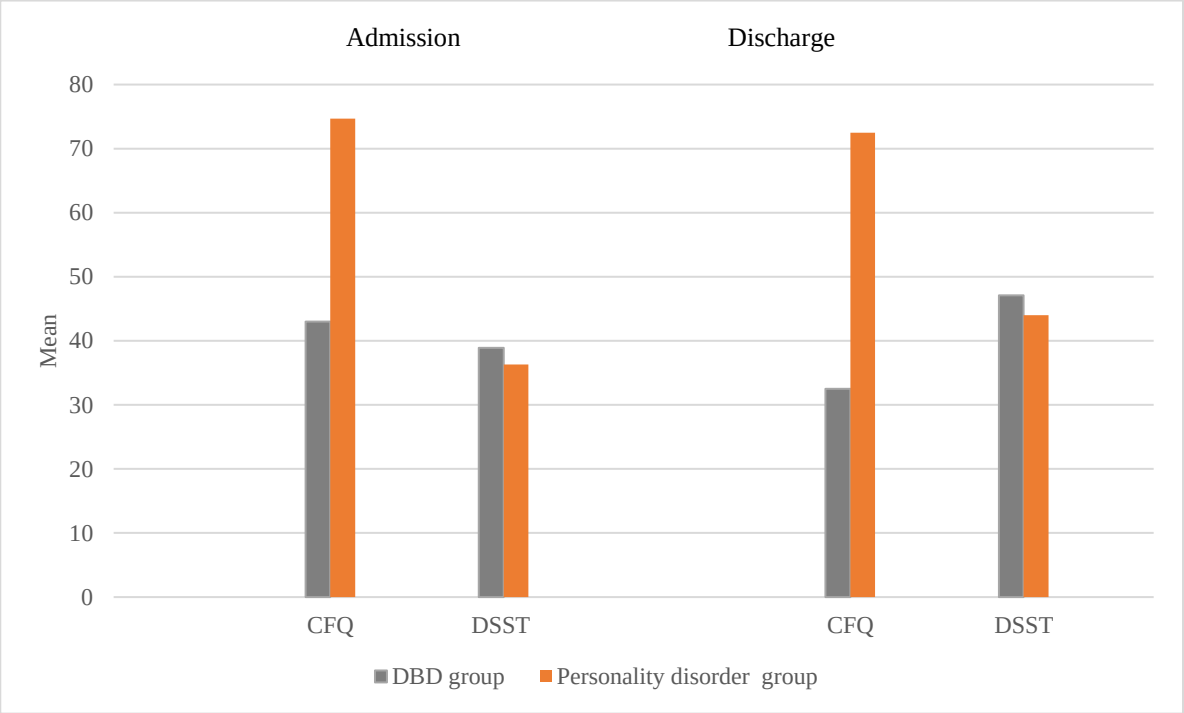

Figure 4.2: Mean total CFQ and DSST scores for the DBD group and the personality disorder group on admission and at discharge

The mean CFQ total scores were then compared for admission and discharge for each diagnostic group. The findings are summarised in Table 4.3.

Table 4.3: Total CFQ comparison between admission and discharge for the DBD group and the personality disorder group, n = number of patients completed the CFQ

Diagnostic group	Comparison: admission v. discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
DBD group				
CFQ	43.0 (±19.0), 33	32.5 (±18.7), 32	0.003	Paired *t*-test
Personality disorder group				
CFQ	74.7 (±14.2), 27	72.5 (±17.1), 26	0.44	Paired *t*-test

In the DBD group, our results showed a significant reduction between the mean CFQ total scores on admission and at discharge (mean 11.2 ± 19.9, *t* 3.1, 31 df, $p = 0.003$). No significant difference was found between admission and discharge in the mean CFQ for the personality disorder group (mean 2.2 ± 14.8, *t* 0.77, 25 df, $p = 0.44$). The total mean CFQ scores were then compared for the DBD group and the personality disorder group (see Table 4.4).

Table 4.4: CFQ comparison between the DBD group and the personality disorder group, n = number of patients completed the CFQ after excluding missing data

Time of assessment	Comparison between diagnostic groups Mean (±SD), n		*p*	Statistical test
	DBD group	Personality disorder group		
Admission				
CFQ	43.0 (±19.0), 33	74.7 (±14.2), 27	0.001	Independent sample *t*-test
Discharge				
CFQ	32.5 (±18.7), 32	72.5 (±17.1), 26	0.001	Independent sample *t*-test

Significantly higher reporting in the mean total CFQ scores was found in the personality disorder group compared with the DBD group at admission (t −7.1, 58 df, p = 0.001). Similarly, significantly higher subjective reporting in the CFQ was found in the personality disorder group compared with the DBD group at discharge (Z −8.3, 56 df, p = 0.001).

4.3.3 Correlation Between the BDI and the CFQ

We explored the correlation between the BDI and the CFQ for each diagnostic group independently both on admission and at discharge (see Table 4.5). Because the data were continuous (normally distributed), Pearson's correlation coefficient (r) was used.

Table 4.5: Correlation between the BDI and the CFQ on admission and at discharge for the diagnostic groups

Diagnostic group	Correlation between the BDI and the CFQ at time points *r* statistic (*p* significance value)	
	Admission	Discharge
MDD group	0.73 (p = 0.001)	0.70 (p = 0.001)
Personality disorder group	0.35 (p = 0.06)	0.59 (p = 0.01)
DBD group	0.58 (p = 0.01)	0.68 (p = 0.01)

Our findings suggest a strong positive (significant) relationship between the BDI and the CFQ on admission and at discharge for the MDD group (the Pearson's correlation between the BDI and the CFQ was 0.73 [p = 0.001] on admission and 0.70 [p = 0.001] at discharge). A moderate positive (significant) correlation was found between the BDI and the CFQ in the DBD group

on admission and at discharge (the correlation between the BDI and the CFQ was 0.58 [p = 0.01] on admission and 0.68 [p = 0.01] at discharge). For the personality disorder group, a moderate positive (significant) correlation was found between the BDI and the CFQ at discharge. However, a weak nonsignificant relationship was found between the CFQ and the BDI for the personality disorder group on admission (the correlation between the BDI and the CFQ was 0.35 [p = 0.06] on admission and −0.59 [p = 0.01] at discharge). To describe the weak or moderate correlation, we applied standard correlation coefficient interpretation methods (Dancey and Reidy, 2007; Akoglu, 2018; see Table B.7 in Appendix B).

4.4 Results (DSST)

DSST data were available for all 60 patients on admission and for 58 patients at discharge. Descriptive statistics were used to determine the data distribution, and the data were continuous (see Table B.5 in Appendix B).

4.4.1Comparison: MDD Group v. Personality Disorder Group (DSST)

DSST analysis was performed to compare admission and discharge for the MDD group and the personality disorder group (see Table 4.6), followed by a comparison between the groups. In the MDD group, 24 patients completed the DSST both on admission and at discharge. In the personality disorder group, 27 patients completed the DSST on admission and 26 completed it on discharge. The mean DSST scores in the MDD group for admission and discharge were 39.3 ± 13.5 and 48.2 ± 14.2 respectively. For the personality disorder group, the mean DSST values remained as 36.3 ± 15.0 on admission and 44.0 ± 18.1 at discharge (see Figure 4.1).

Table 4.6: DSST comparison between admission and discharge for the MDD group and the personality disorder group, n = number of patients completed the DSST

Diagnostic group	Comparison: admission v. discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
MDD group				
DSST	39.3 (±13.5), 24	47.5 (±14.5), 24	0.004	Paired *t*-test
Personality disorder group				
DSST	36.3 (±15.0), 27	44.0 (±18.1), 26	0.007	Paired *t*-test

A significant increase was observed between the admission and discharge mean DSST scores for both the MDD group (t −3.2, 23 df, p = 0.004) and the personality disorder group (t −2.9, 25 df, p = 0.007). A comparison was then made between the MDD group and the personality disorder group at admission and discharge (see Table 4.7).

Table 4.7: DSST comparison between the MDD group and the personality disorder group, n = number of patients completed the DSST

Time of assessment	Comparison between groups Mean (±SD), n		*p*	Statistical test
	MDD group	Personality disorder group		
Admission				
DSST	39.3 (±13.5), 24	36.3 (±15.0), 27	0.46	Independent sample *t*-test
Discharge				
DSST	47.5 (±14.5), 24	44.0 (±18.1), 26	0.45	Independent sample *t*-test

The mean DSST comparison between the MDD group and the personality disorder group was nonsignificant both at admission (t 0.74, 49 df, p = 0.46) and discharge (t 0.74, 48 df, p = 0.45).

4.4.2 Comparison: DBD Group v. Personality Disorder Group (DSST)

On admission, the DSST was completed for all 33 patients in the DBD group and all 27 patients in the personality disorder group. At discharge, the DSST was completed for 32 patients in the DBD group and 26 patients in the personality disorder group. The mean DSST score for the DBD group was 38.9 ± 12.5 at admission and 47.1 ± 13.8 at discharge (see Table 4.8). The mean DSST score for the personality disorder group was 36.3 ± 15 at admission and 44.0 ± 18.1 at discharge (see Figure 4.2).

Table 4.8: DSST comparison between admission and discharge for the groups, n = number of patients completed the DSST after excluding missing data

Diagnostic group	Comparison: admission v. discharge Mean (±SD), n		*p*	Statistical test
	Admission	Discharge		
DBD group				
DSST	38.9 (±12.5), 33	47.1 (±13.8), 32	0.001	Paired *t*-test
Personality disorder group				
DSST	36.3 (±15.0), 27	44.0 (±18.1), 26	0.007	Paired *t*-test

In the DBD group, a significant increase was observed in the mean DSST scores when comparing admission and discharge (mean −7.7 ± 11.1, *t* −3.9, 31 df, *p* = 0.001). Similar findings were also observed in the personality disorder group, where a significant increase was noted between admission and discharge in the mean DSST scores (mean −7.7 ± 13.5, *t* −2.9, 25 df, *p* = 0.007). The mean DSST scores were then compared between the DBD group and the personality disorder group (see Table 4.9).

Table 4.9: DSST comparison between the DBD group and the personality disorder group, n = number of patients completed the DSST after excluding missing data

Time of assessment	Comparison between the groups Mean (±SD), n		*p*	Statistical test
	DBD group	Personality disorder		
Admission				
DSST	38.9 (±12.5), 33	36.3 (±15.0), 27	0.46	Independent sample *t*-test
Discharge				
DSST	47.1 (±13.8), 32	44.0 (±18.1), 26	0.46	Independent sample *t*-test

The mean DSST comparison between the DBD group and the personality disorder group at admission was nonsignificant (*t* 0.73, 58 df, *p* = 0.46). Equally, no significant difference was observed between the DBD group and the personality disorder group in the mean DSST scores at discharge (*t* 0.73, 56 df, *p* = 0.46).

4.4.3 Correlation Between the DSST and the CFQ

We explored the correlation between the DSST and the CFQ for each diagnostic group independently both on admission and at discharge (see Table 4.10) using Pearson's correlation coefficient (*r*).

Table 4.10: Correlation between the DSST and the CFQ on admission and at discharge for the diagnostic groups

Diagnostic group	Correlation between the DSST and the CFQ at time points *r* statistic (*p* significance value)	
	Admission	Discharge
MDD group	-0.38 ($p = 0.06$)	0.03 ($p = 0.87$)
Personality disorder group	-0.34 ($p = 0.07$)	-0.28 ($p = 0.16$)
DBD group	-0.22 ($p = 0.21$)	0.14 ($p = 0.42$)

Our findings suggest a negative non-significant correlation between the DSST and CFQ on admission for all three diagnostic groups. At discharge, a negative but non-significant correlation was observed in the personality disorder group, and a positive but non-significant relationship was observed in the MDD and DBD groups. In the MDD group, the Pearson's correlation between the DSST and the CFQ was −0.38 ($p = 0.06$) on admission and 0.35 ($p = 0.87$) at discharge. In the personality disorder group, the correlation between the DSST and the CFQ was −0.38 ($p = 0.07$) on admission and −0.28 ($p = 0.16$) at discharge. In the DBD group, the correlation between the DSST and the CFQ was −0.22 ($p = 0.21$) on admission and 0.14 ($p = 0.42$) at discharge.

4.5 Discussion (CFQ and DSST)

On admission, those in the personality disorder group rated themselves as more cognitively impaired than the MDD group. The finding was similar in the comparison with the DBD group, in which the personality disorder group still reported themselves as more cognitively impaired than the DBD group. There was no difference between the groups on objective assessments of neurocognitive function on admission. This profile was maintained at discharge, with the personality disorder group reporting more cognitive impairment subjectively compared with the MDD group, but with no difference identified in objective measures.

Cognitive function improved objectively and subjectively in the MDD group (and the DBD group) over the span of the admission. In the personality disorder group, cognitive functions improved objectively over the admission, but subjective ratings at discharge did not differ from the admission scores. The CFQ was originally devised to measure perception, memory and motor lapses in daily life (Broadbent *et al*., 1982). Our findings suggest that the personality disorder group patients reported more subjective memory complaints compared with the MDD group and the DBD group. Wagle, Berrios and Ho (1999, p.478) reported:

> The CFQ scores had been found to correlate with some psychiatric symptoms associated with stress; hence, high scores on the CFQ were considered by some as an indicator of increased vulnerability to stress.

This raised the question of whether the high scoring on the CFQ in the personality disorder group was a result of increased vulnerability to stress. Van der Linden *et al*. (2005) reported that the CFQ correlated with psychological strain and burnout. However, it can be argued that the stress vulnerability and psychological strain were also found in the MDD group. In Chapter 3, we stated that the BDI results may correlate with anxiety symptoms. Our correlation findings comparing the BDI with the CFQ showed weak to moderate correlation between the tools, but the exact mechanism for this correlation is somewhat unclear. A clear association was identified in subjective cognitive functioning outcomes (using the Neuropsychological Symptom Self-Report) and changes in self-reported severity of affective symptoms (using the Patient Health Questionnaire 9 and seven-item Generalised Anxiety Disorder scale) in young people (Allott *et al*., 2020). Another possibility for higher CFQ scoring in the personality disorder group could be the link between childhood trauma and cognition. In our study, the personality disorder group scored high on both the CFQ and the CTQ. Velikonja *et al*. (2019) found neurocognitive deficits in patients with schizotypal personality disorder with childhood trauma compared with schizotypal personality disorder without childhood trauma. In their study, schizotypal personality disorder patients without childhood trauma demonstrated a cognitive profile similar to the healthy control group. However, the study used an objective assessment using six cognitive domains identified in the MATRICS Consensus Cognitive Battery (Nuechterlein *et al*., 2008), whereas we used subjective CFQ scoring. In our study, the correlation between the DSST and the CFQ in all three diagnostic groups both at admission and discharge were non-significant.

In the DSST, a significant difference was found between the admission and discharge scores for the MDD group, the DBD group and the personality disorder group. Thus, the DSST

performance improved in both groups at discharge, but the DSST failed to differentiate between the groups. The mean DSST scores were higher at discharge for both the MDD group and the personality disorder group than the admission scores, suggestive of an increase in processing speed, working memory and executive functioning for both groups at discharge compared with admission. Similar to our findings in the personality disorder group, Velikonja *et al*. (2019) found that patients with schizotypal personality disorder showed impairment in cognitive processing speed irrespective of childhood trauma. Velikonja's study used the symbol coding subtest of the Brief Assessment of Cognition in Schizophrenia (Keefe *et al*., 2004), which is an alternative to the DSST.

The personality disorder group scored high on the subjective CFQ at baseline and discharge (expressing subjective cognitive deficits) despite objective findings on the DSST showing an improvement. The CFQ findings were consistent with the objective DSST scoring in the MDD group and the DBD group (a reduction in CFQ memory complaints was observed at discharge together with an objective increase in the DSST scoring). In contrast, the personality disorder group improved on the DSST but not subjectively on the CFQ.

In summary, the discrepancy between the objective (DSST) and subjective (CFQ) cognitive testing findings may help to differentiate personality disorder from MDD, and this warrants further research. A higher total CFQ mean score both on admission and at discharge with an objective improvement in the DSST may raise the suspicion of personality disorder diagnosis. In contrast, Black *et al*. (2009) reported that selected personality traits such as impulsivity have a primary role in predicting borderline personality disorder over neuropsychological test abnormalities. However, the authors stated that this conclusion did not infer that neuropsychological tests were unable to predict diagnosis, but that personality traits performed better. Ruocco, Lam and McMain (2014) argued that conventional neuropsychological testing does not detect cognitive impairments associated with emotional instability and stress, highlighting the importance of subjective reports of cognitive impairment.

4.6 Conclusions (CFQ and DSST)

In terms of neurocognitive results, the objective assessment of neurocognitive function (CFQ and DSST) demonstrated improvements over the course of inpatient admission in both the MDD and personality disorder groups, but those in the personality disorder group continued to report high levels of subjective cognitive deficits at discharge, while the MDD group

reported subjective improvements. The profiles of objective and subjective ratings of neurocognitive function on admission and at discharge may help to differentiate those with a personality disorder from those with MDD alone. This warrants further research with a view to guiding management strategies.

CHAPTER 5: RESULTS: CHILDHOOD TRAUMA

5.1 Background

In this chapter, we present our quantitative analysis of the relationship between MDD, personality disorder and childhood trauma, as assessed by the CTQ.

5.2 Objectives

Our objective was to explore the differences in the subjective reporting of childhood trauma to determine whether there were differences between those with a diagnosis of personality disorder and those with MDD. The outcome measure was that the CTQ scores were compared between the MDD group (DBD group) and the personality disorder group.

5.3 Cut-off scores for the CTQ

The CTQ contained 28 statements, such as 'When I was growing, I felt loved', and participants were asked to answer on a five-point Likert scale from 'never true' to 'very often true'. Therefore, the CTQ subscale scores (under each abuse category) ranged from 5 to 25. Studies have explored cut-off scores to differentiate between the presence or absence of significant trauma (Bernstein and Fink, 1998; Walker *et al*., 1999a, 1999b; Bevilacqua *et al*., 2012). According to the original CTQ manual, the sum scores of the subscales are classified for severity on four levels (Bernstein and Fink, 1998). The cut-off scores are described in Table 5.1.

Table 5.1: Cut-off scores for each subscale as defined in the CTQ manual (Bernstein and Fink, 1998)

Type of abuse	Cut-off scores for each trauma subscale			
	None or minimal trauma	Low to moderate trauma	Moderate to severe trauma	Severe to extreme trauma
Emotional abuse	5–8	9–12	13–15	16+
Physical abuse	5–7	8–9	10–12	13+
Sexual abuse	5	6–7	8–12	13+
Emotional neglect	5–9	10–14	15–17	18+
Physical neglect	5–7	8–9	10–12	13+

In the CTQ manual handbook, for the severity of trauma, ‘none’ is also described as ‘none or minimal’, ‘low’ is also described as ‘low to moderate’, ‘moderate’ it also described as ‘moderate to severe’ and ‘severe’ is also described as ‘severe to extreme’. Some authors appear to have simply used ‘none’, ‘low’, ‘moderate’ and ‘severe’. Walker *et al*. (1999a, 1999b) used slightly different CTQ cut-off values to categorise childhood trauma:

1. 8 or higher for physical abuse
2. 8 or higher for physical neglect
3. 8 or higher for sexual abuse
4. 10 or higher for emotional abuse
5. 15 or higher for emotional neglect.

In our study, we applied cut-off scores for each childhood trauma subscale defined as per the CTQ manual (see Table 5.1) to explore the prevalence of childhood trauma in our study sample. We examined individual childhood trauma scoring under emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect for group comparisons.

5.4 Results (CTQ)

All 60 patients were given the CTQ, and it was completed by all 24 patients in the MDD group and all 33 patients in the DBD group. In the personality disorder group, it was completed by 26 patients, and some parts of the CTQ were completed by all 27 patients. Most patients completed the CTQ in the week before the discharge planning meeting. The remaining patients completed the CTQ within two days prior to discharge from the ward. Diagnostic groups remain as per Chapter 3: MDD group (n = 24) and personality disorder group (n = 27). For the secondary analysis, diagnostic groups remain as the DBD group (n = 33) and the personality disorder group (n = 27).

5.4.1 Prevalence of Childhood Trauma in the Sample

Standard dichotomous cut-offs from the CTQ manual were applied to the five subscales of the CTQ to represent significant abuse in our groups. This enabled us to compare the prevalence of abuse in our sample with that reported in other samples in the literature. The prevalence of abuse in our MDD group is described in Table 5.2.

Table 5.2: Number of patients reporting childhood trauma under each abuse category according to severity of trauma as per CTQ manual cut-off scores for the MDD group

Type of abuse	None or minimal	Low to moderate	Moderate to severe	Severe to extreme
Emotional abuse	13 (54%)	5 (21%)	0 (0%)	6 (25%)
Number of patients reporting trauma (%)				
Physical abuse	17 (71%)	2 (8%)	2 (8%)	3 (13%)
Sexual abuse	18 (75%)	1 (4%)	2 (8%)	3 (13%)
Emotional neglect	11 (46%)	6 (25%)	2 (8%)	5 (21%)
Physical neglect	14 (58.3%)	7 (29.1%)	1 (4.1%)	2 (8.3%)

In the MDD group, a higher proportion of patients reported no or minimal trauma compared with the personality disorder group numerically. When the trauma was reported, it was most likely to be emotional abuse and emotional neglect (46% of the patients in the MDD group complained of emotional abuse and 44% complained of emotional neglect). Severe to extreme childhood trauma was mainly reported in the form of emotional abuse (25%) and emotional neglect (21%). MDD group patients without a diagnosis of personality disorder also gave a history of sexual abuse. Severe to extreme sexual abuse was reported by 13% of the sample, and 13% reported physical abuse. Two patients (8.3%) reported severe to extreme physical neglect. The prevalence of childhood trauma in our personality disorder group is described in Table 5.3.

Table 5.3: Number of patients reporting childhood trauma under each abuse category according to the severity of trauma as per CTQ cut-off scores for the personality disorder group

Type of abuse	None or minimal	Low to moderate	Moderate to severe	Severe to extreme
Emotional abuse*	5 (18.5%)	6 (22.2%)	5 (18.5%)	10 (37%)
Number of patients reporting trauma (%)				
Physical abuse*	11 (40.7%)	3 (11.1%)	5 (18.5%)	7 (25.9%)
Sexual abuse	14 (51.9%)	1 (3.7%)	3 (11.1%)	9 (33.3%)
Emotional neglect*	8 (29.6%)	5 (18.5%)	3 (11.1)	10 (37%)
Physical neglect*	15 (55.6%)	1 (3.8%)	3 (11.1%)	7 (25.9%)

*Data are missing under some abuse categories (3.8%)

In the personality disorder group, a higher proportion of patients complained of emotional abuse and emotional neglect compared with other forms of abuse numerically. That is, 37% of patients reported severe to extreme emotional abuse and 37% reported severe to extreme emotional neglect. Around half of the personality disorder group patients reported sexual abuse (51.9% reported none or minimal sexual abuse). Only 33.3% reported severe to extreme sexual abuse, while 25.9% reported physical abuse and 25.9% reported physical neglect (severe to extreme). The prevalence of abuse in the DBD group is described in Table 5.4.

Table 5.4: Number of patients reporting childhood trauma under each abuse category according to the severity of trauma as per CTQ cut-off scores for the DBD group

Type of abuse	None or minimal	Low to moderate	Moderate to severe	Severe to extreme
Emotional abuse	20 (60.6%)	7 (21.2%)	0 (0%)	6 (18.2%)
Number of patients reporting trauma (%)				
Physical abuse	25 (75.8%)	2 (6.1%)	2 (6.1%)	4 (12.1%)
Sexual abuse	26 (78.8%)	1 (3%)	2 (6.1%)	4 (12.1%)
Emotional neglect	17 (51.5%)	8 (24.2%)	3 (9.1%)	5 (15.2%)
Physical neglect	22 (66.7%)	8 (24.2%)	1 (3%)	2 (6.1%)

In the DBD group, similar to the MDD group, a higher proportion of patients reported no to minimal childhood trauma compared to the personality disorder group numerically. Again, the trauma in the DBD group was most likely to be emotional abuse and emotional neglect. Severe to extreme emotional abuse and emotional neglect were reported by 18.2% and 15.2% of the sample respectively. The CTQ mean scores under the five trauma subscales (emotional, physical, sexual abuse, emotional and physical neglect) were calculated and compared among the groups.

5.4.2 Comparison: MDD Group v. Personality Disorder Group (CTQ)

The CTQ mean scores between the MDD group and the personality disorder group were compared for each type of trauma (see Table 5.5). Data were not normally distributed, and the Mann–Whitney *U* test was used for comparison between groups. Data distribution for the CTQ analysis is presented in Table B.6 of Appendix B.

Table 5.5: CTQ mean scores for the five subscales comparing the MDD group and personality disorder group, n = number of patients completed the CTQ

Type of abuse	Comparison between groups Mean (±SD), n		*p*
	MDD group	Personality disorder group	
Emotional abuse	10.6 (±6.2), 24	14.8 (±6.9), 26	0.01
Physical abuse	7.3 (±3.9), 24	10.8 (±6.3), 26	0.01
Sexual abuse	7.5 (±5.6), 24	11.6 (±8.7), 27	0.06
Emotional neglect	10.8 (±5.9), 24	15 (±6.9), 26	0.02
Physical neglect	7.2 (±2.4), 24	8.9 (±4.4), 26	0.2

The CTQ mean scores under each abuse category were higher in the personality disorder group than the MDD group. In the CTQ, significantly higher reporting of childhood trauma was observed in the personality disorder group compared with the MDD group for emotional abuse (Z −2.3, $p = 0.01$), physical abuse (Z −2.3, $p = 0.01$) and emotional neglect (Z −2.2, $p = 0.02$). No significant differences were observed between the MDD group and the personality disorder group for physical neglect (Z −1.0, $p = 0.2$) and sexual abuse (Z −1.8, $p = 0.06$).

5.4.3 Comparison: DBD Group v. Personality Disorder Group (CTQ)

Secondary analysis was conducted for the CTQ mean scores under the five trauma subscales to compare the DBD group and the personality disorder group (see Table 5.6). Data were not normally distributed, and the Mann–Whitney *U* test was used for the analysis. Data distribution for the CTQ analysis is presented in Table B.6 of Appendix B.

Table 5.6: CTQ mean scores for five subscales comparing the DBD group and the personality disorder group, n = number of patients completed the CTQ

Type of abuse	Comparison between groups Mean (±SD), n		*p*
	DBD group	Personality disorder group	
Emotional abuse	9.6 (±5.6), 33	14.8 (±6.9), 26	0.001
Physical abuse	7.1 (±3.8), 33	10.8 (±6.3), 26	0.001
Sexual abuse	7.4 (±5.8), 33	11.6 (±8.7), 27	0.02
Emotional neglect	10.0 (±5.5), 33	15 (±6.9), 26	0.001
Physical neglect	6.7 (±2.2), 33	8.9 (±4.4), 26	0.04

These results show higher mean scores in the personality disorder group compared with the DBD group under each category. The highest mean scores were recorded under emotional neglect, emotional abuse and sexual abuse in the personality disorder group. When comparing scores from the DBD group with those of the personality disorder group, mean scores under each trauma category were significantly higher in those with a personality disorder (emotional abuse [Z −3.2, $p = 0.001$], physical abuse [Z −2.9, $p = 0.001$], sexual abuse [Z −2.3, $p = 0.02$], emotional neglect [Z −2.8, $p = 0.001$], physical neglect [Z −2.0, $p = 0.04$]).

5.5 Discussion (Childhood Trauma)

In our literature review, we reported an association between childhood trauma and depressive illness and personality disorders. Responses to treatment are also affected by childhood trauma, and some authors have suggested a common underlying factor, such as early childhood trauma for comorbidity of depressive disorders and personality disorders. In our study, patients in the personality disorder group reported higher mean scores for childhood trauma in all five categories (emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect) compared with the MDD group and the DBD group. Several previous studies reported that childhood physical abuse, sexual abuse, emotional abuse, physical neglect and emotional neglect were common in patients with personality disorders (Zanarini *et al*., 1989; Luntz and Widom, 1994; Gibb *et al*., 2001; Bierer *et al*., 2003; Rettew *et al*., 2003; Battle *et al*., 2004; Johnson, Shehan and Chard, 2004; Grover *et al*., 2007; Tyrka *et al*., 2009a, 2009b). Hence, it could be argued that there is a higher degree of childhood trauma in personality disorders compared with MDD. However, it could also be due to higher reporting of childhood trauma in personality disorders compared with MDD consequent to their presentation or recollections at times of distress. Bendstrup *et al*. (2021) reported that females with borderline personality disorder had incoherent autobiographical narratives, and this reduced narrative coherence could be associated with increased self-reporting of childhood trauma. In our study, we further observed higher subjective reporting of symptoms in the BDI in the personality disorder group compared with the MDD group and the DBD group (see Chapter 3). The CTQ is a subjective measure, and it is possible that subjective reporting differences between MDD and personality disorders may have affected our findings. Contemporaneous identification of childhood trauma can be difficult to achieve (Jacobs, Bruhn and Graf, 2008). Several limitations have been identified in retrospective reporting of childhood trauma as used in the CTQ, including infantile amnesia (Howe and Courage, 1993), retrospective recall issues (Hardt and Rutter, 2004), mood-state-dependent memory in recall

(Bower, 1981) and seven sins of memory: transience, absentmindedness, blocking, misattribution, suggestibility, bias and persistence (Schacter, 1999). A systematic review exploring the agreement between the prospective measure (used to capture the objective experience) and the retrospective measure (used to capture the subjective experience) of childhood trauma showed poor agreement, which could be due to the motivation of reporters, measurement features and memory biases (Baldwin *et al.*, 2019). Despite these limitations, the CTQ is a widely used validated tool, and its items are phrased in both the objective and subjective manner (DiLillo *et al*., 2006). Liebschutz *et al*. (2018) compared the CTQ to prospective self-reports of childhood trauma. The study suggested that the CTQ provided a reasonable retrospective assessment of prospectively found childhood trauma.

Klein, Fassbinder and Schweiger (2014) reported a common underlying factor, such as childhood trauma, for comorbidity of chronic depression plus personality disorders. In our study, patients with MDD plus a personality disorder reported childhood trauma. Wiersma *et al*. (2009) analysed the data collected from the Netherlands Study of Depression and Anxiety and found a significant association between childhood trauma and chronicity of depression (OR = 2.06, $p = 0.02$).

In our MDD group and the DBD group, the highest mean scores on the CTQ were recorded for emotional abuse and emotional neglect. It can be argued that higher CTQ mean scoring for emotional abuse and emotional neglect was a result of the sensitivity of the questions. This issue also applies to the personality disorder group. The CTQ was found to be more sensitive in detecting emotional abuse and emotional neglect compared with the childhood trauma interview-based measure across MDD, dysthymia and anxiety disorders (Spinhoven *et al*., 2014). Chapman *et al*. (2004) found that childhood emotional abuse increased risk for lifetime depressive disorders in women (adjusted OR 2.7) and men (adjusted OR 2.5), and this increased risk was significant compared with other childhood trauma types. Similarly, a study conducted on depressed patients by Negele *et al*. (2015) using the CTQ found the highest reporting of emotional abuse (61%) and emotional neglect (52%) in their sample. Similarly, the type of trauma reported was most likely to be emotional abuse and emotional neglect in our MDD group and DBD group. Negele *et al*. (2015) identified the prevalence of childhood physical abuse (26.9%), sexual abuse (25.2%) and physical neglect (31.8%). In comparison, the prevalence was 29% (physical abuse), 25% (sexual abuse) and 42% (physical neglect) respectively in our MDD group. It appeared that the prevalence of emotional neglect and physical abuse was closer in our study and Negele's study. The prevalence of childhood

sexual abuse was almost the same (25%) in both studies. However, there were differences in the study samples used; for example, Negele *et al*. (2015) used community patients with chronic depression, while we used acute inpatients with MDD. Battle *et al.* (2004) compared the retrospective reports of childhood trauma using semi-structured interviews between MDD and personality disorder patients in a community sample. This study used the Childhood Experiences Questionnaire — Revised to assess childhood trauma, and it consisted of five types of abuse and seven types of neglect. In Battle's study, 30% reported emotional abuse and 17% reported sexual abuse among MDD patients. It appeared that the prevalence of childhood trauma depended on the sample used, whether it was clinical sample or non-clinical sample. For example, Bevilacqua *et al.* (2012) investigated the prevalence of significant childhood trauma in a non-clinical sample (prisoners) and found higher reporting of neglect. Findings from 226 prisoners showed that childhood physical neglect (66.8%), physical abuse (40.3%) and emotional neglect (40.3%) were the most common forms of childhood trauma experienced in their sample. A higher proportion (82%) of personality disorder patients in Battle *et al.*'s (2004) study also reported any form of neglect. In contrast, the prevalence of physical neglect was low in our personality disorder group, MDD group and DBD group. The prevalence of sexual abuse among personality disorder patients appears to be almost similar in both our and Battle *et al.*'s study (34%).

In our study, the acute state of the mental illness patients may have affected the CTQ results. Church *et al*. (2017) investigated the potential confounders in retrospective reports of childhood trauma, mainly minimisation and denial in participants with and without a severe mental disorder. In this study, the minimisation/denial score was increased in healthy individuals compared to the patient group (schizophrenia spectrum, bipolar spectrum or MDD with psychotic features). In contrast, Fisher *et al*. (2010) found that patient reports of childhood trauma were not associated with current severity of psychotic symptoms or depressed mood. However, other studies have reported depressed mood affecting retrospective reporting of childhood trauma (Wolfkind and Coleman, 1983; Lewinsohn and Rosenbaum, 1987). The CTQ was found to have good internal consistency (Cronbach's alpha 0.86) in an MDD sample (Wang *et al*., 2022).

Klein *et al*. (2015) reported that emotional abuse, emotional neglect and physical neglect were associated with avoidant personality disorder, although only emotional abuse remained a significant predictor of the presence of avoidant personality disorder in chronic depression. In our study, the highest CTQ mean scores were recorded for emotional abuse and emotional

neglect in the personality disorder group (which contained MDD plus personality disorder). Avoidant personality disorder was found in 30% of our personality disorder group, and borderline personality disorder was found in 81% of the personality disorder group. In Klein *et al*.'s (2015) study, patients with chronic depression reported more sexual abuse and less physical neglect. Similarly, the reported mean CTQ scores for physical neglect were lowest in our three diagnostic groups (see Tables 5.5 and 5.6).

To the best of our knowledge, none of the previous studies compared MDD and personality disorders using retrospective childhood trauma scales in an acute inpatient setting. Our results showed significantly higher subjective reporting of childhood trauma in the personality disorder group compared with the DBD group in all five categories: emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect. However, when the CTQ findings were compared between the MDD group and the personality disorder group, significantly higher subjective reporting of childhood trauma was observed for emotional abuse, physical abuse and emotional neglect, but not for sexual abuse and physical neglect. This warrants further research in this area with a larger sample size.

CHAPTER 6: QUALITATIVE ANALYSIS OF THE RELATIONSHIP BETWEEN AFFECTIVE STATE AND PERSONALITY RATINGS (ANALYSIS OF INPATIENT BEHAVIOUR)

6.1 Background

In our structured observational design, we aimed to report patients' presentation and behaviours as they were occurring in an inpatient setting. We used qualitative research methods for this purpose.

Qualitative data techniques were used to gather information from inpatient clinical records and from the observations made by multidisciplinary staff over the span of a given patient's hospital stay. We applied triangulation, which is the use of multiple methods or data sources to develop a comprehensive understanding of a phenomenon (Carter *et al*., 2014). Denzin (2006) and Patton (1999) identified four types of triangulation: (a) method triangulation, (b) investigator triangulation, (c) theory triangulation and (d) data source triangulation. We applied method triangulation (using more than one method to gather data), such as staff observations, staff questionnaire and documents (patient clinical records). Staff observations were recorded in the staff questionnaire and in the electronic patient clinical records. In our RAPID study, qualitative data were gathered using two methods. First, we went through patient clinical records during their inpatient stay (see Chapter 6). Second, we distributed a qualitative questionnaire to staff to record their diagnosis as well as the presentations and behaviours that led the staff member to reach their diagnosis (see Chapter 7).

6.2 Objectives

Our objective was to identify qualitatively the factors that predict diagnosis at discharge in inpatients presenting with features of depression. Our outcome measure was a qualitative assessment of data to identify any staff observational differences in those with a diagnosis of MDD compared with personality disorder identified via clinical records.

6.3 Methods

We applied both content and thematic analysis methods to analyse our qualitative data. Content analysis determines the presence of certain words (e.g., Word Cloud), themes or concepts within the qualitative dataset. Content analysis is used to quantify (frequency) and

analyse the presence, meanings and relationships of such certain words, themes and concepts (Krippendorff, 1980; Hsieh and Shannon, 2005; Elo *et al*., 2014). In qualitative data, a code is a basic analytic unit that is given a name that describes what is being said or documented. Themes can be expressed in longer phrases or sentences.

In content analysis, qualitative data can be reduced to concepts that describe the phenomenon (Cavanagh, 1997; Hsieh and Shannon, 2005; Elo and Kyngäs, 2008) by creating categories, concepts, a model, conceptual system or conceptual map (Weber, 1990; Morgan, 1993; Elo and Kyngäs, 2008). Content analysis can use an inductive or deductive approach. The inductive approach involves open coding, creating categories and abstraction (the abstraction process is the stage during which concepts are created; Elo and Kyngäs, 2008). Deductive content analysis involves categorisation matrix development (matrix coding), whereby all of the data are reviewed for content and coded for correspondence to identify categories (Polit and Beck, 2012). We used deductive content analysis to categorise the themes into diagnostic groups.

We also conducted thematic analysis of the data. Thematic analysis provides a foundational core method for conducting many other forms of qualitative analysis (Boyatzis, 1998). Thematic analysis is not a separate method but is used to assist in qualitative analysis (Boyatzis, 1998; Ryan and Bernard, 2000; Holloway and Todres, 2003). Similar to content analysis, thematic analysis can be inductive or deductive. In the inductive approach, the themes that are identified are strongly linked to the data themselves (data-driven), and codes are developed without trying to fit them into a pre-existing coding frame or the investigators' analytic preconceptions (Braun and Clarke, 2006). Deductive analysis is driven by the researchers' theoretical or analytic interest (in our case, MDD and personality disorders) and may provide a more detailed analysis of some aspects of the data (Braun and Clarke, 2006). We applied the deductive approach in the thematic analysis. One limitation of the deductive approach is that it tends to produce a less rich description of the overall data.

We first used the thematic analysis deductive approach to develop codes and theoretical concepts (see Figure 6.1). Once the codes and theoretical concepts were developed, we used the content analysis deductive approach to develop categories (see Table 6.1).

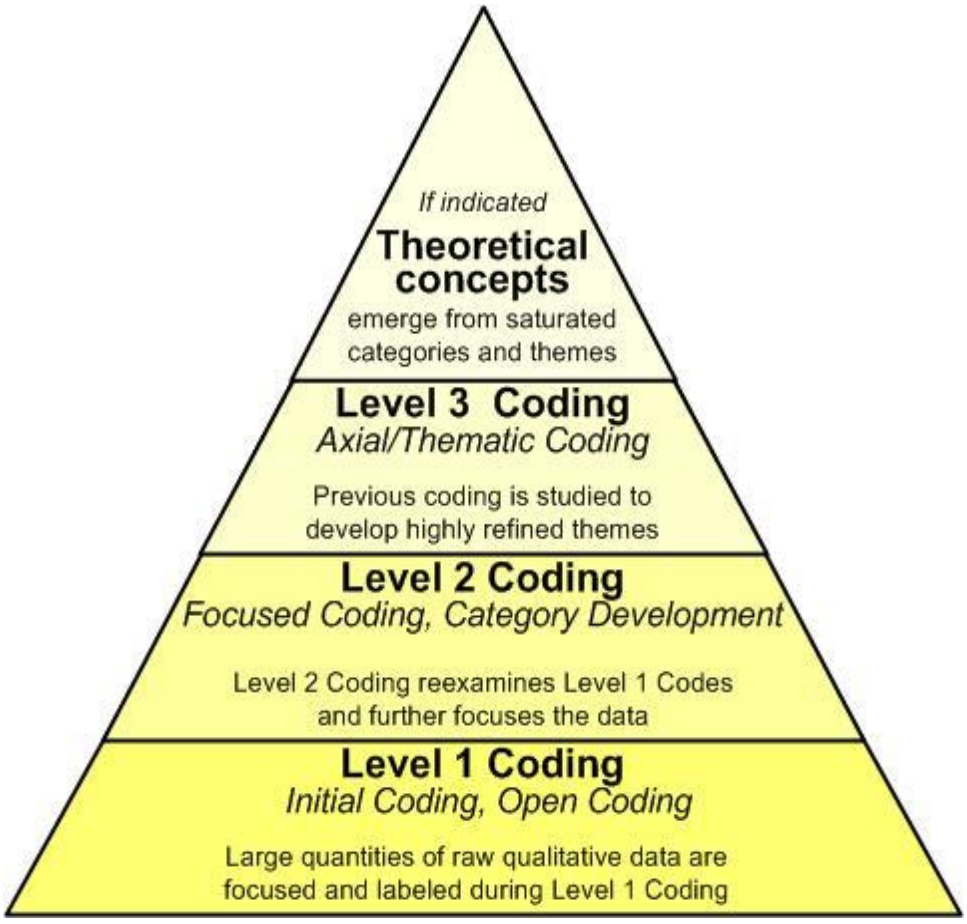

Figure 6.1: Qualitative data gathering and thematic analysis (source: http://qrtips.com/coding.htm)

In the CNTW NHS Foundation Trust, patient notes were written using a computerised system called Rio. Individual patient notes for the period of their stay were screened in Rio (after discharge). All entries by the staff were then extracted. These included key behaviours observed by the staff, patient symptoms recorded in the notes by the staff, and incident records in the ward. The entries were from nursing staff, nursing assistants, support workers, medical staff (including psychiatrists and medical officers), ward psychologists, discharge facilitators, community staff (recorded by the community staff during their patient's inpatient stay), occupational therapists, exercise therapists, physiotherapist, dieticians and ward secretaries. Rio entries were then coded using NVivo 11 (QSR International, 2015). A code is a sentence of transcribed field notes (Rio notes) used to classify the words. Code can also be an abbreviation or symbol applied to a segment of words (Miles and Huberman, 1989, p.78). Raw qualitative data are called level 1 coding; once the codes are organised in a more focused manner after re-examining, they are called level 2 coding. Level 2 codes are further studied

to develop highly refined themes (level 3 coding). Theoretical concepts then emerge from those themes (emerge from level 3 coding).

Rio notes were extracted for all 60 patients independently after converting confidential information such as personal details to study-specific identification terms (e.g., personal name of the first participant in the study was converted to RAPID1). For each patient, all staff entries were extracted and coded (level 1 coding). Initial codes were then re-examined to search for emergent subthemes (level 2 coding). Level 2 codes were further studied to develop highly refined subheadings (level 3 coding or themes). All codes were then reviewed again with reference to the original transcriptions (staff entries in Rio notes). Codes (level 1, 2 and 3) were iteratively adjusted to more appropriate codes.

After completing the initial thematic analysis (level 1, 2 and 3 coding), we applied content analysis using matrix coding principles. The qualitative coding matrix (matrix coding) is a systematic way of achieving discrimination between data sources and various interpretations of the different parties (in this case, between diagnostic groups). The matrix coding creates theory from data (Glaser and Strauss, 1967).

For matrix coding analysis purposes (content analysis), we divided the diagnosis groups into the MDD group, the personality disorder group and the exclusion group, as detailed below:

a) MDD group (n = 24): This group included patients with a DSM-5 diagnosis of MDD (n = 24) after applying the inclusion and exclusion criteria. Patients without an MDD diagnosis (i.e., patients with subsyndromal depressive symptoms such as adjustment disorder, anxiety disorder, post-traumatic stress disorder and eating disorder) were not included in this group (n = 7; see Figure 3.2). Two patients with a diagnosis of dysthymia were also not included in this group, and none of the patients in the group had a comorbid diagnosis of personality disorder.
b) Personality disorder group (n = 27): This group included 27 patients with a personality disorder alone or with a comorbidity (personality disorder with MDD = 14 and personality disorder without MDD = 13).
c) Exclusion group (n = 9): None of these patients had an MDD diagnosis or personality disorder diagnosis. However, they fulfilled the inclusion criteria for the RAPID study. Seven patients in this group had subsyndromal depressive symptoms (RAPID study IDs 19, 24, 32, 38, 47, 49, 52), and two patients had dysthymia (RAPID study IDs 28 and 31). Patients in the group had diagnoses of adjustment disorder, anxiety disorder,

post-traumatic stress disorder, eating disorder and autism spectrum disorder (subsyndromal depressive symptoms). The process is summarised in Figure 6.2. The exclusion group only had nine patients, which may amount to insufficient data for qualitative analysis. Nevertheless, recorded behaviours from this group were extracted as the minimum sample size in qualitative data could be five (see Section 2.7).

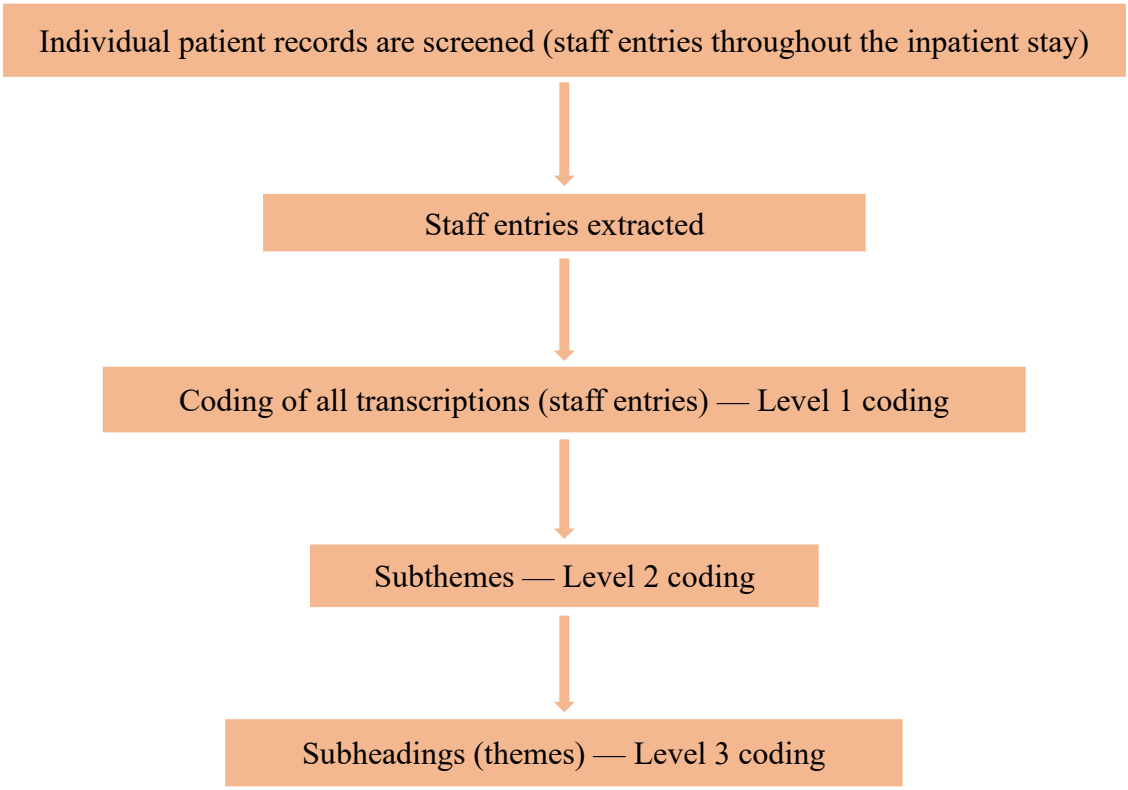

Figure 6.2: Qualitative thematic analysis plan for data obtained from clinical records

As described in Section 6.3, the thematic analysis level 1, 2 and 3 codes were first extracted and entered into NVivo 11 for all 60 patients. We then re-examined which diagnostic groups those codes belonged to using the matrix coding option in NVivo 11. The matrix coding provided the number of times each coded behaviour was recorded under each diagnostic group (MDD group, personality disorder group, exclusion group). This allowed us to identify and compare common codes in the diagnostic groups (content analysis). Once the qualitative coding matrix (matrix coding) achieved the discrimination between various interpretations of the different diagnostic groups (MDD group v. personality disorder group), we created theoretical concepts from those themes and codes. Following this content analysis of the clinical records, four categories of theoretical concepts were identified: ‘personality disorder group only behaviours’, ‘personality disorder dominant behaviours’, ‘MDD group dominant behaviours’ and ‘other behaviours’. Table 6.1 and Figure 6.3 summarise the themes (level 3

coding), theoretical concepts and basis for the content analysis. A full list of coding, subthemes and themes are presented in Appendix C.

Table 6.1: Summary of themes and number of times respective themes are recorded (content analysis) under each diagnostic group using qualitative coding matrix

Behaviour noted during ward stay	MDD group	Personality disorder group	Exclusion group
6.4.1 Personality disorder group only behaviours			
Overinvolved in the care of other patients	0	8	0
Inappropriate amusement of other patients' distress	0	2	0
Patient contacting family and friends for their involvement in their treatment	0	10	0
Self-harming repeatedly on the same self-harmed site	0	5	0
Demanding of staff attention and time	0	8	0
6.4.2 Personality disorder group dominant behaviours			
Damaging property in the ward with aggression	2	6	1
Self-harm thoughts subjective complaints	27	69	13
Patient was unhappy about other patients in the ward	1	9	1
Patient was unhappy about a staff member in the ward	1	9	0
Expressing unhappiness about the ward care/treatment	3	15	0
Unwilling/unhappy for discharge from the ward	3	25	2
Self-harm thoughts or attempts when planning discharge	1	10	1
Actual self-harm in the ward (observer-based)	4	37	2
Alcohol or illicit drug use (observer-based) in the ward	1	12	2
Demanding or seeking medications from ward staff	4	20	1
Disgruntled, rude, dismissive, abrupt with ward staff	18	60	12
Making derogatory comments about the ward and staff	1	19	1
Altercations with other patients in the ward	5	17	1
Expressing anxieties about discharge from the ward	7	15	0
Patient reporting that medications not helping or beneficial	8	32	4
Patient refusing medications in the ward	2	13	4
6.4.3 MDD group dominant			
Patient feels ready, keen and improved for discharge	17	2	4
Family or friends reporting an improvement in their patient	7	1	1
Psychomotor retardation observed by the staff	6	0	0
Observer-based reporting of hopelessness	18	5	3
Patient felt medications helpful/beneficial in the ward	11	4	4
Patient requesting discharge (didn't like the ward)	25	14	8

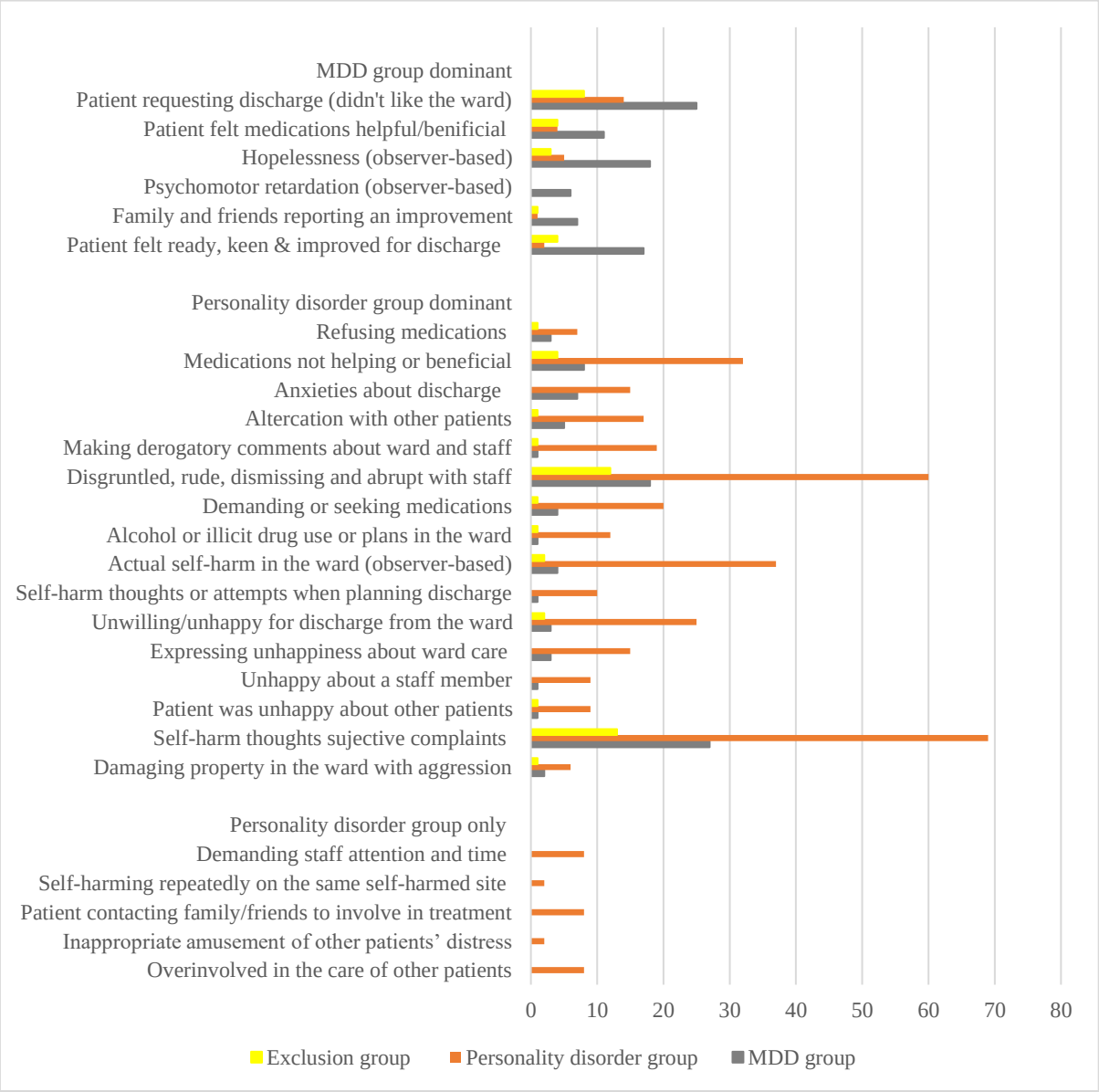

Figure 6.3: Summary of themes and number of times respective themes are recorded (content analysis) under each diagnostic group

6.4 Results (Clinical Records)

This section describes the themes (level 3 coding) identified from the theoretical concepts. It is divided into:

- Personality disorder only behaviours (Section 6.5.1)
- Personality disorder dominant behaviours (Section 6.5.2)
- MDD group dominant behaviours (Section 6.5.3)
- Other behaviours (Section 6.5.4).

A summary of the main results is presented first, followed by the results described in more detail. If the codes, subthemes and themes showing relevant behaviour only appeared in the personality disorder diagnostic group, we categorised them under the theoretical concept 'personality disorder only behaviours'. Some of the codes, subthemes and themes showing relevant behaviours appeared more frequently in patients belonging to the personality disorder group than the MDD group; therefore, we categorised them under the theoretical concept 'personality disorder dominant behaviours'. If the same codes, subthemes and themes showing relevant behaviours appeared more frequently in patients belonging to the MDD group than the personality disorder group, we categorised them under the theoretical concept 'MDD group dominant behaviours'.

In addition, we noted that some codes were common to both the personality disorder group and the MDD group, and we found it difficult to categorise them under a particular dominant diagnostic group. For example, the theme of 'patient's help-seeking behaviours' was observed almost equally across both the personality disorder group and the MDD group. Those were categorised under 'other behaviours'. We also noted that a few codes and subthemes appeared in the MDD group but not in the personality disorder group or the exclusion group. For example, 'psychomotor retardation' was observed by the staff in the ward only in MDD group patients.

6.5 Summary of Main Results (Clinical Records)

6.5.1 Personality Disorder Group Only Behaviours

Some of the themes that were only exhibited by personality disorder group patients were 'overinvolved in the care of other patients', 'inappropriate amusement of other patients' distress', 'patient seeking involvement of family/friends in their ward management', 'self-harming repeatedly on the same site (already self-harmed site)', 'demanding staff attention and time' and 'patient leaving the ward without completing the discharge paperwork once the discharge decision was made'. None of the patients in the MDD group showed those behaviours.

Staff recorded that the patient was 'overinvolved' in the care of other patients, to describe these behaviours. For example:

> RAPID16 was evident in the company of fellow peers…appearing to be protective over another peer encouraging him to spend time in the lounge. (Nursing assistant)

Staff recorded inappropriate amusement at other patients' distress. This behaviour was recorded as:

> RAPID17 appeared to find a high level of inappropriate amusement of other people's distress on the ward. (Nursing assistant)

Staff observed the behaviours of patients contacting their family and friends and requesting them to be involved in their ward treatment because they were not satisfied with the ward management and the treatment they received. This observation was recorded as:

> Telephone call received from RAPID2's mum stating that patient was in pain and needed pain relief. She explained that patient had said that she wouldn't approach staff because they were blanking her. (Nursing staff)

Records of a patient repeatedly self-harming on the same site were only observed in the personality disorder group. This observation was recorded as:

> Staff…dressed the wound, but RAPID23 removed it. Staff re-dressed the wound. RAPID23 proceeded to again remove the dressing…[The] room…was covered in blood. She had removed the dressing again…Staff removed seven pieces of broken mirror, a snapped razor head, half a razor blade from her possession. (Nursing staff)

In the notes, staff observations of demanding staff attention and time were only recorded for the personality disorder group. A few other themes were only recorded in the personality disorder group, including 'once the discharge decision was made, patient leaving the ward without completing the discharge paperwork' (see Figure 6.3).

6.5.2 Personality Disorder Group Dominant Behaviours

Some of the behaviours (themes) were predominantly observed in the personality disorder group, although these behaviours were also observed in the MDD group and the exclusion group. Damage to property in the ward by patients was predominantly reported by staff for patients in the personality disorder group compared with the MDD group. These behaviours were recorded as:

> banging heard from bedroom, RAPID16 was observed to have broken his phone, described frustration with ex-partner. (Recorded by nursing staff for a patient with a personality disorder)

> Staff heard loud banging noises…RAPID35 was holding two chair legs after smashing a chair in his bedroom…Staff then heard banging again and RAPID35 had smashed a cup. (Recorded by nursing staff for a patient with MDD)

Aggressive behaviours (verbal, physical or passive) and hostility were observed mainly in the personality disorder group compared with the MDD group. Threats to harm self, others or property were observed across both diagnostic groups, although it appeared to be more common in the personality disorder group. Altercations with family and partners during the ward stay were mainly recorded for the personality disorder group compared with the MDD group.

Staff recorded behaviours of patients expressing unhappiness about other patients. This was again dominant in the personality disorder group. For example:

> RAPID8 appeared to be unable to tolerate behaviours of fellow unwell clients' behaviours. (Recorded by nursing staff for a patient with a personality disorder)

> later complaining about the noise on the ward and confronted another peer, telling him to get to bed. (Recorded by nursing staff for a patient with MDD)

Patients expressing unhappiness or derogatory comments about a staff member were mainly observed in the personality disorder group compared with the MDD group. The majority of patients with a diagnosis of personality disorder were unhappy with the ward care compared with the MDD group. This observation was recorded as:

> RAPID41 felt patronised and invalidated…at one point said that she found staff were confrontational and did not listen to her. (Recorded by a discharge facilitator for a patient with a personality disorder)

> RAPID12 was disgruntled over diagnosis: 'I was sick of people saying different things'. (Recorded by a discharge facilitator for a patient with MDD)

At discharge, the majority of the patients with a personality disorder expressed an unwillingness for discharge compared with the MDD group. Expressions of self-harm and self-harm attempts closer to discharge were again predominantly observed in the personality disorder group compared with the MDD group. For example:

> RAPID5 was reluctant to speak…regarding discharge planning…he said that if he was to be discharged now, he would immediately take another overdose. (Recorded by medical staff for a patient with a personality disorder)

> RAPID12 was aware of discharge planning…but was not very happy with it…as she felt things have not improved and did not feel any better. (Recorded by nursing staff for a patient with MDD)

Actual self-harm or attempts at self-harm by the patients during the ward stay were predominantly observed in the personality disorder group compared with the MDD group. Patients using illicit drugs or alcohol and commenting on their desire to use were mainly observed in the personality disorder group compared with the MDD group. Medication-seeking behaviours were predominantly observed in the personality disorder group, although this behaviour was also observed in two patients in the MDD group. These behaviours were observed as:

> RAPID15…felt fed up with not having medications to take during daytime. Medication-seeking throughout. (Recorded by medical staff for a patient with a personality disorder)

> Not happy that diazepam was stopped…She reported feeling agitated but objectively no evidence of this. (Recorded by nursing staff for a patient with MDD)

Observer-based behaviours in patients (e.g., conflict, altercations, disgruntled, rude, dismissive and abrupt behaviours towards staff by patients) were observed across both the personality disorder and the MDD groups but were predominant in the personality disorder group. Anger, irritability and anger management issues were also recorded by staff across both diagnoses but were dominant in the personality disorder group in our sample. For example:

> abrupt and rude in manner…interrupting conversation between staff and peers. (Recorded by a support worker for a patient with a personality disorder)

> RAPID18 appeared dismissive of nursing staff at times, rolling her eyes when repeating conversations. (Recorded by nursing staff for a patient with MDD)

Altercations with other patients were observed across both the personality disorder and MDD groups but were predominant in the personality disorder group. Altercations were triggered by either the patient themselves or by another patient. These behaviours were recorded as:

> verbal altercation between RAPID8 and another patient…advised…not to make threats towards other patients. (Recorded by nursing staff for a patient with a personality disorder)

> RAPID20 complained about the noise on the ward and confronted a peer, telling him to get to bed. (Recorded by a staff member for a patient with MDD)

Behaviours in which patients gave mixed and conflicting messages to staff and subjectively complained of symptoms (or distress) without observer-based (objective) evidence were observed across both the personality disorder and MDD groups but were predominantly seen in the personality disorder group. These were identified as manipulative behaviours and were described by staff as 'behavioural'. These behaviours were observed across both diagnostic groups but were more predominant in the personality disorder group. These observations were recorded as:

> RAPID9 presented as low in mood and tearful. This presentation was not consistent…e.g., when interacting with peers on the ward, his mood was observed to be much brighter, and he appeared to be interacting in a much more normal manner. (Recorded by medical staff for a patient with a personality disorder)

> Some conflicting statements. Asked what her plans would be if discharged: 'I would walk into the sea'…However, would like to work with mental health services on discharge, and was hopeful for psychological therapies, although felt 'nothing would ever work'. (Recorded by discharge facilitator for a patient with MDD)

Both the personality disorder and MDD groups expressed their anxieties about discharge from the ward, but this was predominant in the personality disorder group. Patients reporting that medications were not effective and refusing medications were mainly observed in the personality disorder group but also in the MDD group. In contrast, patients in the MDD group predominantly reported that the medications were beneficial. For example:

> RAPID13 stated that antipsychotic helped him to get rid of the voices. (Recorded by medical staff for a patient with a personality disorder)

> RAPID15 said that the medications were not working and no longer wanted to take it. (Recorded by medical staff for a patient with a personality disorder)

> RAPID11 had…three antidepressants…none of which had helped him. (Recorded by medical staff for a patient with MDD*)*

6.5.3 MDD Group Dominant Behaviours

Patients who reported an improvement and were keen (ready) for discharge were predominantly observed in the MDD group compared with the personality disorder group. Patients' family and friends noting an improvement in the patient was also predominantly

seen in the MDD group compared with the personality disorder group. These behaviours were observed as:

> both RAPID7 and her husband identified an improvement of mood in RAPID7. (Recorded by medical staff for a patient with MDD)

> RAPID17 stated that he wanted to go home and was happy with his discharge. (Recorded by community staff for a patient with a personality disorder)

Patients expressing their wish for discharge (because of factors such as unstable mental state, unhappiness about ward care or did not find hospital helpful) were observed across both groups but were dominant in the MDD group.

We also noted that a few codes/subthemes only appeared in the MDD group but not in the personality disorder group or exclusion group. For example, 'psychomotor retardation' was only recoded under the MDD group.

6.5.4 Other Behaviours

Some of the themes (behaviours) were observed across both the personality disorder and MDD groups, and it was difficult to identify the diagnostic groups to which those behaviours predominantly belonged. For example, patients expressing unhappiness about their respective families (and family members) were observed across both diagnostic groups.

Patients giving mixed messages about the ward stay or discharge (e.g., initially requesting discharge but later agreeing to stay) were observed in both the personality disorder and MDD groups. Patients feeling safe or unsafe in the ward were also observed across both groups. Patients in both the personality disorder and MDD groups were found with absence without leave (failed to return to the ward while on leave) and made attempts to leave the ward unofficially.

6.6 Main Results (Clinical Records)

The above summary results are described in more detail in this section. Themes are categorised under the same theoretical concepts applied: 'personality disorder only behaviours', 'personality disorder dominant behaviours', 'MDD group dominant behaviours' and 'other behaviours'.

6.7 Personality Disorder Only Behaviours

6.7.1 Theme: Overinvolved in the Care of Other Patients

Staff recorded as 'overinvolved in the care of other patients' to describe these behaviours (see Table 6.2). At times, staff found patients inside another patient's room, or vice versa, without staff permission. As per ward policy in the CNTW NHS Foundation Trust acute ward, patients were not allowed to stay in another patient's room, and patients were informed of this rule on admission.

Table 6.2: Personality disorder only behaviours: overinvolved in the care of other patients

Group	Recorded behaviours (codes)	Study ID
Personality disorder	'RAPID16 was evident in the company of fellow peers…appearing to be protective over another peer encouraging him to spent time in the lounge.'	RAPID16
	'On a number of occasions RAPID16 had been found to have other patients in his bedroom and had to be reminded that this was not acceptable.'	
Personality disorder	'Overinvolved with peer. RAPID21 gave her bank card to buy vodka, observed cuddling her.'	RAPID21
	'RAPID21 was observed entering another peer's bedroom. Staff explained she could not do this.'	
Personality disorder	'Staff were looking for another patient and found her in RAPID23's bed, sleeping next to each other. Staff awoke them both and asked other patient to return to her own bed which she did, and RAPID23 went back to sleep.'	RAPID23
Personality disorder	'RAPID59 approached nursing office, asking random questions about how he could get his friend sectioned as he wished to "trick people in getting him sections."'	RAPID59
Personality disorder	'RAPID58 expressed concern about the wellbeing of another patient, stating that she hadn't had much to eat and that she had reported an increase in voice hearing.'	RAPID58
Personality disorder	'Had become overinvolved in the care of another patient and despite reassurances appeared quite fixed on the issue. Demanding a "Charter of Care" which we are locating.'	RAPID23
	'RAPID23 became very involved in other patients' care demanding to know if doctor had been contacted, what medication etc.'	
	'RAPID23 had been overinvolved at times in the care of others, particularly another peer.'	

According to our findings, 'overinvolved in the care of other patients' was only observed in the personality disorder group. None of this behaviour was observed in the MDD group or the exclusion group. It can argue insufficient data available for the exclusion group because of the limited sample size (n = 9), but the minimum sample size proposed in qualitative data is five (see Section 2.7).

6.7.2 Theme: Inappropriate Amusement of Other Patients' Distress

Staff recorded inappropriate amusement of other patients' distress in the ward for two patients (see Table 6.3).

Table 6.3: Personality disorder only: inappropriate amusement of other patients' distress

Group	Recorded behaviours	Study ID
Personality disorder	'…sitting in dining area with a fellow patient, very vocal and waving hands about, singing loudly, and smelling strongly of alcohol, making fun out of another patient.'	RAPID2
Personality disorder	'…appeared to find a high level of inappropriate amusement of other people's distress on the ward.'	RAPID17

The above behaviour was observed in the personality disorder group but not in the MDD group. Insufficient data were possibly available for the exclusion group because of the limited sample size (n = 9).

6.7.3 Theme: Patient Seeking Family, Friends or Others in Their Ward Management

Staff observed patients contacting their family and friends and requesting them to be involved in ward management because they were not satisfied with the care (see Table 6.4). As a result, family and friends contacted the ward to explore the patients' issues.

Table 6.4: Personality disorder only: patient seeking family/friends in their ward management

Group	Recorded behaviours (codes)	Study ID
Personality disorder	'Telephone call received from RAPID2's mum stating that RAPID2 was in a pain and needed pain relief. She explained that RAPID2 had said that she wouldn't approach staff because they were blanking her, and that if she "made her mouth go" you got an "injection to shut you up."'	RAPID2
Personality disorder	'Today he had become upset and had sent his partner videos of him banging his head against the wall, stating that he would end up in prison. His partner had agreed and told him she wouldn't move to Scotland without him.'	RAPID17
Personality disorder	'RAPID23's friend informed staff that RAPID23 had stated that she was planning on ending her life. Staff offered reassurance to RAPID23's friend that staff were aware of her current situation.'	RAPID23
	Telephone call from police non-emergency services stating that RAPID23 had contacted them stating she had nowhere to live…'	
Personality disorder	'RAPID39 reported that things had continued to be awful for him. He had made himself sick…which he was angry about. Reported that his parents were also angry about this.'	RAPID39
Personality disorder	'Partner informed staff that she (patient) was anxious and agitated due to not being able to go off the ward. Advised that no one was stopping her from leaving. RAPID41 had contacted her partner whilst off the ward in a distressed state, crying. I spoke to RAPID41's partner when he contacted the ward…'	RAPID41
Personality disorder	'During the meeting RAPID44 was told that benzodiazepines wouldn't be an option while on the ward. He said that he was going to phone his family to pick him up from the ward saying there was no point in being on the ward.'	RAPID44
Personality disorder	'RAPID55's mother contacted the ward saying that RAPID55 had rang her very upset…'	RAPID55
Personality disorder	'He said that he was planning to kill himself tonight. He claimed to have not been observed frequently by staff. He reported that he would use "shoelaces" to do it. He said that he was going to BBC to inform that he was not properly treated.'	RAPID60

The above behaviour was only observed in the personality disorder group. Patients were not satisfied with their care in the ward and were requesting help from their family. Patients making routine contact with their family and friends for other reasons were not explored here.

6.7.4 Theme: Repeated Self-Harming on the Same Site

Records of patients repeatedly self-harming on the same site were explored, as summarised in Table 6.5.

Table 6.5: Personality disorder only behaviours: self-harming on the same site repeatedly

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID21 had removed her cast and bandage dressing from her left arm… (after dressing).'	RAPID21
Personality disorder	'…she had removed the dressing from leg area…'	RAPID23
	'…staff…dressed the wound, but RAPID23 had removed this. Staff re-dressed the wound. RAPID23 proceeded to again remove the dressing.'	
	'RAPID23's room…were covered in blood. She had removed the dressing…Staff removed seven pieces of broken mirror a snapped razor head half a razor blade from her possession.'	

This behaviour was only noted in the personality disorder group and was not observed in other groups. Some of the other personality disorder only behaviours were 'patient demanding staff attention and time' and 'once the discharge decision was made, patient leaving the ward without completing the discharge paperwork'. Those behaviours were presented as:

> RAPID45 was in dining area at start of shift, loud and demanding staff attention. (Recorded by staff for a patient with a personality disorder)

> RAPID60 left prior to discharge summary being printed and she declined to wait. (Recorded by staff for a patient with a personality disorder)

6.8 Personality Disorder Group Dominant Behaviours

Behaviours exhibited predominantly by the personality disorder group compared with the MDD group were explored. Examples of this behaviour were mostly found in the personality disorder group, although they were also observed to a lesser degree in the MDD group.

6.8.1 Theme: Damaging Property (in the Ward) With Aggression

Recordings of damaging property in the ward by patients were extracted. The findings are presented in Table 6.6.

Table 6.6: Personality disorder group dominant behaviours: damaging property with aggression

Group	Recorded behaviours	Study ID
Personality disorder	'…banging heard from bedroom, RAPID16 was observed to have broken his phone, described frustration with ex-partner.'	RAPID16
Personality disorder	'RAPID17 stormed away and began punching the walls and swearing about nursing staff. Support staff then found a broken coffee Table that had been smashed up.'	RAPID17
Personality disorder	'…always had problems with managing her emotions, particularly anger…this has been why she has damaged property etc.…'	RAPID21
Personality disorder	'RAPID39 had been seen to become aggressive on the ward…He threw one of the cleaner's signs across the corridor after staff tried to encourage him to have his supplement drink.'	RAPID39
Personality disorder	'…RAPID41's sister reported that RAPID41 wasn't talking to them and was almost "catatonic". I asked what RAPID41 had been doing since she went home, they reported that she went to her room and was smashing things around.'	RAPID41
Personality disorder	'He reported feeling angry for "ages" says this is a long-standing issue. He admitted to damaging property in his mum's house.'	RAPID46
	'Staff spoke with RAPID46's mum…him smashing her property and making threat to kill.'	
Personality disorder	'RAPID51 had…stated that she wanted to damage items of property within the family home…'	RAPID51
Personality disorder	'RAPID59 informed of his increase in observation status (intermittent) due to incident earlier on in the evening where he smashed his TV, as he stated that he had to "kill" whatever it was crawling on the floor.'	RAPID59
Personality disorder	'…angry that he was asked to wait until everyone had ate before getting second serving of pizza, slammed plate on the hatch.'	RAPID60
MDD	'Staff heard loud banging noises coming from patient RAPID35's bedroom…RAPID35 opened the bedroom door and was holding two chair legs after smashing a chair in his bedroom, he handed over the chair legs following some persuasion.' 'Staff then heard banging again and RAPID35 had smashed a cup, he handed over the majority of this, but staff had to request several times for the final piece of the cup, which he finally handed over.'	RAPID35
Exclusion	'He said that over the weekend, he became angry and smashed his mobile phone. He said that on another occasion, he kicked the door, injuring his ankle mildly.'	RAPID52

Damaging property was predominantly observed in the personality disorder group and was also noted in the exclusion group. Of 60 patients, it was only recorded in one MDD patient who had a diagnosis of psychotic depression.

6.8.2 Theme: Aggression (Verbal, Physical, Passive) and Hostility

Aggressive behaviours (verbal, physical or passive) and hostility were observed in the patient population (see Table 6.7).

Table 6.7: Personality disorder dominant behaviours; aggression and hostility

Group	Recorded behaviours	Study ID
Personality disorder	'…commented "do I have to kick off to show them I'm agitated"…'	RAPID8
	'…verbal altercation between RAPID8 and another patient in relation to a lighter, staff intervened…advising RAPID8 not to be verbally abusive and make threats to other patients.'	
Personality disorder	'RAPID15 then become hostile and rude to staff as he was requesting leave. He also went down to his bedroom and started kicking his door…speech - loud and aggressive, verbally.'	RAPID15
Personality disorder	'He was verbally abusive towards nursing staff…stormed away and began punching the walls and swearing about nursing staff.'	RAPID17
Personality disorder	'…became hostile toward staff saying we were refusing her pizza…presented as hostile and challenging throughout the evening stating that she was not getting the care that she needed.'	RAPID23
Personality disorder	'…when escorted leave was suggested he became angry and started punching walls and doors. RAPID39 was becoming increasingly agitated that he could not have leave off the ward, came into the main corridor appearing aggressive, punching and kicking the walls…he expressed his frustration by punching the wall…visible bruise to left hand…stating he was sick of being in hospital…heard hitting the walls', '…has been irritable with staff at times and refusing his ensure drinks saying, "do you know how many calories are in them", then proceeded to punch the walls…observed to have been punching and kicking fence due to frustration.'	RAPID39
	'…approached staff to request escorted leave in grounds, advised that this is not possible during nightshift…became increasingly agitated, punched noticeboard on ward, kicked ward door and went outside kicking the garden fence', '…gave him his Fortisip, which he did accept, however he threw this onto the floor of ward soon after…I asked him why he had thrown it on the floor earlier, he responded in a hostile tone "because I'm…sick of this…place"…'	
Personality disorder	'With regard to housing, it was suggested to him presenting at the council today, he then became verbally hostile, passive-aggressive, left the meeting room kicking the door.'	RAPID45
Personality disorder	'RAPID55 lost his temper shouting that another resident was making a mess and should not be in this ward…threw his black trainer across the room and started crying.'	RAPID55
Personality disorder	'…mischievous behaviour, pushing boundaries by banging on walls of nurse office and bouncing a tennis ball off walls in main ward, playing music loudly in communal areas.'	RAPID59
Personality disorder	'RAPID60 reported to staff that he felt anxious today…a few hours later kicked the office door and kicked the wall on the main ward.'	RAPID60

Group	Recorded behaviours	Study ID
MDD	'She appeared untidy and unclean. She was wearing clothing which she had worn the day before and overnight…supported RAPID33 to have a shower…whilst getting dry she became hostile, shouting and physically aggressive', 'RAPID23 then followed me on to the main bedroom corridor and continued to shout at me', 'RAPID33 became irritable…and shouted at staff member, then hit staff member across the face and again over the head.'	RAPID33
MDD	'…become more hostile when his needs were not being met.'	RAPID35
	'…continues to be observed to be agitated and hostile at times on the ward, abrupt in manner with staff, punching at the windows demanding to leave at times', '…became increasingly agitated and hostile towards members of nursing team, kicking ward doors, punching windows on the ward and demanding to leave the ward…became resistive and hostile…'	
Exclusion	'RAPID49then became really agitated shouting at us, saying that he had witnessed evil.'	RAPID49
	'…some hostility towards staff and abrupt tone…'	
	'RAPID49was asked by support worker politely not swear at others, when RAPID49 responded with "I'll do what I want you cunt", he was observed to up turn a chair and punch the wall in dining area…nursing staff observed him to have overturned some of his bedroom furniture…threatening in manner telling staff to "f… off", RAPID49 proceeded to come out of his bedroom into the bedroom corridor clenching his fists. RAPID49 then began pushing member of staff. He then transferred into de-escalation however he continued to make verbal threats to staff and was observed to sit clenching his fists.'	
	'I mentioned to RAPID49 that there were others on the ward and to be mindful of them. at this his mood changed, he pushed the plate across the table, got up, and walked to his bed area and started to bang items.'	
	'…banging heard from his bedroom, staff attended, was observed to repeatedly punch doors and walls and was also observed throwing himself against walls.'	
Exclusion	'RAPID31 was abrupt and hostile towards staff throughout the morning…'	RAPID31

Aggression (verbal, physical and passive) and hostility were observed in the personality disorder, MDD and exclusion groups, and appeared to be more common in the personality disorder group compared with the MDD group. In terms of the exclusion group, RAPID49 had comorbid autism spectrum disorder, which may have contributed to some of the behaviours.

6.8.3 Theme: Threats to Harm Self, Others or Property

Patients made verbal threats to harm self, others or property (see Table 6.8).

Table 6.8: Personality disorder group dominant: threats to harm self, others or damage property

Group	Recorded behaviours	Study ID
Personality disorder	'…made threats "I would be back in hospital tonight; I would take another overdose."'	RAPID5
	'…on discharge from the ward, RAPID5 was voicing thoughts to harm himself once he got home…and threatened "coming back."'	
Personality disorder	'He requested his night medication along with sleeping medication…stating that if it did not work, he would "kick off" and "smash the place up" to "get the needle to knock me out."'	RAPID8
Personality disorder	'He became more irritable stating "I would smash this place up". When said that police would be called, his reply was "I don't care". He then left the room saying, "I would stay for another 24 hrs."'	RAPID15
Personality disorder	'RAPID39 threw a chair across the main corridor and appeared agitated due to this.'	RAPID39
Personality disorder	'RAPID59 became frustrated…he continued to try and procure a lighter from staff making threats to wake up the ward. These threats were made in jest.'	RAPID59
Personality disorder	'A few hours later kicked the office door and kicked the wall on the main ward, reporting he was frustrated that no one had bothered with him, and asked to be discharged. I went into RAPID60's room to assess him, RAPID60 was lying on the bed with a blanket tied around his neck, he was purple in the face, and he released it straight away.'	RAPID60
MDD	'He reported…he would "smash the bedroom up"', '…continues to be observed to be agitated and hostile at times on the ward, abrupt in manner with staff, punching at the windows demanding to leave at times…making threats to harm self or staff if not given discharge or medication.'	RAPID35
Exclusion	'Returned to the ward but on return decided that he wanted to again take his leave, made threats to smash the doors if not let off the ward.'	RAPID32
Exclusion	'RAPID49 was taken into seclusion due to continuous threats of harm to others…'	RAPID49

Threats to harm self, others or property were observed across all three diagnostic groups, although it appeared to be more common in the personality disorder group. Only one patient in the MDD group made threats, and this patient notably had psychotic depression.

6.8.4 Theme: Altercations With Family or Partner

Altercations were recorded with either family members or partners during the ward stay (see Table 6.9).

Table 6.9: Personality disorder group dominant: altercations with family or partner during ward stay

Group	Recorded behaviours	Source
Personality disorder	'She attempted to assault her ex-partner, staff intervened…', '…currently she did not want any further contact with her partner and had blocked all methods of communication with him.'	RAPID21
Personality disorder	'RAPID39 was visibly tearful and upset stating that he became mad with his family, which he regretted.'	RAPID39
Personality disorder	'Telephone call from her sister and dad. Her sister reported that she was not talking to them…they reported that she went to her room and was smashing things around'	RAPID41
	'…felt as though her sister and father were "getting in her way" and she "blew" at them. RAPID41 stated that she felt as they automatically "freaked out" and stated that they could not handle her and "gave up", therefore they returned her to the ward.'	
Personality disorder	'RAPID44 reported feeling frustrated and let down by his family.'	RAPID44
MDD	'…reported increased arguments with husband at home in context of increased anxiety and agitation', '…husband has assaulted her by hitting her across the head…she stated that he had said, that she was antagonising him', 'Informed me that she was afraid of her husband at times when he became angry and swore at her. She stated that he "got on my nerves at times". She added that he was unable to cope with her illness and reacted to her in anger.'	RAPID33
Exclusion	'He reported that he had an argument with his ex-partner, which had made him become angry and abusive.'	RAPID32
Exclusion	'Call received from RAPID49's mother who was really tearful saying that RAPID49was being abusive over the phone.'	RAPID49
	'…telephone contact received today from mother stating she had been receiving multiple texts from RAPID49 which were of an abusive and threatening nature.'	
	'RAPID49was verbally aggressive towards mother. Mother was crying when she left ward…'	

Altercations with family and partners during the ward stay were mainly recorded in the personality disorder group compared with the MDD group. Only one patient from the MDD group exhibited this behaviour. Patients from the exclusion group also displayed similar behaviour.

6.8.5 Theme: Patient Was Unhappy About Other Patients

Recorded behaviours of patients expressing unhappiness about other patients were extracted. Their qualitative behaviours are summarised in Table 6.10.

Table 6.10: Personality disorder group dominant: patient was unhappy about other patients

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID8…disgruntled at clients leaving cups in sink again…RAPID8 appeared unable to tolerate behaviours of fellow unwell clients' behaviours', 'RAPID8 informed me that he was offended by the manner in which other patient spoke to both staff and other patients…'	RAPID8
Personality disorder	'RAPID16 expressed concern surrounding another peer. Unhappy about same peers' manner towards staff.'	RAPID16
Personality disorder	'RAPID17 was inpatient and got up in the second game stating he couldn't concentrate saying "he was like a f… Parrot" referring to a patient…'	RAPID17
Personality disorder	'RAPID39 managed to eat his supper…but later made a further complaint about another peer drinking out of the milk carton rather than from a cup stating, "he was disgusting."'	RAPID39
Personality disorder	'…she had found it hard to relax on the ward with the disruptions of other patients.'	RAPID41
Personality disorder	'RAPID55 lost his temper shouting that another resident was making a mess and should not be in this ward.'	RAPID55
Personality disorder	'…requested by staff to turn TV channel off as this was not appropriate, swearing and trying to blame a fellow patient who was asleep.'	RAPID59
MDD	'…later complaining about the noise on the ward and confronted another peer telling him to get to bed. He was quite angry calling him a "little dick" and that he was sick of him and his noise.'	RAPID20
Exclusion	'RAPID49 was heard to begin swearing at peers and was verbally hostile and derogatory in manner to peers sat with him.'	RAPID49

Personality disorder patients appeared to express unhappiness about other peers in the ward more often compared with the MDD group, although this behaviour was observed across all three diagnosis groups. It was only observed in one patient in the MDD group.

6.8.6 Theme: Patient Expressing Unhappiness About a Staff Member

Recorded behaviours of patients expressing unhappiness about a particular staff member were extracted (see Table 6.11).

Table 6.11: Personality disorder group dominant: unhappy about a staff member

Group	Recorded behaviours	Study ID
Personality disorder	'At first, she was dismissive and resilient, and I asked what was wrong and we talked about how RAPID2 was feeling annoyed because I was late for our appointment.'	RAPID2
Personality disorder	'…she became insulting towards myself saying she didn't want to talk to me as I didn't know what I was talking about that I was dumb…'	RAPID23
Personality disorder	'RAPID30 explained that…she had attempted to seek help from others however this had not been beneficial for her. She explained that her community psychiatry nurse was not particularly helpful and felt as though she did not fully understand her situation. Also, when contacting the crisis team RAPID30 explained that she felt as though she was given unrealistic responses such as utilising techniques like elastic bands and ice cubes.'	RAPID30
Personality disorder	'Disgruntled after a meeting with the consultant. He came out of the meeting room kicking the door and threw chairs around the ward before storming off to his room.'	RAPID39
Personality disorder	'Toward the end of the assessment RAPID41 called me a liar, "you were saying totally different things from other". Asked what I had said differently, she couldn't say.'	RAPID41
Personality disorder	'He told me that consultant had "blamed" his agitation on reducing his methadone. RAPID53 stated that this made him angry as he felt judged for being on a methadone script.'	RAPID53
	'RAPID53 told me about appointment with psychologist during the day. He said that he felt it wasn't "right" that she brought up my childhood when they were on about discharging me, "she had brought it all back up in my mind and I didn't feel ready to talk about these things."'	
Personality disorder	'He said that no one listens to him, no one understands him. He reported that he wanted to speak to night staff last night, "they took time" to see him. He claimed, "even today, if I didn't say I would discharge myself, I would not be seen by a doctor."'	RAPID60
	'Staff advised him to try a bit longer before using medication, but he became irritated and returned to his room. He felt that the staff member was unreasonable towards him.'	
MDD	'RAPID37 approached me this afternoon appeared upset. On interactions, RAPID37 stated that she was upset with a doctor and how she felt that the doctor was pressurising her to answer questions…RAPID37 also stated that she felt the doctor was not letting her explain the answers…RAPID37 stated that she did not want to see this doctor again as she felt intimidated by her.'	RAPID37

Patients making unhappiness or derogatory comments about a staff member was mainly observed in the personality disorder group compared with the MDD group. This behaviour was only observed in one patient in the MDD group. Insufficient data were possibly available for the exclusion group because of the limited sample size (n = 9).

6.8.7 Theme: Patient Expressing Unhappiness About Ward Care

Patients were unhappy about the care they received in the ward, as described in Table 6.12.

Table 6.12: Personality disorder group dominant: patients were unhappy about ward care

Group	Recorded behaviours	Study ID
Personality disorder	'I asked…which…staff were blanking her. RAPID2 stated she didn't know…RAPID2 stated there wasn't anyone she was just having a bad day and was feeling unsettled.'	RAPID2
Personality disorder	'He stated that he was "not good" and felt "pissed off" that he had been asking all day for medication and was not being given any…He commented "do I have to kick off to show them I'm agitated". RAPID8 stated he was stressed, and no one was helping.'	RAPID8
	'On speaking to RAPID8, he stated that he wished to leave as he had received no help and was still having these constant thoughts of killing himself. He continued to say what was the point of delaying it.'	
	'He said that nothing had helped since he came into the ward. He claimed that the medications were not helping him too.'	
Personality disorder	'…he has been rude and hostile with staff stating, "you all just sit on your arses all day doing nothing."'	RAPID15
	'…soon became more irritable requesting medication and stating staff were useless. RAPID15…had become frustrated around having to wait around the ward until a plan was put in place.'	
Personality disorder	'…became quite vocal at staff saying we were useless at our jobs; we were not interested in people's feelings…she seemed to be enjoying the dynamics of what was being said to staff.'	RAPID21
Personality disorder	'RAPID23 became hostile toward staff saying we were refusing her pizza as she all she wanted to do was order pizza, watch a film, and enjoy company of the other ladies.'	RAPID23
	'RAPID23 then started to say to staff that we didn't know our jobs and was telling staff about other patients care.'	
	'RAPID23 had presented…stating that she was not getting the care that she needed…'	
	'RAPID23 she was derogatory towards all the nursing team calling us all useless…'	
	'RAPID23 became focused on events of the previous evening where she felt nursing staff were not doing their job…'	
Personality disorder	'RAPID39 became verbally aggressive punching the walls stating that he was sick of being in hospital, made reference to other patients on the ward being loud.'	RAPID39
	'Irritable, verbally aggressive and unhappy that he not had escorted ground leave during day.'	

Group	Recorded behaviours	Study ID
	'Gave him Fortisip, which he did accept, however he threw this onto the floor…I asked him why he had thrown it on the floor…he responded in a hostile tone "because I'm f… sick of this f… place."'	
	'RAPID39...was disgruntled…in the TV lounge…reported it smelt like "an old people's home."'	
Personality disorder	'…she felt patronised and invalidated…at one point said she found staff confrontational and did not listen to her', '…not prepared to have Crisis home treatment team. Felt they didn't listen to her and she ended up in hospital…'	RAPID41
Personality disorder	'RAPID44 reported staff were "stingy" with medication…not giving extra medication…'	RAPID44
Personality disorder	'…he stated that the beverage bay was disgusting and "you got paid to keep things clean you were not doing the job your paid to do."'	RAPID45
Personality disorder	'He told me that he was angry and upset that his complaint had not been followed up, stating "they think that just giving me a different consultant makes it alright, but the managers hadn't bothered to speak to me about it any further."'	RAPID53
	'…does not feel ready to be discharged as no support had been put into place yet. Felt disappointed with mental health services who he felt fob him off. Concerns that his quetiapine had not reached a therapeutic dose and a discharge planning meeting had been arranged.'	
Personality disorder	'RAPID55 was not happy with intervention form staff asking him to check the items…'	RAPID55
	'RAPID55…very anxious and frustrated over what he saw as the lack of progress in his care.'	
Personality disorder	'He said that no one listen to him, no one understands him. He reported that he wanted to speak to staff last night but "took time to see" him. He claimed, "even today, if I didn't say, I would discharge myself, I wouldn't be seen by a doctor."'	RAPID60
	'…a few hours later, kicked the office door and kicked the wall on the main ward, reporting he was frustrated that no one had bothered with him, and asked to be discharged.'	
	'He said that staff had been discussing discharge but claimed he was not ready for it…He said that he hadn't been observed frequently by staff. He said that he is going to BBC and inform that he was not properly treated. He said that some staff good, some staff not.'	
MDD	'RAPID7 and her husband were…very upset and angry…in particular not going out for cigarettes when she wished.'	RAPID7
	'…thought she was being treated unfairly as she was unable to leave the ward for her cigarettes.'	
	'…visited by her husband who took RAPID7 off the ward off the hospital site. Failed to return as appropriate. Contacted via telephone and returned to the ward. Disgruntled as by this and her current leave. Expressing unhappiness…'	
MDD	'…felt community team "were to blame" for how bad she was…She was assessed in Feb and then again in June and "nothing was done", this could have stopped the admission. "I was promised all sorts, and nothing	RAPID12

Group	Recorded behaviours	Study ID
	was done". Disgruntled over diagnosis, RAPID12 was initially advised that she had moderate depression, more recently advised she had a mild depression, was "sick of people saying different things…"'	
Exclusion	'RAPID49 was asked by support worker politely not swear at others, when RAPID49 responded with "I'll do what I want you cunt."'	RAPID49
	'RAPID49was threatening in manner telling staff to "f… off."'	

Most of the patients with a personality disorder were unhappy with the care compared with the MDD group. Staff noted that RAPID60, with a diagnosis of personality disorder, showed splitting behaviours among the staff by commenting that 'some staff good, some staff not'.

6.8.8 Theme: Expressed Unwillingness (Unhappy) for Discharge

Patients expressed their unwillingness or unhappiness about being discharged from the ward (see Table 6.13).

Table 6.13: Personality disorder group dominant: patient expressing unwillingness for discharge from the ward

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID5 was reluctant to speak with me regarding discharge plans…He asked if he was going to be discharged today. I advised that I would assess for the possibility…At this point…he stated, "you can't discharge me because I had only been on an anti-depressant for one week…and my supported accommodation hadn't been sorted."'	RAPID5
	'He said that he had been on a "hunger strike" over the past few days and that he would stop taking his medication next. He said that if he was discharged now, he would immediately take another overdose when he got home and would not call an ambulance this time.'	
	'He refused discharge from hospital due to the state of his flat.'	
	'RAPID5 made threats "I would be back in hospital tonight; I would take another overdose". This was following advice that RAPID5 would be discharged today.'	
Personality disorder	'…he didn't feel ready for discharge as of yet…he was happy that staff were helping him to find new accommodation…'	RAPID8
Personality disorder	'Discussed his leave plan. He said that he was not ready to be discharged…'	RAPID15
Personality disorder	'RAPID16 stated that he could be discharged tomorrow but didn't know if this would happen because he was currently refusing all medications.'	RAPID16
	'Attempted to encourage overnight leave. RAPID16 declined overnight leave…(prior to discharge).'	
Personality disorder	'She was scared she would be discharged without warning suddenly and be left alone…unhappy about discharge from ward…Felt that her	RAPID22

Group	Recorded behaviours	Study ID
	problems were not sorted…Felt that she would overdose again once discharged.'	
Personality disorder	'I asked her if she was wanting discharged. She quickly changed and said, "no I didn't want to go anywhere; I had got nowhere to go."'	RAPID23
	'RAPID23 has been informed that she was discharged…she was unhappy about being discharged.'	
	'RAPID23 requested to leave the ward immediately. Staff encouraged RAPID23 to stay on the ward…to complete discharge paperwork, however this was declined.'	
Personality disorder	'RAPID30 expressed that she did not feel as though she could keep herself safe should she be discharged…'	RAPID30
Personality disorder	RAPID41 stated that staff did not understand how she was feeling. She felt that she was not ready to be discharged…as her leave "was a disaster."'	RAPID41
Personality disorder	'He said that we were planning to discharge him, but he was not ready. He said that if he was discharged today, he would be on streets, and would be back in the ward soon.'	RAPID45
	'RAPID45 continued to say that he needed to be in the ward, not ready for discharge.'	
Personality disorder	'He was explained about the discharge meeting tomorrow. At that point, RAPID53 said that he was not ready for discharge, and he needed to be stable…Did not feel ready to be discharged as no support had been put into place yet.'	RAPID53
	'…felt disappointed with mental health services who he felt fob him off…worried that discharge planning meeting had been arranged…things not in place in community…'	
Personality disorder	'RAPID55 sought reassurance that he would not be discharged today. He said that he was not ready for discharge saying that he wanted to stay longer in the ward.'	RAPID55
Personality disorder	'…staff had been discussing discharge but reported that he was not ready for it.'	RAPID60
	'RAPID60 was resistant to discharge from hospital and engaged very poorly…'	
	'RAPID60 left prior to discharge summary printed and declined to wait.'	
MDD	'RAPID12 was aware of discharge planning assessment…She didn't appear to be not very happy with regards this assessment as she felt as though things have not improved and she didn't feel any better.'	RAPID12
MDD	'Had discussed with staff that he does not wish to be discharged.'	RAPID35
MDD	'RAPID43 repeatedly stated he was not ready to be discharged and would have nothing to do if he went home.'	RAPID43
Exclusion	'RAPID38 reported that he didn't feel ready to go on leave or be discharged form hospital as he felt he was at risk to himself.'	RAPID38

Group	Recorded behaviours	Study ID
Exclusion	'He said that he was not ready for discharge. He claimed that if he was to be discharged now, he would take a bus and go somewhere to stay away from difficulties.'	RAPID52

It appeared that patients expressing an unwillingness for discharge was more common in the personality disorder group compared with the MDD group. This behaviour was also observed in the exclusion group.

6.8.9 Theme: Self-Harm Thoughts or Attempts When Planning Discharge

We explored self-harm expressions and behaviours closer to discharge (i.e., when discharge planning taking place) (see Table 6.14).

Table 6.14: Personality disorder group dominant: self-harm thoughts/attempts when planning discharge

Group	Recorded behaviours	Study ID
Personality disorder	'He asked if he was going to be discharged today, I advised that I would assess for the possibility of crisis team input for discharge today…RAPID5, at this point stated, "I would just take an overdose when I got home."'	RAPID5
	'He said that if he was discharged now, he would immediately take another overdose when he got home and would not call an ambulance this time.'	
Personality disorder	'Informed by nursing staff that RAPID8 reported this morning that he took an overdose of…mirtazapine and…promethazine tablets from his discharge medication.'	RAPID8
Personality disorder	'…thoughts around wishing to end her life should she return home. Willing to remain in hospital and accepted help.'	RAPID23
Personality disorder	'He requested some 1:1 time with me later in the evening where he was expressing thoughts to end his life by hanging and could not guarantee own safety on the ward. Explored why RAPID45 was feeling this way and it became apparent it was from anxiety of being discharged…Asked duty doctor to review RAPID45 given threats to harm self…'	RAPID45
Personality disorder	'RAPID60 was resistant to discharge from hospital and engaged very poorly, maintaining he would kill himself if discharged from the ward…'	RAPID60
	'When talking to RAPID60…he did not want to be discharged from the ward and that he might…kill himself…'	
	'RAPID60 attempted ligature again prior to discharge meeting. He hasn't progressed in contacting the council to discuss housing options. He said, "what's the point of contacting, I was going to kill myself".	

Group	Recorded behaviours	Study ID
Exclusion	'Appeared that RAPID28 had mentioned…that he had been reviewed by Discharge Facilitator with a plan of moving on. RAPID28 appeared unsettled by this and had stated that if he were to be discharged, he would likely to continue with his plan to take himself off into the forest…and possibly starve to death at some point. Although appeared vague over genuine suicidal ideation.'	RAPID28

Expressions of self-harm or self-harm attempts closer to discharge or around discharge planning were more common in the personality disorder group compared with the MDD group. Only one patient from the exclusion group with a diagnosis of dysthymia (RAPID28) exhibited this behaviour when discussing discharge.

6.8.10 Theme: Self-Harm in the Ward

Actual self-harm or self-harm attempts by patients during their inpatient stay (including patients being on leave [pass] from the ward) were observed (see Table 6.15).

Table 6.15: Personality disorder group dominant behaviour: actual self-harm in the ward

Group	Recorded behaviours	Study ID
Personality disorder	'…staff also caught RAPID8 in a shop buying a box of paracetamol which they removed.'	RAPID8
Personality disorder	'Superficial cuts to left shoulder were seen by staff. RAPID9 said that these had been done by friction against his radio.'	RAPID9
	'RAPID9 walked into the dining area of the ward repeatedly shouting "harm, harm, harm" continuously. He was…holding his arms out in front of him with a laceration on the underside of his left forearm…'	
	'RAPID9 was found to have made two small lacerations…done them with a CD.'	
Personality disorder	'RAPID17 was banging his head off the dining room table. There was a superficial graze on RAPID17's forehead…reported that it was out of frustration.'	RAPID17
Personality disorder	'RAPID21 spoke of scratching her arms when she felt angry. She added that the marks were shallow and "not deep"', '…banged her head off the wall "a few times", to the point of seeing blurry white patches', 'RAPID21 was found with a jumper tied around her neck which appeared to be tightened as staff entered the room.'	RAPID21
	'RAPID21 was brought to the A&E department by Police after being found with severe self-harm to her wrists', '…had self-harmed superficially to her right wrist and had caused two deep lacerations to her left wrist', '…had tied a ligature around her neck (lead of phone charger). This was removed with a fish knife', 'Shoelaces were wrapped loosely around her neck untied…ran out of her room into the garden, she then attempted to wrap drawstrings from her hoodie around	

Group	Recorded behaviours	Study ID
	her neck to use as a ligature…', '…was attempting to tie the aerial wire around her neck to use as a ligature', '…placed wire of the TV aerial around neck to use as ligature.'	
Personality disorder	'RAPID23…was found to have a…cut on her left ankle, denied any further injury but was also found to have a graze on her left shin…Staff removed seven pieces of broken mirror a snapped razor head half a razor blade from her possession.'	RAPID23
Personality disorder	'Disclosed that she had self-harmed (cut left forearm) a number of times.'	RAPID30
	'She stated that she had self-harmed this afternoon, while out on leave…she impulsively saw the glass and used it to self-harm.'	
Personality disorder	'…had self-harm thoughts the previous night and showed me superficial vertical scratches down her forearm that she had done following this…superficial cuts on her arm…'	RAPID41
Personality disorder	'…she had cut her forearms the previous evening. On examination, two superficial cuts to both forearms and one slightly deeper cut to right upper forearm.'	RAPID58
	'RAPID58 informed me that she had taken an overdose of 16 paracetamol tablets…'	
	'RAPID58 stated that she had taken about 160 paracetamol tablets over seven days.'	
	'RAPID58 was…at hospital being treated for a staggered paracetamol overdose.'	
Personality disorder	'RAPID59…attempted to harm self with glass from screen.'	RAPID59
Personality disorder	'He tried to ligature himself in the ward…tried to tight up his neck using clothes.'	RAPID60
	'RAPID60 was lying on the bed with a blanket tied around his neck. He was purple in the face, he released it straight away.'	
	'RAPID60 told staff to leave room. Staff observed that at that time he had telephone charger wire placed around his neck. RAPID60 looked at staff and proceeded to pull the wire.'	
MDD	'RAPID10 informed that she couldn't cope and that the "voices were really bad". This had caused her to cut her wrists. Cuts were superficial short scratches across both wrists.'	RAPID10
	'RAPID10 talked about her self-harm attempt when she was on home leave…had inflicted superficial scratches to her wrist.'	
MDD	'Staff were made aware that RAPID43 had taken…a mixed overdose…'	RAPID43
	'He was currently in Accident & Emergency department after taking a mixed overdose…'	
Exclusion	'…staff were alerted to RAPID19 cutting his right arm by another patient. Staff attended, superficial scratches to right forearm, no medical treatment required. Room searched; small piece of razor blade was found in bathroom…same removed.'	RAPID19

Actual self-harm or attempts made by patients were observed predominantly in the personality disorder group compared with the MDD group; however, this behaviour was observed across all three diagnosis groups.

6.8.11 Theme: Alcohol or Illicit Drug Use or Plans During Inpatient Care

Objective evidence was recorded of patients using alcohol or illicit drugs during their ward stay (including patients being on leave [pass] from the ward). At times, staff had suspected that patients were consuming alcohol or illicit drugs (see Table 6.16).

Table 6.16: Personality disorder group dominant: alcohol or illicit drug use or plans in the ward

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID2 returned from town leave, she had a bag of bought items…searching her bag…two cans of spirit/mixer were found. I relayed Trust policy and that alcohol was prohibited on the ward', 'RAPID2 was sitting in dining area…very vocal and waving hands about singing loudly smelling strongly of alcohol…'	RAPID2
Personality disorder	'RAPID5 contradicted himself by saying he no longer had a drug problem and later spoke about taking heroin…also buying street diazepam/ lorazepam…'	RAPID5
Personality disorder	'I noted a strong odour of cannabis coming from the car and observed RAPID8 to have one open can of cider in passenger door where he was seated, as well as three other cans of cider on floor in front of him. I pointed this out to them politely, none of them denied cannabis use.'	RAPID8
Personality disorder	'Reported having consumed two pints of lager whilst on leave. However, did not appear under the influence at present and denied any use of illicit substances.'	RAPID16
Personality disorder	'RAPID21informed me that she had ran off from staff to the pub. She then had some alcoholic drinks in the pub…She said that she felt quite "calm" but thought that was the alcohol she had consumed.'	RAPID21
	'RAPID21 explained that the leave had gone well until the last half an hour saying that RAPID21 had tried to take a bottle of vodka to bring back to the ward.'	
	'RAPID21 entered the family room and began pacing around on occasion banging her head on the wall stating she wanted alcohol. RAPID21 began telling me about her issues with alcohol and explained that she had been drinking heavily before coming into hospital.'	
Personality disorder	'RAPID23 was found to have three quarter bottles of vodka on her possessions and she was smelling of alcohol and her facial expressions were quite glazed.'	RAPID23
	'RAPID23 again tonight being challenging of the staff, had left the ward and returned with 3 x quarter bottles of vodka.'	

Group	Recorded behaviours	Study ID
Personality disorder	'…reported that if he had not returned to ward, he would have been likely to drink alcohol…could not guarantee his safety at home.'	RAPID32
Personality disorder	'He went on to ask if he could go off the ward for an hour so he could have a "bucket" (referring to cannabis)…'	RAPID45
Personality disorder	'…observed to appear possibly under influence of an unknown substance…'	RAPID46
	'…sedated in afternoon. This appeared to be following visit from friends, query using illicit substances.'	
Personality disorder	'…told staff if she had been at home, she would be drinking vodka.'	RAPID51
Personality disorder	'RAPID53 was currently…under the influence of substances. Explained that we tolerated a strict no alcohol or substances policy…'	RAPID53
	'Telephone call received from RAPID53's son who reported that he received information that whilst RAPID53 was out on leave…he "was taking drugs."'	
MDD	'RAPID35 was drinking…cider outside reception. It had appeared that RAPID35 had only drank one can of cider, had another in his hand which was full, which we emptied onto the grass.'	RAPID35
Exclusion	'RAPID32 informed staff that he had three cans of cider when on leave…'	RAPID32
	'…said that he had drank alcohol…following an argument with his mum…'	

Patients using illicit drugs or alcohol, staff suspicion of them using, and patients commenting on their desire to use were mainly observed in the personality disorder group compared with the MDD group. Only one patient from the MDD group exhibited this behaviour in our study. The exclusion group also showed these behaviours.

6.8.12 Theme: Demanding or Seeking Medications

Patients had been demanding and medication-seeking, and staff had been trying alternative methods prior to giving extra medications (see Table 6.17).

Table 6.17: Personality disorder group dominant: demanding or seeking medications

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID2 was asking for medications which she could take during daytime. She was explained…about developing benzodiazepine addiction issues.'	RAPID2
Personality disorder	'RAPID8 was asking for diazepam…I explained that his promethazine and mirtazapine were increased today, however RAPID8 was still requesting further diazepam.'	RAPID8

Group	Recorded behaviours	Study ID
Personality disorder	'…felt fed up with not having medications to take during daytime.'	RAPID15
	'medication-seeking throughout.'	
Personality disorder	'…seeking out as required medication for agitation with staff.'	RAPID16
	'RAPID16 later approached staff seeking as required medication.'	
	'…asking all staff for as required medication reporting that he was agitated, no objective signs of agitation', '…demanding as required medication.'	
Personality disorder	'RAPID17 approached the nursing office…demanded Diazepam. RAPID17 appeared to still be quite sedated and did not at all appear to be agitated. Staff attempted to explain that he had been asleep, and patients would not be woken to then be given a sedative. Staff attempted to discuss this further with RAPID17 to look into better options for his medication regime. However, he was verbally abusive towards nursing staff. RAPID17 stormed away and began punching the walls and swearing about nursing staff.'	RAPID17
Personality disorder	'RAPID23 was derogatory towards all the nursing team…she said that she thought she would get some help coming in here, but hasn't as she had not been given any medications…'	RAPID23
Personality disorder	'RAPID24 has approached staff on several occasions requesting as required medication but had been encouraged to use other coping strategies first.'	RAPID24
Personality disorder	'RAPID41 had been preoccupied with medication…She had come to the nursing office several times to request supportive medication. However, there were no objective signs of agitation.'	RAPID41
	'Preoccupied with medications.'	
Personality disorder	'He partly engaged in a discussion about the nature of antidepressant medication but made reference to the medication that he had at night that made him felt calmer straight away.'	RAPID44
	'RAPID44 was disgruntled about staff not giving him extra medication.'	
	'Disgruntled when staff would not give him extra Diazepam…no signs for need of this.'	
	'RAPID44 reported staff being "stingy" with medication due to not giving RAPID44 extra medication than he was prescribed.'	
	'During the meeting RAPID44 was told that benzodiazepines wouldn't be an option while on the ward. He said that he was going to phone his family to pick him up from the ward saying there was no point in being on the ward as he could take the medications, he was on at home if he couldn't use other as required medications.'	
Personality disorder	'Disgruntled regarding reduction in buprenorphine. Requested increase in medication.'	RAPID46
Personality disorder	'RAPID48 requested zopiclone…however this had been stopped for as required…RAPID48 was quite disgruntled that this had been stopped…RAPID48 reported that he had used this regularly and…he felt…needed it to sleep.'	RAPID48
Personality disorder	'He seemed very focused on obtaining medication to dampen down his distress and feelings…'	RAPID53

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID59 had been requesting as required medication. When asked why he felt that he needed them, he replied laughing "cos they were my pills", no evidence of any distress and none reported by patient, as indication was agitation, and none evident, same refused.'	RAPID59
Personality disorder	'RAPID60 stated that he had done this on impulse due to not getting hypnotic straight away.'	RAPID60
	'RAPID60 explained to me that he made a ligature because he had been refused zopiclone.'	
MDD	'Not happy that diazepam was stopped…She reported feeling agitated but objectively no evidence of this.'	RAPID42
MDD	'RAPID35 reported that he had done this as he wanted to go home or have some medication.'	RAPID35
	'Staff then heard banging again and RAPID35 had smashed a cup…saying that this was because he wanted medication. RAPID35 has since continued to bang his head on the wall, slam doors, and demand medication/discharge.'	
	'…made threats to harm self or staff if not given discharge or as required medication.'	
Exclusion	'RAPID38 stated he did not see the point of being in the ward if he was not being medicated. Same discussed about solutions being available without medication however he wished to be commenced on medication at tomorrow's daily review.'	RAPID38

Medication-seeking behaviours were predominantly observed in the personality disorder group, although this behaviour was also observed in two patients in the MDD group.

6.8.13 Theme: Disgruntled, Rude, Dismissive and Abrupt With Staff

Staff recorded behaviours including altercations with staff and conflicts between staff and patients, as well as disgruntled, rude, dismissive and abrupt behaviours towards staff (see Table 6.18).

Table 6.18: Personality disorder group dominant: disgruntled, rude, dismissing and abrupt with staff

Group	Recorded behaviours	Study ID
Personality disorder	'…angry that he was being discharged from hospital, dismissive of the care plan initially.'	RAPID5
Personality disorder	'He stated that he was "not good" and felt "pissed off"…'	RAPID8
	'On return to the ward he was disgruntled due to having been moved bedrooms.'	
Personality disorder	'…quite disgruntled that he had not heard anything regarding the electroconvulsive therapy…walked off quite disgruntled.'	RAPID9

Group	Recorded behaviours	Study ID
	'…received a phone bill…and was disgruntled that he has spent that amount.'	
	'…disgruntled for not informing him earlier about his discharge.'	
Personality disorder	'He shouted, "stupid bitch"…will approach later to complete 1:1 session', 'RAPID15 was at ward door at start of nightshift, shouting and swearing, demanding to leave the ward.'	RAPID15
Personality disorder	'…abrupt and rude in manner at times interrupting conversation between staff and peers.'	RAPID17
Personality disorder	'…became quite vocal at staff saying we were useless at our jobs…we were not interested in people's feelings', '…became argumentative tried to barge in room.'	RAPID21
Personality disorder	'…said to staff that we didn't know our jobs and was telling staff about other patients care.'	RAPID23
	'…appeared to be becoming aroused with the dynamics on the ward. Challenging in relation to caring and being sarcastic with replies.'	
	'…presented herself at door and again became hostile and patronising, staff requested that she move away as conversation was confidential, staff closed the door following this to which RAPID23 accused them of slamming door in her face.'	
	'She was derogatory towards all the nursing team calling us all useless.'	
	'She became insulting towards myself saying she didn't want to talk to me as I didn't know what I was talking about that I was dumb, I disengaged.'	
	'She again became argumentative around ordering take away meals staff.'	
	'RAPID23 again tonight being challenging of the staff, had left the ward and returned with 3 x quarter bottles of vodka', '…became disgruntled at this and told staff to "leave me alone."'	
Personality disorder	'RAPID39 had been disgruntled with staff this afternoon.'	RAPID39
	'…has been irritable with staff at times and refusing his ensure drinks saying, "do you know how many calories are in them"…then proceeded to punch the walls.'	
	'…appeared upset and disgruntled for periods due to not having staff to escort on leave etc…'	
	'RAPID39 was disgruntled this morning with another patient coming in the TV lounge…'	
	'…he became disgruntled and began slamming doors.'	
Personality disorder	'I suggested different activities…to which she was dismissive of…'	RAPID41
	'…suggested that she woke due to the noise level on the ward which she also instantly dismissed.'	
	'RAPID41 was unwilling to engage in any discussion and was dismissive.'	

Group	Recorded behaviours	Study ID
Personality disorder	'…appeared a little bit disgruntled.'	RAPID44
	'…disgruntled about staff not giving him extra medication.'	
	'…disgruntled when staff would not give him extra diazepam alongside his regular; no signs for need of this, reported staff being "stingy" with medication.'	
	'…was told that benzodiazepines wouldn't be an option while on the ward. RAPID44 then got up and left the meeting disgruntled at the advice of professionals.'	
Personality disorder	'He made demands for me to make his drinks, advised him he was capable of doing this. He stated that the beverage bay was disgusting and "you got paid to keep things clean you were not doing the job your paid to do". Disengaged from conversation as RAPID45 appeared to be attempting to evoke conflict between me and him.'	RAPID45
Personality disorder	'RAPID48 requested zopiclone…however this had been stopped…. RAPID48 quite disgruntled that this had been stopped and that he had not been informed.'	RAPID46
Personality disorder	'Remains disgruntled regarding not having seen consultant and has submitted formal complaint.'	RAPID53
Personality disorder	'RAPID54 requested leave…was abrupt with staff with no manners.' 'Spoke with RAPID54 regarding talking with staff when she was feeling low, RAPID54 disregarded this.'	RAPID54
Personality disorder	'RAPID59 stated that he liked being in hospital as it was "fun". He asked if I could give him a "chemical cosh", I disengaged from further conversation.'	RAPID59
Personality disorder	'…requested medication…as wanting to retire…not happy…'	RAPID60
	'I approached him to administer evening medication which he abruptly refused.'	
	'Staff attempted to discuss with him about sleep hygiene, RAPID60 told staff that they were talking rubbish…upon stating this he left office instructing staff to keep the "f… tablets"…walking away…'	
	'RAPID60 made reference to not being able to have his new antidepressant due to lack of availability in the morning and was disgruntled about this.'	
MDD	'…disgruntled around his sleep been disturbed when staff were doing checks…'	RAPID1
MDD	'…initially appeared low in mood and was disgruntled at another service user's behaviour on the ward.'	RAPID4
MDD	'…seemed disgruntled about certain medication and about her brother ringing her whilst in hospital', '…failed to return as appropriate…contacted via telephone and returned to the ward…disgruntled as by this and her current leave.'	RAPID7
	'…voicing distress over not being able to leave the ward', '…was disgruntled with leave plan.'	
	'She was disgruntled with her food disappearing. She thought the activity was hard so was disgruntled at times.'	

Group	Recorded behaviours	Study ID
MDD	'…presentation changed, she became abrupt with staff saying, "you meant my husband had to come and pick me up", RAPID10 disengaged with staff and had spent time in activity area not making eye contact, looking angry.'	RAPID10
MDD	'RAPID11 was accepting of short-term ward stay however disgruntled at same.'	RAPID11
MDD	'RAPID18 at times appearing dismissive of nursing staff, rolling her eyes when repeating conversations.'	RAPID18
MDD	'…accepted porridge but expressed feeling disgruntled…'	RAPID33
MDD	'…Tribunal held today, and section upheld…disgruntled by this.'	RAPID35
Exclusion	'He was disgruntled that Nicorette inhaler had not been taken to him from the afternoon shift', 'Mood - disgruntled and irritable with staff.'	RAPID28
Exclusion	'RAPID31 was abrupt and hostile towards staff throughout the morning not wanting to engage, however after lorazepam, she was more amenable and able to verbalise needs.'	RAPID31
	'Mood - mainly agitated and abrupt throughout the morning.'	
Exclusion	'On return to the ward RAPID32 was disgruntled about having to hand his cigarettes in, staff reiterated that this was ward policy. RAPID32 was dismissive of staff engagement following this.'	RAPID32
Exclusion	'…when an incident was happening with another patient on the ward RAPID24 was asked several times to leave corridor. RAPID24 was standing with another patient watching what was happening. Disgruntled by saying "I wasn't watching."'	RAPID24
Exclusion	'He enjoyed photography but was disgruntled that he did not have access to the internet on the ward so cannot pursue this.'	RAPID40
Exclusion	'Disgruntled that he has to be escorted on town leave.'	RAPID43
Exclusion	'RAPID49 was in activity room at start of shift. Some hostility towards staff and abrupt tone however he went to his bedroom.'	RAPID49

The above results showed that dismissive, rude, abrupt and disgruntled behaviours were shown by patients across all three diagnostic groups, but the codes/themes were more predominant for patients in the personality disorder group.

6.8.14 Theme: Record of Anger, Irritability and Anger Management Issues

Anger, irritability and anger management issues in patients (observed by the staff) were extracted (see Table 6.19).

Table 6.19: Personality disorder group dominant: irritability and anger

Group	Recorded behaviours	Study ID
Personality disorder	'…tremulous, anxious and angry that he was being discharged from hospital, dismissive of the care plan initially.'	RAPID5
Personality disorder	'He reported feeling anxious, low, on the edge, irritable and agitated, and objective evidence of those.'	RAPID15
	'…impulsive acts currently a risk as he became irritable at times.'	
Personality disorder	'…chronic anger management issues. Emotional instability.'	RAPID17
Personality disorder	'…always had problems with managing her emotions, particularly anger…'	RAPID21
Personality disorder	'…there had been periods in the ward where he had been challenging and irritable.'	RAPID39
	'When escorted leave was suggested, he became angry…', 'RAPID39 has been irritable when staff had been trying to engage him.'	
Personality disorder	'RAPID41 stated that she felt as they (her family) automatically "freaked out" and stated that they could not handle her, and "gave up" therefore they returned her to the ward.'	RAPID41
	'…is currently presenting with symptoms of low mood, anxiety, irritability and emotional instability', 'Objectively– initially relaxed, became more irritable toward the end.'	
	'RAPID41 expressed…that her irritability levels were increasing. She explained that things were beginning to "annoy" her…'	
Personality disorder	'…slightly irritable…resorting to punching walls and doors…'	RAPID44
Personality disorder	'RAPID55 lost his temper shouting that another resident was making a mess and should not be in this ward…', 'He described some of the content as hostile and angry…he frequently smirked as if in response to what he was hearing.'	RAPID55
Personality disorder	'…has shown some irritability towards others swearing at times.'	RAPID60
MDD	'RAPID3's mood has been prickly this morning.'	RAPID3
MDD	'RAPID7 became irritated.'	RAPID7
MDD	'RAPID10 disengaged with staff and has spent time in activity area not making eye contact looking angry.'	RAPID10
MDD	'Prior to treatment…suffered badly with impulsivity, anger outbursts and destruction of property/self-harming', 'He still remains angry at some family for generating rescue…'	RAPID10
MDD	'He presented as angry about his admission to hospital and the process that lead up to it.'	RAPID8
MDD	'RAPID33 became irritable repeatedly…'	RAPID33
MDD	'Some anxiety when talking about the intrusive thoughts, some anger when talking…'	RAPID40

Group	Recorded behaviours	Study ID
MDD	'…felt irritated and angry as the other patient had also been abusive towards staff…praise given for him managing these emotions.'	RAPID50
MDD	'RAPID42 became quite prickly with staff when they requested that, when staff were doing the observational check, if she was awake to put her hand up to alert staff, that she was awake.'	RAPID42
Exclusion	'She was irritable and often declined to repeat statements which I had not understood.'	RAPID31
	'Labile in mood, irritable but flat affect when describing behaviour towards mother.'	
Exclusion	'He described himself as a person become angry very fast. He said that he attempted to grab his mum from the neck due to the long-standing frustration and anger that she didn't save him.'	RAPID49
	'At times throughout the discussion, RAPID49 appeared angry, agitated and aggressive, stating that he would often think about physically harming or strangling others and described instances where he would punch walls to alleviate his anger.'	

Staff observed patients being irritable and angry, with anger management issues predominantly in the personality disorder group compared with the MDD and exclusion groups, although these findings were further recorded by staff across all three diagnosis groups.

6.8.15 Theme: Altercations With Other Patients

Staff observed altercations with other patients in the ward. Altercations were triggered by either the patient themselves or by other patients (see Table 6.20).

Table 6.20: Personality disorder dominant: altercations with other patients

Group	Recorded behaviours	Study ID
Personality disorder	'…had been getting frustrated with others when they had been unsettled at times, shouting at the other patients.'	RAPID8
	'…verbal altercation between RAPID8 and another patient…advised RAPID8 that he could not make threats towards other patients…he also said that they had been arguing about a lighter…'	
	'There was a brief altercation with another patient, the cause was unknown, but it resulted in a shouting match in which RAPID8 made several threats to the other patient.'	
Personality disorder	'…he became verbally abusive towards one of his peers…'	RAPID17
Personality disorder	'RAPID21 became disgruntle in regard to an incident on the ward, which was loud, she started banging on a peer's door to decrease the noise.'	RAPID21

Group	Recorded behaviours	Study ID
	'…she became disgruntled with other patients due to the noise on the ward, she had a verbal outburst regarding this…'	
Personality disorder	'…she could not sleep as the voices were coming to get her…appearing disgruntled as she had an altercation with another patient where she shouted at her.'	RAPID22
Personality disorder	'RAPID23 had a hold of fellow service user by the arms and was pulling her out of her bedroom.'	RAPID23
Personality disorder	'RAPID30 reported that…she felt intimidated by two patients. Informed RAPID30 that we would notify staff and speak with both parties.'	RAPID30
Personality disorder	'He was seen punching and headbutting the wall, slamming doors and engaged in aggression with another patient…'	RAPID39
	'RAPID39…became disgruntled because another client was sitting around the dining area been quite vocal and occasionally swearing…RAPID39 threw a pen across the Table and punched a wall in frustration and told the client not to swear at him…'	
	'RAPID39 entered quiet room where another patient was watching TV and became irritated by noise patient was making and asked him to "shut the f… up you stupid twat", he then turned the light on and banged the door shut a number of times and punched the wall', 'RAPID39 became irritable and overturned a chair in frustration as a peer had made a comment about his food which upset RAPID39…'	
Personality disorder	'RAPID54 had an altercation with another patient this evening, she asked her to go on a period of leave and the other patient became verbally hostile towards RAPID54 who left the ward tearful.'	RAPID54
MDD	'…he got up a short while later complaining about the noise on the ward and confronted a peer telling him to get to bed. He was quite angry calling him a "little dick" and that he was sick of him and his noise. He then shouted at another peer demanding he shut his room door and turn his light off as this was preventing him from sleeping.'	RAPID20
MDD	'RAPID35 had asked another patient if he could have a cigarette, the other patient said "no" and RAPID35 had kicked out at him. The other patient retaliated and kicked back.'	RAPID35
MDD	'…had an altercation with a fellow patient…RAPID50 said that if he stayed in the ward, he may end up with a fight with the fellow patient…'	RAPID50
	'He was involved in an altercation with another patient who began threatening toward RAPID50.'	
	'RAPID50 felt irritated and angry as the other patient had been abusive towards staff. He felt as he wanted to lash out toward this patient to protect staff and himself.'	
	'He told about his altercation with another patient during the day…'	
Exclusion	'RAPID49 was heard to begin swearing at peers and being verbally hostile and derogatory in manner to peers sat with him.'	RAPID49

Altercations with other patients were observed across all three diagnosis groups, but the codes/themes were more predominant in the personality disorder group.

6.8.16 Theme: Contradicting Messages/Behaviour (Conflicting Messages from the Patient)

Staff observed the behaviours of patients but contradicted what the patients were reporting and how they were behaving. This was recorded as patients giving conflicting or contradicting messages (see Table 6.21).

Table 6.21: Personality disorder dominant: staff contradicted what the patient was saying or how they were behaving (conflicting/contradicting messages)

Group	Recorded behaviours	Study ID
Personality disorder	'Several members of staff made mention of a variable presentation across different settings. They reported that in the context of a one-to-one interview with medical staff, RAPID9 presented as low in mood and tearful. This presentation was not consistent across the day. In other settings, for example; when interacting with peers on the ward, his mood was observed to be much brighter and he appeared to be interacting in a much more normal manner…his had created some doubt and splitting…'	RAPID9
Personality disorder	'Objectively, RAPID29's mood appeared euthymic, bright and reactive during conversations. Humour was evident at times. Subjectively, RAPID29 reported his mood as being "chaotic". He felt…anxiety was his most prominent concern…'	RAPID29
Personality disorder	'…stated that while she preferred to be at home, if she went home now, she would feel as she had before admission.'	RAPID30
	'Feeling conflicted…about wanting to be at home but anxious about how she would cope.'	
Personality disorder	'RAPID53 expressed that he was feeling agitated and requested as required medication. Objectively RAPID53 did not seem agitated and was advised to utilise coping techniques first…'	RAPID53
	'He reported shakes in his hands. Objectively didn't see those shakes during this interview…'	
	'RAPID53 proceeded to divert blame form his actions on to other disciplines; e.g. doctors, staff, NHS. However, once voiced, he requested supper and then ordered a takeaway.'	
Personality disorder	'RAPID54 had said repetitively that she had come into hospital to avoid criminal charges and avoid "going to jail". Patients had told her that she would still have to go to court. RAPID54 had said that she was hoping to "get herself sectioned" because then she would not face jail time.'	RAPID54
Personality disorder	'RAPID55's "obsessive-compulsive disorder" behaviour could be…inconsistent, as spending periods on cleaning beverage bay when staff were able to see him. When staff were not in communal area this behaviour had ceased…did not appear to be a rigid routine to the cleaning.'	RAPID55

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID60 spent the early part of the evening in the computer room with peers playing video games. He appeared bright and reactive and was engaging well. His demeanour changed when in the presence of staff becoming less expressive and quieter.'	RAPID60
MDD	'Some conflicting statements. Asked what her plans would be if discharged, "I would walk into the sea". Then stated that she would go, get some peanut butter. However, would like to work with services on discharge, was hopeful for psychological therapies, although felt "nothing would ever work."'	RAPID12
	'Initially stated that her dog was not a protective factor. Later discussed how she needed to walk her dog regularly, spoke fondly of her dog. Later revealed how she had no plans to collect her dog from the kennels as she did not know where the kennels were. RAPID12 visited the kennels with a friend this weekend.'	
MDD	'He had expressed that he was feeling low and distressed but had shown no objective evidence of this.'	RAPID43
	'RAPID43 had asked staff for extra medication reporting that he was anxious. However then also said that he had been playing Table tennis and managing to spend time in the company of others.'	
	'Throughout the conversation, RAPID43's account of his presentation was conflicting. He repeatedly said that he was not motivated, that he didn't feel any better, that he had no interests and felt fed up. I commented that I felt he seem to demonstrate some level of motivation to utilise his leaves, attend exercise therapy, OT department and ward-based activities. However, he stated that things weren't getting better, and he felt unable to have a conversation or concentrate. I again commented that I had observed him demonstrating these skills during activity however, he did not agree.'	
	'He stated that his mind was "completely blank" however later said his "head was full of thoughts" but could not elaborate on this.'	
MDD	'RAPID35 appeared flat in mood in the presence of staff but when observed to be in communal areas, RAPID35 was bright and reactive.'	RAPID35

Behaviours in which patients gave mixed or conflicting messages (there was no observer-based evidence as per staff records, even though patients were subjectively complaining) were observed across both the personality disorder and MDD groups. This qualitative behaviour failed to differentiate the personality disorder group from the MDD group.

6.8.17 Theme: Manipulative Behaviours

Staff records of patients' manipulative behaviours were extracted. Staff described this behaviour as 'behavioural' in their records (see Table 6.22).

Table 6.22: Personality disorder dominant: manipulative behaviours

Group	Recorded behaviours	Study ID
Personality disorder	'He was able to freely discuss…during the interview, with a degree of emotional indifference that could be perceived as "manipulating behaviour", "staying in control" and "wanting attention". The above perception was enhanced with him showing…insight… absence of psychomotor retardation, agitation and the counter transference of "being in control."'	RAPID9
	'Further complicating factor had been that Mr RAPID9's refusal to take all medications but to advocate for the use of electroconvulsive therapy. One interpretation of this was that his actions may be driven by personality factors rather than an acute mental illness.'	
	'…he had consistently refused oral antidepressants, as he claimed that they had not been effective for him and he considered them not to be effective. He had, however, consistently expressed that if he were offered electroconvulsive therapy and his mental state improved (mood lifted), he would be prepared to take oral psychotropic medication, which he had been rejecting…this looked like some manipulative demand…'	
Personality disorder	'RAPID60 stated that he had done this on impulse due to not getting hypnotic straight away.'	RAPID60
MDD	'Initially smiling and cooperative in assessment. But at the end, she was tearful and appeared to purposefully shaky. Initially relaxed and rapport established, open body language with good eye contact, by the end she refused to speak to me, no eye contact and played on her phone. Appeared to shake purposefully during the end of assessment, began biting her nails.'	RAPID41
MDD	'RAPID35's brother was upset and angry (as was his sister) that RAPID35 had developed traits the same as their father. Brother felt that this was mainly behavioural. He said that he felt that there was "no mental illness" and was confused as to why RAPID35 had been placed under the *Mental Health Act*.'	RAPID35
Exclusion	'RAPID24 was found on the floor by a peer who alerted staff. RAPID24 presented as though she has fainted and when woke by staff instantly stated that she had fainted. Whilst in the clinic RAPID24 appeared to faint again in the chair although it appeared as though this was more behavioural than an actual fainting episode.'	RAPID24
	'RAPID24 was clutching on to things as she was walking back, as appeared unsteady. She was observed walking with no problems to get her medication.'	

Manipulative behaviours, or what staff recorded as 'behavioural', were observed across all three diagnosis groups.

6.8.18 Theme: Patients Expressing Anxieties About Discharge

Staff records were explored regarding patients expressing anxieties about discharge from the ward (see Table 6.23).

Table 6.23: Personality disorder dominant: patients expressing anxieties about discharge

Group	Recorded behaviours	Study ID
Personality disorder	'…discussed RAPID5's dependency on services…and anxiety of being discharged from the ward.'	RAPID5
Personality disorder	'We discussed discharge and he acknowledged he had mixed feelings. He said that he felt he had to now face up to reality and the outside world after being protected from this while in hospital.'	RAPID9
Personality disorder	'…stated that he had some anxieties around going on leave…, and was concerned around possible discharge…', '…received a text message around his anxieties about discharge…'	RAPID13
Personality disorder	'She was scared she would be discharged without warning suddenly and be left alone.'	RAPID22
Personality disorder	'…continues to express anxieties about discharge and returning to the home address…'	RAPID29
	'I had approached the plans for potential discharge…RAPID29 felt this came as a shock…however accepted that he was well enough to be discharged. Expressing anxieties about discharge due to fear for what he may do in the community…'	
	'…continued to express anxieties about discharge…'	
Personality disorder	'…was very worried about being discharged home and being a risk to herself again.'	RAPID30
Personality disorder	'Explored why RAPID45 was feeling…and it became apparent it was from anxiety of being discharged with no support…'	RAPID45
Personality disorder	'RAPID48 was evidently anxious…about discharge…'	RAPID48
Personality disorder	'He told me that he was anxious about discharge planning meeting…'	RAPID53
	'RAPID53 had expressed thoughts about discharge to staff throughout the day, and his anxieties around this.'	
Personality disorder	'RAPID58…had taken an overdose of 16 paracetamol tablets…stated that she did not want to tell anyone as she was worried that she would have been discharged', 'She was clearly anxious at the prospect of leaving hospital…', '…she expressed concerns regarding discharge stating that she was scared…'	RAPID58
MDD	'RAPID7…told me that she planned to be discharged today. She seemed happy about this…but said she felt "frightened" which I said was understandable.'	RAPID7
MDD	'…stated that she was worried about going home, and felt it was too soon to be discharged…'	RAPID10

Group	Recorded behaviours	Study ID
	'She said that she was anxious regarding discharge but knew it had to happen.'	
	'We discussed discharge…Rapid10 reported feeling anxious and apprehensive about this…'	
MDD	'He seemed to be…anxious about his discharge as he reported that he had nowhere to stay.'	RAPID11
MDD	'RAPID12 said that she was worried if she got discharged…'	RAPID12
MDD	'He was anxious at times, but this was understandable given we were talking about transitioning home.'	RAPID26
MDD	'Feelings of anxiety around discharge and rebuilding her life again.'	RAPID42
MDD	'RAPID50 feels that he was ready for discharge now. However, he was aware that this may be anxiety provoking.'	RAPID50

Anxieties about discharge were expressed by patients in both the personality disorder group and the MDD group, but were more dominant in the personality disorder group.

6.8.19 Theme: Patients Felt Medications Were Not Helping/Not Beneficial

Patients reported that the medications were not helping or beneficial. This referred to either current or past medications (see Table 6.24).

Table 6.24: Personality disorder dominant: medications not helpful and beneficial

Group	Reported behaviours	Study ID
Personality disorder	'When asked about the medication, she stated that it was making her a "Zombie". When asked about benefits of medication, he couldn't find any.'	RAPID2
Personality disorder	'He said that he did not think the duloxetine was helping him at all. He said that…he would stop taking his medication next.'	RAPID5
Personality disorder	'RAPID8 stated that he felt zopiclone was no longer working', 'He also went on to say that the medication hadn't done anything', 'He stated that 'nothing had helped' since he came onto the ward. He claimed that the medications were not helping him too.'	RAPID8
Personality disorder	'RAPID9 described that the sertraline was not helping him…and that he would not take it today.'	RAPID9
Personality disorder	'He stated that Risperidone helped him to get rid of the voices…. He said that had been on Fluoxetine but stopped taking it as it caused weigh gain. He reported then having Sertraline but stopped taking them because he felt that it made him suicidal.'	RAPID13
Personality disorder	'…had been on fluoxetine for about 1 year…didn't work according to him. Then moved to Sertraline, had been on it for about 2 years…said that he stopped taking it…as he felt it was not helping…didn't want to continue sertraline. GP had started him on propranolol but felt as it didn't help', 'RAPID15 had refused his sertraline dose, saying "it was	RAPID15

Group	Reported behaviours	Study ID
	crap, I didn't want it", '…sought staff informing that he could not sleep feeling the medications were not working…', 'He claimed that the medications were not working and no longer wanted to take propranolol.'	
Personality disorder	'…reported that supportive medications were "not working" but was not able to identify why.'	RAPID16
Personality disorder	'Review of treatment showed that she had mainly been on venlafaxine, quetiapine, duloxetine, fluoxetine, diazepam, clonazepam. She did have a trial of lithium citrate but was stopped due to ineffectiveness; unstable mood continued, suicidal ideas and overdoses during that time.'	RAPID22
Personality disorder	'…said that she had tried citalopram, sertraline and olanzapine without big improvements.'	RAPID23
	'RAPID23 did not wish to continue with current medication as she felt that it did not help and had requested doctors to look at different antidepressant', '…became more animated when she talked about how she had no medication…was going to be started on fluoxetine and she didn't want it as "it didn't work". RAPID23 reported the plan with the alcohol tonight was to "self-medicate" as she has had no medication', 'She was on fluoxetine 40 mg/day, but she hadn't taken it for last one week and said that it was not helping…. wanted some other medicine.'	
Personality disorder	'Had been on some antidepressant medication…citalopram and fluoxetine and trazodone which hadn't helped…Sertraline for some time and said it had helped to an extent.'	RAPID30
Personality disorder	'Was started on citalopram but found not useful so stopped it', 'Also, on propranolol and sleeping tabs…Said "they didn't work"', 'Discussed medications, didn't want to re-start on citalopram but was happy to try some as required quetiapine for anxious irritable mood.'	RAPID41
	'…not happy with the medication that was currently prescribed…'	
Personality disorder	'Requesting extra hypnotic stating the medications he was taking were not 'touching' him…'	RAPID44
	'…he brought the conversation back once again to his need for stronger medication.'	
	'When asked to elaborate on why he felt suicidal he said, "it's my head and the medications were not working."'	
	'He was very focused on wanting a fast-acting medication to control symptoms and dismissed the advice that he needed to give the sertraline longer to reach a therapeutic level. It was explained that olanzapine was started to support with the symptoms…RAPID44 reported this wasn't enough and described wanting to feel "knocked out by medication."'	
Personality disorder	'She was currently on Mirtazapine 45 mg which she reported little efficacy from.'	RAPID51
Personality disorder	'RAPID53 felt that the quetiapine was "doing nothing" at the moment, still had "swinging moods". Wanted to know if there was anything, he could take through the day for this.'	RAPID53

Group	Reported behaviours	Study ID
Personality disorder	'RAPID55 did not wish to take prescribed medication and stated…not affecting him in other ways as side effects could.'	RAPID55
Personality disorder	'RAPID59 himself said that none of these medications helping. He said that he wanted a different medication…'	RAPID59
MDD	'In the last year, RAPID11 had presented to his GP and had trials of three antidepressants…none of which has helped him.'	RAPID11
MDD	'RAPID12 spoke of her concerns regarding medication and not feeling the lithium was helping and that she had a bad taste in her mouth.'	RAPID12
	'Felt medication wasn't making a difference in her mood.'	
MDD	'Followed treatment with fluoxetine, sertraline, citalopram, mirtazapine, venlafaxine, amitriptyline, olanzapine without remarkable improvement.'	RAPID14
MDD	'All medications were prescribed, other than fluoxetine which he did not find any benefit from.'	RAPID25
MDD	'RAPID37 felt current medication was no longer effective.'	RAPID37
MDD	'…had been on fluoxetine…but felt like it wasn't making a difference anymore.'	RAPID50
MDD	'On receiving his mediation, he stated, "medication wouldn't work for me."'	RAPID56
Exclusion	'He believed that his antidepressant was not helping and willing to have has medications reviewed.'	RAPID32
Exclusion	'RAPID38 stated citalopram had worked for him in the past however stopped taking this…due to no longer seeing the benefits.'	RAPID38
Exclusion	'She felt frustrated that the current medication did not appear to be working.'	RAPID47
Exclusion	'…said that he felt medication had worked for him for about two weeks and felt it didn't work then.'	RAPID52

Patients who felt that the medications were not working were reported across all three groups, but the code was more dominant in the personality disorder group.

6.8.20 Theme: Refusing Medications

The behaviours of patients refusing medications were extracted and are summarised in Table 6.25.

Table 6.25: Personality disorder dominant: refusing medications

Group	Reported behaviours	Study ID
Personality disorder	'…some behaviours around refusing medication. But then approached staff half an hour later saying, "check my blood pressure and then I would take my medication."'	RAPID5
	'RAPID5 initially refused his medication…just saying "I was not taking it" but then approached requesting his physical observations checked and that if his readings were okay, he would take his medication.'	
Personality disorder	'RAPID9 described that the sertraline was not helping him on the low dose of 50 mg and that he would not take it today.'	RAPID9
	'Continued to refuse any psychotropic medication but willing/keen to see psychologist for an assessment and to talk about his thoughts/ feelings.'	
	'RAPID9 refused his antidepressant medication this morning and had asked for a patient information about ECT [electroconvulsive therapy]. He stated that ECT may be a beneficial treatment plan for him as it is not medication orientated.'	
Personality disorder	'RAPID15 had refused his sertraline dose saying, "it was crap, I didn't want it."'	RAPID15
	'Continued to refuse regular prescribed medications.'	
	'He said that the medications were not working and no longer wanted to take Propranolol.'	
Personality disorder	'RAPID16 had refused his…medication. He was aware that he was due to be discharged…'	RAPID16
Personality disorder	'…Had been on some antidepressant medication like citalopram, fluoxetine and trazodone which hadn't help.'	RAPID30
Personality disorder	'RAPID55 did not wish to take prescribed medication and stated that he would be talking to the consultant in regard to other medication doing the same for him and not affecting him in other ways as side effects can.'	RAPID55
Personality disorder	'I approached him to administer evening medication which he abruptly refused.'	RAPID60
MDD	'RAPID3 politely declined his newly prescribed medication stating that he did not need tablets.'	RAPID3
MDD	'He had refused to take sertraline…over the last few days. He said that it had caused headaches…and no longer wanted to take it.'	RAPID20
Exclusion	'Retains insight about being depressed. Refused to take antidepressants.'	RAPID28
Exclusion	'He wanted to stop Sertraline. Discussed other medication options but he refused to have any. He claimed that he would be okay with as required medication.'	RAPID49

Refusal to take prescribed medications was observed across all three diagnosis groups, but was predominant in the personality disorder group.

6.9 MDD Group Dominant Behaviours

This section summarises the observed or commented behaviours (codes and subthemes) predominantly observed in the MDD group compared with the personality disorder group.

6.9.1 Theme: Patient Felt Ready, Keen, Improved for Discharge

Patients felt ready and improved for discharge and sought discharge from the staff. Objective evidence from staff records suggested that patients were ready for discharge (see Table 6.26).

Table 6.26: MDD group dominant: patient feels ready, keen and improved for discharge

Group	Reported behaviours	Study ID
Personality disorder	'RAPID48 had spoken with staff about discharge from the ward. RAPID48 stated that he didn't want to go on any further overnight leave. He just wished to be discharged.'	RAPID48
Personality disorder	'He stated that he wanted to go home and was happy with his discharge.'	RAPID17
MDD	'RAPID1 attended ward office stating he wished to discharge himself from ward. RAPID1 felt that he was…well enough to leave…'	RAPID1
MDD	'Telephone call to RAPID3 as agreed at discharge meeting. He stated that things were going well…RAPID3 was in agreement for discharge…'	RAPID3
MDD	'She explained that her home leave had went well and that she felt ready for her discharge meeting…RAPID6 explained that she felt ready to go home…'	RAPID6
	'RAPID6 expressed how she was aware that she would be discharged from hospital. I asked her thoughts around this. She informed me that she was "happy"…'	
MDD	'Thoughts where positive this evening after spending time today with her husband. Looking forward to discharge.'	RAPID7
	'She explained that she was looking forward to going on her leave tomorrow and that she felt as though she was ready to go home. RAPID7…was positive when discussing her discharge.'	
	'RAPID7…told me that she planned to be discharged today. She seemed happy about this…'	
MDD	'RAPID10 explained that she was hoping to be discharged…'	RAPID10
	'We discussed discharge…reported feeling anxious and apprehensive about this but accepted that she needed to be at home…and return to her life in the community. RAPID10…appeared willing to work with services on discharge.'	
MDD	'He acknowledged that no further assessment or inpatient treatment was necessary.'	RAPID11
MDD	'…mood: right and reactive looking forward to discharge.'	RAPID12

Group	Reported behaviours	Study ID
MDD	'RAPID20…appeared in good mood…He had requested his discharge…His partner was happy for RAPID20 to be discharged.'	RAPID20
	'He had voiced that he would like to leave hospital tomorrow as he was an informal patient and felt he was ready to go home.'	
MDD	'…expressed his wish to be discharged soon…RAPID25 went on to discuss his admission in hospital and stated that he would rather be at home…RAPID25…did not feel the environment was suitable for him to get better and that home treatment would be more helpful.'	RAPID25
MDD	'Forward planning around the future and what he was planning on doing once discharged. Continued to be positive about agreed leave care plan, was looking forward to discharge.'	RAPID26
	'RAPID26 was looking forward to a further period of leave leading up to discharge. Feels ready for discharge.'	
MDD	'RAPID34 spoke about wanting to go home. However, was easily reassured about seeking help.'	RAPID34
	'RAPID34 was keen to be discharged from hospital…Discussed further period of overnight leave to assess mental state prior to being discharged.'	
	'RAPID34 felt that he was keen for discharge…'	
MDD	'Felt ward environment was unhelpful and was hopeful for discharge…'	RAPID37
	'She spoke clearly and rationally about being hopeful for discharge…'	
MDD	'He said that his section had been revoked and was looking forward to having some home leave with a view to potential discharge.'	RAPID50
	'RAPID50 felt that he was ready for discharge…'	
MDD	'…told me that he felt he had made "some improvement" since admission.'	RAPID56
MDD	'RAPID57 enjoys time off the ward. Discussed feeling improvement since admission and hopeful for discharge soon.'	RAPID57
Exclusion	'Warm and reactive on contact. Believed his discharge would be imminent and he was happy with same.'	RAPID28
Exclusion	'Hopeful for discharge tomorrow.'	RAPID31
	'RAPID31 was aware of her meeting later today and was hoping for discharge…'	
	'…was keen to be discharged tomorrow as her leave had went well over the weekend.'	
Exclusion	'Met with RAPID19 and staff nurse to discuss with RAPID19 his discharge. RAPID19 agreed that he was ready for discharge and that there was no clinical reason for him to stay in hospital at present.'	RAPID19
Exclusion	'Both RAPID24 and partner felt that she was much improved, and both would like to go home today.'	RAPID24
Exclusion	'…stated she was looking forward to discharge. Felt that she had improved greatly since admission and felt she could manage at home.'	RAPID47

Group	Reported behaviours	Study ID
Exclusion	'He was agreeing for discharge.'	RAPID52
	'…he had socialised with staff and peers and had said that he was looking forward to being discharged to his friends' home.'	

Patients who reported feeling hopeful, ready, keen and improved for discharge were more predominant in the MDD group. Both patients with a dysthymia diagnosis in the exclusion group showed this behaviour (RAPID study IDs 28 and 31). Two patients in the personality disorder group also showed this behaviour.

6.9.2 Theme: Family Reporting an Improvement

Recordings were extracted and coded for family members reporting an improvement in the patient during the ward stay (see Table 6.27).

Table 6.27: MDD dominant: family reporting an improvement during ward stay

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID9's brother felt that RAPID9 had improved slightly.'	RAPID9
MDD	'…both RAPID7 and her husband identified an improvement of mood in RAPID7.'	RAPID7
MDD	'RAPID18's husband…continued concerns that RAPID18 was still unwell however suicidal thoughts, plans and intent had subsided.'	RAPID18
MDD	'Both RAPID26 and family felt he was better.'	RAPID26
MDD	'RAPID33 sounded bright and cheerful and reported she was doing fine, I spoke with RAPID33-husband with regards the same and he reported she was doing great.'	RAPID33
MDD	'Father reported that RAPID50 was better than before…'	RAPID50
MDD	'Family raised concerns that although they felt RAPID57 had improved, they didn't feel he was yet ready to return home…pointing out that his home was in a state of disarray and the water had been turned off due to a leak.'	RAPID57
Exclusion	'…spoke with RAPID47's sister. She reported that family had noticed a significant improvement in RAPID47's mental health and were keen to have her home.'	RAPID47

Family reporting an improvement in the patient was predominantly observed in the MDD group compared with the personality disorder group (only one patient was from the personality disorder group). This behaviour was also observed in the exclusion group.

6.9.3 Theme: Patient Requesting Discharge, Didn't Like the Ward (Not Keen to Stay in the Ward Longer)

Patients expressed their desire for discharge because of factors such as improved mental state, unhappiness about the care in the ward or they did not find the hospital environment helpful (see Table 6.28).

Table 6.28: MDD dominant: patient requesting discharge

Group	Reported behaviours	Study ID
Personality disorder	'…he stated that he wished to leave as he had received no help and was still having…constant thoughts of killing himself. He continued to say, "what's the point of delaying it."'	RAPID8
Personality disorder	'He said that he was wasting time by staying in the ward. He requested to be discharged.'	RAPID15
Personality disorder	'…refusing to come back to the ward. RAPID16 contacted the ward himself reporting that he was not going to come back on to the ward as wanted discharged. RAPID16 stated that he found the ward environment difficult and not helpful "I'm better off locked in my room at home."'	RAPID16
Personality disorder	'She then went on to say that she was "sick of being in hospital" as staff didn't let her do what she wanted which was to "end it". She expressed her wish to be discharged. Continued to voice self-harming thoughts', 'RAPID21 became frustrated and irritable pulling at her skin and disengaging from staff, repeating that she wanted to leave the ward.'	RAPID21
	'RAPID21 had expressed that she was "sick of being in hospital"…she stated just wanted to be discharged…'	
Personality disorder	'RAPID23 again tonight being challenging of the staff, had left the ward and returned with 3 x quarter bottles of vodka…RAPID23 requested her discharge.'	RAPID23
Personality disorder	'RAPID39 spoke about feeling worse on the ward than when admitted and felt that the environment was counterproductive. Speaking again about asking for discharge tomorrow.'	RAPID39
Personality disorder	'During the meeting RAPID44 was told that benzodiazepines wouldn't be an option while on the ward. He said that he was going to phone his family to pick him up from the ward saying there was no point in being on the ward as he could take the medications, he was on at home if he couldn't use other as required medications…. Had voiced wanting to leave today.'	RAPID44
MDD	'RAPID7 has voiced to staff that she did not want to stay on the ward.'	RAPID7
	'Minimal interactions with staff and others expressed she just wanted to go home.'	
	'RAPID7 said that she was keen for discharge tomorrow following her meeting but had concerns about her marriage.'	
MDD	'…only come on to ward for her needs to be met with by staff and has voiced to staff she wants to be discharged.'	RAPID10

Group	Reported behaviours	Study ID
	'RAPID10 attended her meeting this morning. Continued to voice feeling unsafe as well as feeling anxious, voicing she did think she is ready to go home.'	
	'She told me that her most recent leave had been difficult at times, which made her feel anxious to take further leave, but that she strongly wanted to get home.'	
MDD	'RAPID11 told staff that he wanted to leave hospital to be able to get on with his life.'	RAPID11
	'RAPID11 had expressed a wish to leave hospital and had informed staff that he felt his family was responsible for his admission and detention.'	
MDD	'…mood low and expressed she wanted to go home…'	RAPID12
	'She continued to speak intermittently stating that she felt worse in hospital and didn't think it was helping…Felt admission was no benefit to her. Hoped to be discharged…'	
MDD	'RAPID18 and her husband returned to the ward for her discharge meeting. There were continuing concerns that RAPID18 was still unwell however suicidal thoughts…RAPID18 didn't feel she needed to be in hospital…'	RAPID18
MDD	'He was visibly shaken by the level of aggression on the ward…He had requested early discharge…his mum was also concerned and felt it was currently not helpful for him to be on the ward.'	RAPID25
MDD	'RAPID31 appeared…dishevelled. Speech was difficult to comprehend…RAPID31 was requesting to be discharged…stated that she would stop taking her medications if she was not discharged.'	RAPID31
MDD	'…expressed belief that she would never get better…Stated that she just wanted to go home and be with her husband.'	RAPID33
MDD	'RAPID35 wanted to leave the hospital…He was at risk of self-harm.'	RAPID35
	'RAPID35 had since continued to bang his head on the wall, slam doors, and demanded medication or discharge.'	
MDD	'Requested early discharge…as she did not feel comfortable in the ward environment.'	RAPID37
MDD	'She…reported that she didn't like being on the ward as she was struggling to sleep. RAPID42 said that she didn't want to be in hospital…'	RAPID42
MDD	'RAPID50…requested his discharge. He had an altercation with a fellow patient…'	RAPID50
MDD	'At interview, he believed that he was the "devil". He felt that staff and patients here were replaced by imposters. He said that he wanted to leave the ward. Said that he didn't feel safe in the ward.'	RAPID56
Exclusion	'RAPID32's mum reported that he walked out of house stating that he was planning on killing himself…he requested that he would like to be discharged from the ward.'	RAPID32
Exclusion	'RAPID49 believed that he didn't need to be in hospital. He said that he wanted discharge as he found it difficult in the ward.'	RAPID49

Group	Reported behaviours	Study ID
	'RAPID49 stated that he didn't feel hospital admission was doing him any good and that he would be must better at home.'	

The above behaviour was observed across all three diagnosis groups but was predominant in the MDD group. Some of the requests appeared to be driven by the ward environment, and some were driven by the patients' poor mental state.

6.9.4 Theme: Patient Felt Medications Helping and Beneficial

Patients reported that their medications had worked or were beneficial, either in the past or currently (see Table 6.29).

Table 6.29: MDD dominant: medications helpful/beneficial

Group	Recorded behaviours	Study ID
Personality disorder	'When I stated…sleep, she then said that it had helped her with sleep (nursing observations reported that her sleep was fine).'	RAPID2
Personality disorder	'He noted a reduction in voice hearing and paranoia after being on quetiapine. He reported…feeling less anxious…less voice hearing experiences.'	RAPID13
	'He stated that risperidone helped him to get rid of the voices….'	
Personality disorder	'…had asked for an increase of his dose of quetiapine because he was feeling the benefit from it.'	RAPID53
Personality disorder	'On Sertraline for some time…said it helped to an extent.'	RAPID30
MDD	'RAPID1 stated that he was "happy" with his current medication and felt…it was working "a lot better". RAPID1 also noted an improvement in mood…'	RAPID1
MDD	'…felt the olanzapine was working well…'	RAPID4
MDD	'…was happy that her medication had been changed and she felt that with this she may improve and be able to go home.'	RAPID6
	'…she felt that she had done the right thing in coming into hospital as she had been stabilised on her medication and felt as though she had benefited from this.'	
MDD	'He claimed that he preferred to go back to fluoxetine as it hasn't caused much side effects.'	RAPID20
MDD	'He reported that his sleep was "okay" with Amitriptyline, saying it had helped with sleep…'	RAPID26
MDD	'RAPID40 did report feeling slight improvement in his racing thoughts from current medication.'	RAPID40
MDD	'Reported that promethazine last night was beneficial, agreed to follow same use of as required this evening.'	RAPID50

Group	Recorded behaviours	Study ID
	'…said that he would stay away from diazepam. He reported sleeping better with medications…'	
MDD	'Accepted his evening medications…told me that he felt he had made "some improvement" since admission.'	RAPID56
MDD	'Reported feeling 'better' since being back on his medications.'	RAPID57
Exclusion	'RAPID38 stated that citalopram had worked for him in the past…'	RAPID38
Exclusion	'RAPID47 felt that her medication was working well…felt that it was much better, and she felt as she had more energy.'	RAPID47
	'RAPID47 felt that her medication was now helping…allowing her to be felt better able to manage her anxiety.'	
Exclusion	'He found promethazine helping.'	RAPID52

Patients across all three groups felt that their medications (current or past) were beneficial, but this code was dominant in the MDD group.

6.10 Other Behaviours

We had difficulty differentiating the group to which some of the codes/themes predominantly belonged because those behaviours were observed across all three diagnostic groups.

6.10.1 Theme: Patient Expressing Unhappiness About Family While an Inpatient

Patients expressed unhappiness about their family (see Table 6.30). This code was different to earlier codes we used, such as 'altercation with family' or 'patient reporting relationships issues with other family members'.

Table 6.30: Theme: patient expressing unhappiness about their family

Group	Recorded behaviours	Study ID
Personality disorder	'He said that he had been living with him mum but faced with constant arguments between his mum and dad. He reported having one sister but didn't get on with her either.'	RAPID46
MDD	'RAPID40 had been angry with the partner about the distress to son.'	RAPID40
MDD	'RAPID50 blaming dad for a lot of things…RAPID50 said that he "didn't see the point in being here, as they are doing nothing."'	RAPID50
MDD	'He felt bullied from his brother since the death of his mother.'	RAPID56
Exclusion	'RAPID38 also reported "I hate my dad". I asked why this was…RAPID38 stated "he did things that annoyed me" and gave insignificant incidents.'	RAPID38
	'RAPID38 made comment to wanting to go and smash his ex-partner's face due to not receiving pictures of his daughter.'	
Exclusion	'He said that he hated his parents and wanted to move out.'	RAPID49

Patients expressing unhappiness about their family were observed in all three diagnosis groups.

6.10.2 Theme: Attempted to Leave the Ward or Absence Without Leave

Reports were extracted of patients attempting to leave or leaving without staff permission (see Table 6.31).

Table 6.31: Theme: attempted to leave the ward or absence without leave

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID9 was trying to leave the ward and was trying to open the doors despite several attempts by stiff to calm him down and prompting him to stay on the ward.'	RAPID9
Personality disorder	'RAPID15 became hostile and rude to staff as he was requesting leave. He sat at the ward doors trying to get out when others were coming in and out of the ward.'	RAPID15
Personality disorder	'RAPID21 left my appointment…abruptly and ran away when she became irritated and overwhelmed by distressing emotions. Team found RAPID21 and escorted back to the ward.'	RAPID21
	'Absence without leave incident…She had absconded whilst on escorted leave, and had cut her wrists at a local pub, before being found in a garden.'	
MDD	'Police officer…stated that RAPID1 had gone to local town and knocked on someone's door asking for help. They had contacted the Police…RAPID1 had remained isolated to his bed since arriving back from absence without leave.'	RAPID1
MDD	'RAPID11 arrived on the ward…accompanied by two police officers and in cuffs after going absence without leave.'	RAPID11
MDD	'Met with RAPID35's brother. He reported that RAPID35 had wandered off and been missing for around an hour…'	RAPID35
	'He was frustrated that he had been placed on a section, repeatedly asking to leave the ward stating he had a right to leave and that there was nothing wrong with him. At one point he was standing in the airlock pushing the door trying to get out.'	

Patients had attempted to leave the ward or were found absent without leave (passes) in all three groups.

The codes 'happy/wishes to be in the hospital', 'patient agrees to stay in the hospital', 'patient feels safe in the ward' and 'patient feels unsafe in the ward' were observed across all three diagnostic groups; therefore, it was difficult to categorise this theme into a dominant diagnostic group.

6.10.3 Theme: Patient Reported Feeling Unsafe in the Ward

Patients reported feeling unsafe in the ward for a variety of reasons, including noise level and disruptions in the ward (see Table 6.32).

Table 6.32: Theme: patient felt unsafe in the ward

Group	Recorded behaviours	Study ID
Personality disorder	'…during incident on the ward, RAPID5 expressed concern of feeling frightened on the ward due to certain peers.'	RAPID5
Personality disorder	'RAPID36 came back into the room and expressed that although she was "absolutely terrified" of being on the ward she would remain here until…review as she was keen for things to start moving forward.'	RAPID36
Personality disorder	'…felt unsafe around other patients and annoyed about other patients…'	RAPID39
	'RAPID39 told me that he felt "unsafe" on the ward, as another patient had come into his room.'	
MDD	'RAPID10…continued to voice feeling unsafe as well as feeling anxious. Voicing she did think she was ready to go home.'	RAPID10
MDD	'He reported hearing voices and felt people in the ward were "plotting against" him. Said that he didn't feel safe in the ward.'	RAPID56

Feeling unsafe in the ward was observed in both the personality disorder and MDD groups.

6.10.4 Theme: Patient Felt Safe in the Ward

Recordings of patients voicing 'feeling safe' on the ward were extracted (see Table 6.33).

Table 6.33: Theme: patient felt safe on the ward

Group	Recorded behaviours	Study ID
Personality disorder	'Complex engagement with services. Felt safe on the ward but was refusing antidepressants and threatening to commit suicide if made an informal patient.'	RAPID9
Personality disorder	'Continued to cite ex-relationship stressors and…sources of distress. Stated feeling safe when on the ward.'	RAPID16
Personality disorder	'Denied suicidal ideation currently and felt safe at the ward. Had been thinking a lot about hanging himself as felt unable to cope with level of stress.'	RAPID17
Personality disorder	'Risk of impulsivity and suicide remain however, RAPID36 had stated that she felt safe on the ward which reduced this risk.'	RAPID36
MDD	'RAPID10 talked positively about the help and support she was receiving both in hospital and in the community…told me she struggled to feel safe but felt safe when she was in hospital.'	RAPID10
MDD	'Said the overdose was an impulsive act…Felt safe on the ward where she didn't have access to means for self-harm.'	RAPID14

Group	Recorded behaviours	Study ID
	'She commented that she felt supported and safe on the ward…felt this was due to being "surrounded by people" and reduced anxiety around "life" outside hospital.'	
MDD	'…he contacted his key worker and was relieved to be in hospital. He felt safe in hospital and told me that he would seek out staff if he felt suicidal…Stated did not feel comfortable with overnight leave and felt safer on ward.'	RAPID20
MDD	'RAPID42 was able to express that although many things still got her very anxious, she felt "safe" on the ward…'	RAPID42
MDD	'…stated that being in hospital would help with his recovery. He felt safe with in the setting of the hospital when he was unwell…'	RAPID56
Exclusion	'He felt "safe" on the ward and was happy to remain here…'	RAPID28
Exclusion	'I asked if he felt able to keep himself safe on the ward. He stated he did, and this was why he returned from leave.'	RAPID32
Exclusion	'Suicidal fleeting thoughts were present but feels safe knowing staff were on ward to approach if he felt stressed. Reported feeling low but safer now he was on the ward.'	RAPID19

Feeling safe on the ward was observed across all three diagnostic groups.

6.10.5 Theme: Initially Requesting Discharge But Then Agreed to Stay or Mixed Messages on Ward Stay

Patients gave staff mixed messages about staying on the ward. For example, they wanted to leave at times and then changed their mind and agreed to stay (see Table 6.34).

Table 6.34: Theme: mixed messages of ward stay

Group	Recorded behaviours	Study ID
Personality disorder	'RAPID8 was…seeking discharge, reporting ongoing "chronic suicidal ideation"…He stated that he might…stay for meeting but was not sure. He then left the room and went straight to his bedroom.'	RAPID8
Personality disorder	'RAPID9 stated that he wished he had not agreed to hospital admission as then he could have done what he wanted to.'	RAPID9
Personality disorder	'…became upset and verbally hostile towards doctor and staff when needs where not met. Requested his discharge and was seen by doctor at which he agreed to stay.'	RAPID15
Personality disorder	'RAPID16 contacted the ward himself reporting that he was not going to come back on to the ward as wanted discharged. RAPID16 expressed wanting to leave and be discharged…RAPID16 stated finding the ward environment difficult currently and not helpful…However, after speaking with staff, he agreed to return and changed his mind and wanted to remain on the ward…'	RAPID16

Group	Recorded behaviours	Study ID
Personality disorder	'Contacted by ward staff to attend as RAPID23 wanted to be discharged. Staff informed that she went on leave and returned to ward with three bottles of vodka…Not happy and wanted to be discharged. Agreed to stay overnight and to speak with ward doctors and pharmacist…'	RAPID23
	'RAPID23 was then requesting to leave hospital. However easily encouraged to stay until she spoke to consultant tomorrow.'	
Personality disorder	'…stated…while she would prefer to be at home, if she went home now, she would feel as she had been before admission. Feeling conflicted…wanting to be home but anxious about how she would cope.'	RAPID30
Personality disorder	'Finding noise level on the ward difficult, unsure as to whether she wished to leave hospital.'	RAPID30
Personality disorder	'He said that he was going to phone his family to pick him up from the ward saying there is no point in being on the ward…RAPID44 then got up and left the meeting disgruntled at the advice of professionals (stayed in the ward).'	RAPID44
Personality disorder	'Stated that he could easily "climb the fences and escape here". Informed that he was informal therefore he would not need to do this and if he wished to be discharged then I could contact the doctor. RAPID45 stated "no, I couldn't cope out of here, there's nothing for me out there."'	RAPID45
Personality disorder	'RAPID58 then proceeded to talk about discharge. I made her aware that she was informal and that she could leave at any time. She said that she didn't want to go tonight…'	RAPID58
Personality disorder	'He initially said that he wanted to discharge himself but then said that he would continue to stay in the ward.'	RAPID60
	'…reported that he was frustrated that no one had bothered with him and asked to be discharged. (Later)…talking to doctor, RAPID60 agreed to stay on the ward informally.'	
	'He asked for his discharge from the ward. Discussed discharge against medical advice option. He then said that he would stay in the ward…'	
MDD	'Discussed with him why he wanted to leave. Replied that he just wanted to go for fresh air, not to be totally discharged.'	RAPID1
MDD	'RAPID3 was voicing his frustrations at being admitted to the ward however made no attempt to leave the ward.'	RAPID3
MDD	'…she had expressed her wishes to leave the ward and she was…informal. After discussion, she agreed to stay informally…'	RAPID7
	'She has requested her discharge. However, stated that she knew she needed to be in hospital and was willing to accept any help and support…Felt the environment wasn't helpful.'	
MDD	'RAPID12 had been tearful at times, stating that she wanted to go home. She was agreeable to staying in hospital when discussed.'	RAPID12
	'…some conflicting statements, anxious of being discharged to a community team in case she was re-admitted into hospital and detained…'	

Group	Recorded behaviours	Study ID
MDD	'He was considering appealing against his section. However, thought there might be something "of benefit" to him from being in hospital, hence had not yet done it.'	RAPID28
	'Wanted to get a plan…for discharge but felt, if he was discharged today, he would still hand his notice in and went to live like a hermit.'	
MDD	'RAPID42 said that she didn't want to be in hospital but also didn't want to be at home, as she felt she would spend much time alone.'	RAPID42

Patients initially requesting discharge but later agreeing to stay was observed in both the personality disorder and MDD groups.

6.11 Word Cloud (Clinical Records)

Word Clouds (content clouds) are a type of visualisation that is created using the content analysis method of qualitative research (see Sections 6.1 and 6.3 for further information on the qualitative analysis methods used). In our study, Word Clouds were used to illustrate the multidisciplinary staff members' written comments in the clinical records by summarising the contents of a document. The words that appeared most frequently in the documents appear larger within the cloud (see Figures 6.4–6.6).

6.11.1 Methods (Word Cloud)

All clinical records from 60 patients (for their duration of stay) were entered to NVivo 11 as text-readable documents. Before extracting the clinical records from Rio for the RAPID study, all confidential information (e.g., patient names) were removed. The clinical records were then separated according to diagnostic groups using NVivo. The main diagnostic groups used were similar to other qualitative analysis used in the RAPID study. Therefore, the diagnostic groups were:

a) MDD group (n = 24)
b) Personality disorder group (n = 27)
c) Exclusion group (n = 9)

The number of clinical records under each diagnostic group was dependent upon the number of patients in each group. Therefore, the number of clinical records entered under each group was 24 for the MDD group, 27 for the personality disorder group and nine for the exclusion group. Word frequency analysis was then undertaken by going through the clinical records

for each group. The NVivo word frequency command was used to identify frequent words repeating 100 or more times in a given set of clinical records (i.e., for the MDD group, the personality disorder group and the exclusion group). After the most frequent words had been extracted in the respective diagnostic groups, the stop words option was used to exclude unnecessary words. The results appeared in the form of a list of words ranked by frequency, and word clouds were then generated. The letter size, colour schemes, number of words, script and placement (e.g., horizontal or vertical) of the word clouds were adjusted to make them more pictural and visible with para-textual variations (Ahearn, 2014).

In word clouds, the repetition of words adds emphasis to the intensity of the same experience perceived by staff in the inpatient setting. It provided an overview of what the staff were frequently recording for their patients. For example, the term 'risk' was recorded by staff who were looking after patients from all three diagnostic groups (MDD group, personality disorder group and exclusion group). This suggests an intense emphasis by staff on risk assessments and risk management of these patient groups. The word clouds also highlighted the staff members' intent in what they wrote. They provided a holistic perception of what the multidisciplinary team wanted to communicate. Generated patterns in the word clouds were automatic output from NVivo at the discretion of the principal investigator of the RAPID study, and the data were not manipulated. The limitations of the word clouds were that certain synonyms (not grouping the words with similar meaning) and misspelled words (focus only on a single word) would have affected the final outcome of the word clouds (appearance validity in word clouds). Therefore, some terms in a word cloud occasionally approximated rather than replicated the numerical counts of corresponding words (Bletzer, 2015). The word clouds for each group are presented in Figures 6.4–6.6.

Figure 6.4: MDD group word cloud

Figure 6.5: Personality disorder group word cloud

Figure 6.6: Exclusion group word cloud

6.12 Discussion (Clinical Records)

One of the strengths of the above qualitative analysis was that we extracted data from all 60 patients, which provided an adequate sample size. The MDD group had 24 patients and the personality disorder group had 27 patients. Of the 27 patients in the personality disorder group, 22 had borderline personality disorder alone or combined with other personality disorders. We further elicited behaviours shown by the exclusion group, although the sample size was small.

In terms of personality disorder only behaviours in the ward, some of the behaviours our study identified were ‘overinvolved in the care of other patients’, ‘inappropriate amusement of other patients’ distress’, ‘patient seeking involvement of family/friends in their ward management’, ‘self-harming repeatedly on the same site (already self-harmed site)’, ‘demanding staff attention and time’ and ‘patient leaving the ward without completing the discharge paperwork once the discharge decision was made’.

Staff observed that patients were overinvolved in the care of other patients in the ward. At times, staff found patients in the same room. As per ward policy, patients were not allowed

to stay in another patient's room, and they were informed of this rule on admission. Inappropriate amusement at other patients' distress was only observed in the personality disorder group. Staff described this behaviour as 'making fun out of another patient' and 'inappropriate amusement of other people's distress'. Patients in the MDD group failed to show this conduct. Patients were also contacting their family, friends and other sources, such as police, to request them to be involved in ward management. It appeared that this was mainly driven by discontent with the care on the ward. For example:

> Telephone call received from RAPID2's mum stating that RAPID2 was in a pain and needed pain relief. She explained that RAPID2 had said that she wouldn't approach staff because they were blanking her, and that if she 'made her mouth go' you got an 'injection to shut you up'. (Recorded by nursing staff for a patient with a personality disorder)

> Partner informed staff that she (RAPID41) was anxious and agitated due to not being able to go off the ward. Advised that no one was stopping her from leaving. (Recorded by nursing staff for a patient with a personality disorder)

A Swedish qualitative study examining caregivers' experiences and beliefs regarding working with borderline personality disorder disclosed that the ward environment could be negative and provoking for this group if the nursing staff failed to show enough empathy (Bergman and Eckerdal, 2000). It is possible that the patients were inviting outside help due to the perception that they were not getting what they anticipated.

In our qualitative analysis, irritability, anger and anger management–related behaviours were observed across all three diagnosis groups. Anger is considered a normal human emotion. In 1972, Ekman (1999) identified six basic emotions: anger, disgust, fear, happiness, sadness and surprise. In 1980, Plutchik (2002) suggested eight basic emotions that he grouped into four pairs; joy–sadness, anger–fear, trust–distrust and surprise–anticipation. The findings are similar in our study, perhaps because anger is a common basic emotion. Expressions of anger may affect the transference and counter-transference process involving those providing psychiatric care to those patients, especially in staff caring for patients with personality disorders (mainly borderline personality disorder). A study involving psychiatry nurses who cared for borderline personality disorder patients found that roughly one-third (32%) of nurses perceived that patients made them feel angry (Deans and Meocevic, 2006). In our personality disorder group, behaviours under the theme 'altercation, conflict, disgruntled, rude, dismissive and abrupt with staff' were more frequently reported compared with the MDD

group and the exclusion group. Staff may perceive these behaviours as difficult and challenging.

Patients with personality disorder exhibited behaviours of ‘damaging property, aggression, threats and hostility’ more than the MDD group. A qualitative study that aimed to provide insights into the lived experience of clinicians working with borderline personality disorder patients within community mental health teams identified three superordinate themes: clinicians emphasised the stressful nature of their role; coping strategies with or without clinicians’ awareness; and the task of balancing seemingly opposing possibilities, paralleling the need to resolve dichotomous thinking (Hughes *et al*., 2017). The study identified a role for counselling psychologists in helping clinicians. Given the above challenging behaviours, our findings further emphasise the need for training, supervision and psychological inputs for inpatient teams dealing with the personality disorder group.

One may argue that ‘manipulative behaviours’ were only observed in the personality disorder group. Results from a study (Deans and Meocevic, 2006) involving 65 registered nurses (employed in psychiatric inpatient and community services) showed that 89% of nurses perceived patients with borderline personality disorder as manipulative, and more than half perceived them as engaging in emotional blackmail (51%). However, our study found that those behaviours were also observed in the MDD group and the exclusion group. Similarly, ‘conflicting messages given by the patient’ and ‘staff contradicted what the patient was saying or how they were behaving’ were generally accepted as behaviours of personality disorders. The above findings suggested that this was not the case because those behaviours were also observed in the MDD group. It was unclear whether these behaviours manifested in a depressed state due to the exacerbation of personality traits or whether they were embedded into normal depressive symptomatology. Records of ‘manipulative behaviours’ were also observed in the exclusion group.

Both the personality disorder and MDD group patients attempted to leave the ward and were also found to be absent without leave. This behaviour appeared to have driven by a disturbed mental state in the MDD group.

Altercations with friends and family were observed more predominantly in the personality disorder group compared with the MDD group. A self-reported qualitative study examining types of family, friend and provider behaviours that increased the likelihood of borderline personality disorder patients engaging in problematic behaviours reported three themes:

avoidance behaviours (e.g., staying at home until one is 'all better'); encouragement of negative coping; and communication of low behavioural expectations (Carmel *et al*., 2018). The study suggested that recovery goals were hampered by the reinforcement or strengthening of dysfunctional behaviours by friends and family members. Communication of low behavioural expectations (set low expectations for the patient by friends, family or healthcare providers) included patients' efforts at recovery being discouraged by themselves, friends and family. It is possible that the personality disorder patients in our study had altercations driven by these factors during inpatient recovery. Encouragement of negative coping has been reported to include the use of illicit substances (Carmel *et al*., 2018), and in our study, the use of such substances was observed more in the personality disorder group compared with the MDD group.

Self-harming behaviours were predominantly observed in the personality disorder group but were also noted in the MDD group and the exclusion group. Therefore, self-harm in the ward failed to discriminate between the groups. Both refusal to take prescribed medications and medication-seeking behaviours were predominantly seen in the personality disorder group. Similar to our findings, Tyrer *et al*. (2003) described two subclassifications of personality disorders: Type R (those with personality disorder rejecting treatment) and Type S (those with personality disorder seeking treatment).

Word cloud maps were used to identify common terms recorded for the MDD group, the personality disorder group and the exclusion group. Common words for both groups included 'risk', 'staff' and 'mood'. The word 'discharge' appeared more frequently in the personality disorder group compared with the MDD group.

CHAPTER 7: RESULTS: DIAGNOSTIC OPINION OF NON-MEDICAL STAFF

7.1 Background

In the chapter, we present the qualitative findings from the staff questionnaire. We also illustrate how the staff diagnoses are different from the final SCID diagnoses, and the reasons for those differences are explored.

7.2 Objectives

Our objective was to determine how the team's perceptions of the diagnosis on admission, over the span of the admission and at discharge relate to the structured assessment of diagnosis at discharge. Our outcome measure was a qualitative assessment of data to identify any staff observational differences in those with a diagnosis of MDD compared with personality disorders identified via the staff questionnaire.

7.3 Methods (Staff Diagnoses)

Data were obtained from staff using a questionnaire that asked their opinion on diagnosis ('What do you think the main diagnosis is for this patient?') and what led the staff member to arrive at that diagnosis ('What makes you think that?'), including patient presentation and behaviours (see Appendix E). For qualitative analysis purposes, we divided the diagnosis groups as per Chapter 6: MDD group (n = 24), personality disorder group (n = 27) and exclusion group (n = 9).

The staff qualitative diagnoses data were analysed for the MDD group and the personality disorder group patients. We further explored the diagnoses given by staff for two patients with dysthymia in the exclusion group. For the purpose of the analysis, we divided the data into two groups: nursing group and second team member group. The nursing group contained the diagnosis given by nursing staff, while the second team member group included another multidisciplinary team member, excluding psychiatrists. The second team member could be another nursing staff member from the multidisciplinary team, team psychologist, team occupational therapist or exercise therapist involved in the care of the patient. We excluded psychiatrists because they routinely make clinical diagnoses for the patients. Further, the team psychiatrists discussing the diagnosis in team meetings would influence the decision-making

of the other multidisciplinary staff; thus, not collecting data from the psychiatrists minimised the bias.

Appendix D uses colour coding to show the diagnoses given by nursing staff and the second team member in the multidisciplinary team for all 60 patients. This is for the first question in the staff questionnaire ('What do you think the main diagnosis is for this patient?'). Appendix D also shows the SCID-5-RV and SCID-5-PD diagnosis for individual patients according to the formal assessment at discharge. We then compared the diagnoses of the nursing member and the second team member with the final SCID-5-RV and SCID-5-PD diagnoses. We noted that the nursing member and the second team member diagnoses were different at times compared with the SCID-5-RV and SCID-5-PD diagnoses. We then counted how many patients were given a different diagnosis to their respective SCID-5-RV and SCID-5-PD diagnosis by the nursing member and the second team members. The nursing member and second team member data were extracted separately.

7.4 Results

The results were analysed in two groups: nursing group and second team member group. In the nursing group, 11 patients were given a diagnosis of personality disorder or personality disorder–related diagnoses by the nursing staff when none of the SCID-5-RV or SCID-5-PD showed this diagnosis. In fact, these patients were given an SCID diagnosis of MDD without personality disorder and belonged to the MDD group (RAPID study IDs 7, 11, 12, 14, 18, 25, 26, 27, 35, 43, 56). We also noted that one patient was given a diagnosis of personality disorder (RAPID study ID 28) when this patient had an SCID diagnosis of dysthymia.

In the second team member group, nine patients were given a personality disorder or personality disorder–related diagnoses despite having an MDD diagnosis without personality disorder (RAPID study IDs 4, 7, 10, 11, 14, 25, 26, 43, 56). When both the nursing group and the second team member group were combined, 13 patients (54%) were given a personality disorder or personality disorder–related diagnoses, despite them being diagnosed with MDD without a personality disorder (RAPID study IDs 4, 7, 10, 11, 12, 14, 18, 25, 26, 27, 35, 43, 56). We then scrutinised staff qualitative data using the staff questionnaire to analyse differences. As described above, the staff questionnaire consisted of staff members' diagnoses and their reasons.

The above results suggest a tendency towards overdiagnosis of personality disorder and its related pathology in an inpatient stetting by nursing staff and second multidisciplinary team members despite these patients having a diagnosis of MDD without personality disorder. For example, we noted that patients with an SCID diagnosis of MDD with anxiety distress were given a diagnosis of dependent personality disorder by the staff in the questionnaire provided.

We qualitatively explored the factors that led staff to give their diagnosis by examining the staff questionnaire. This was explored by reading the answers provided for the second question in the staff questionnaire ('What makes you think that?'). The answers were extracted and entered into NVivo 11. Thematic analysis methods (Burnard, 1991; Ezzy, 2002) in the qualitative data analysis were then used (see Section 6.3).

Following thematic analysis for the second question in the staff questionnaire, five themes were identified for giving a personality disorder diagnosis when the SCID diagnosis confirmed MDD: (1) 'no depressive symptoms observed', (2) 'struggling to make day-to-day decisions', (3) 'struggling to cope with emotions', (4) 'splitting and disgruntled behaviours' and (5) 'having insight and control over their behaviours'.

7.5 Common Themes for Personality Disorder Diagnosis for MDD Patients

We analysed the staff qualitative data where staff had given a diagnosis of personality disorder despite the SCID diagnosis showing MDD.

RAPID4 was diagnosed with MDD (severe) with mood-congruent psychotic features, but the second team member did not observe depressive symptoms and gave a diagnosis of personality disorder. The team member wrote:

> Although the patient was admitted through depressive episode and suicide attempt, I did not observe any symptoms of low mood since engaging early in admission. I found the patient bright at times. I found the patient to be enjoying attention, company of others, wanting to engage, wanting lots of time and company of staff. Patient never disclosed anything about suicide attempt or events leading up to it. Patient presented more of enjoying the sick role and the attention it brought. (Recorded by an occupational therapist for RAPID4)

This report showed that the staff member did not observe any depressive symptoms and perceived that the patient was presenting with a sick role. Therefore, the patient was diagnosed with a personality disorder. This was categorised into the first theme of (1) 'no depressive symptoms observed'.

RAPID7 had an SCID diagnosis of MDD with mild anorexia nervosa, although both nursing and the second team member (nursing) gave a diagnosis of dependent personality disorder. The rationale for their diagnosis was:

> Difficulty in making everyday decisions — constantly asking others to make these decisions for her. Constantly seeking support from others, afraid of disapproval from family and staff, very anxious if left alone at any point. (Recorded by nursing staff for RAPID7)

> The need to have decisions made for her. Low self-esteem and self-worth. (RAPID7, second staff nurse)

On the ward, the patient was found to be struggling to make everyday decisions and was seeking assistance. Low self-esteem and increased anxiety symptoms were observed by the staff member, and it appeared that those symptoms led the staff member to make a diagnosis of dependent personality disorder (i.e., struggling to cope with day-to-day decisions). This was categorised into the theme (2) 'struggling to make day-to-day decisions'.

RAPID11 was diagnosed as MDD with atypical features, but both nursing and the second team member gave a diagnosis of personality disorder. Their explanations were:

> Difficulty coping with stress, few positive coping strategies, struggled with relationships, his description of thoughts and feelings didn't always match behaviour. (Recorded by nursing staff for RAPID11)

> Behaviours, presentation, no signs of depression, help-seeking in the community. (Recorded by nursing staff [second staff nurse] for RAPID11)

Here, the patient had again been help-seeking and was struggling to cope with stress and relationships. This was categorised into the theme (3) 'struggling to cope with stress'.

RAPID26 was given a diagnosis of dependent personality disorder by the nursing staff member. The second staff member (psychologist) also gave a diagnosis of dependent personality disorder, although the actual SCID diagnosis had been MDD with melancholic features and psychotic symptoms. However, as a secondary diagnosis, the psychologist recorded 'depression'. Nursing staff and the psychologist explained:

> Initially dependent personality, following time on ward, low mood more evident. Initial diagnosis given on admission information followed by assessment in the ward. (Recorded by nursing staff for RAPID26)

> RAPID26 struggled to contain his emotions and relied on others around him when feeling overwhelmed. When this became too much, his mood…became low very fast into a depressive episode. (Recorded by psychologist for RAPID26)

The staff member gave a diagnosis of dependent personality disorder when they observed patients having difficulties in containing emotions and patients relying on others (ward staff and family). This was categorised into (3) 'struggling to cope with emotions'. The psychologist gave a primary diagnosis of dependent personality disorder but was able to recognise depression as a secondary diagnosis.

A discrepancy was noted among the nursing member and the SCID diagnosis for RAPID27. The nursing staff member's diagnosis was borderline personality disorder, while the SCID diagnosis was MDD (moderate) with anxiety distress. The nursing member wrote:

> He had good level of insight into his difficulties, he compared his own knowledge and skills to that of ward staff. He had completed personality scoring test and was disgruntled by outcome…was splitting staff with his own opinions. He was aware of needs of hospital admission although he was not evident throughout admission (going on leave). (Recorded by nursing staff for RAPID27)

The staff member reported noting splitting, disgruntled behaviours and the patient having insight as the reasons for making a diagnosis of borderline personality disorder, despite the patient having a diagnosis of MDD. This was categorised into the theme (4) 'splitting and disgruntled behaviours'.

MDD with psychotic/melancholic symptoms (severe) was the SCID diagnosis for RAPID35, although the nursing staff member diagnosed the patient as having a personality disorder for these reasons:

> Behaviours, element of control over behaviours. (Recorded by nursing staff for RAPID35)

At this juncture, staff reported that patient having control over their behaviours concurrently as a feature in personality disorder. This felt in to the theme recognised (5) 'having insight and control over their behaviours'.

RAPID28 was diagnosed with dysthymia according to SCID, although the nursing staff diagnoses was personality disorder/traits including narcissistic personality traits/disorder. They wrote:

> Denied suicidal thoughts, however he was not bothered if he…were to live or die, felt the world owes him something, talked about himself a lot, Blamed others for things. (Recorded by nursing staff for RAPID28)

> Some hopelessness, low motivation, unrealistic goal setting and expectations from others, lacks personal responsibility and was against society in general. Very focused on his own perceived needs. (Recorded by nursing staff [second staff nurse] for RAPID28)

Staff identified 'patient blaming others, unrealistic expectations, focused on own personal needs than others and lacking personal responsibility' as the reasons behind their diagnosis (i.e., disgruntled behaviours).

7.6 Discussion

Our results suggested an over-diagnosis of personality disorder and its related pathology in an inpatient stetting by non-medical staff of the multidisciplinary team despite those patients being given an SCID diagnosis of MDD without personality disorder. Themes identified for giving an alternative diagnosis by the staff were (1) 'no depressive symptoms observed' by the staff, (2) 'struggling to make day-to-day decisions', (3) 'struggling to cope with emotions', (4) 'splitting and disgruntled behaviours' and (5) 'having insight and control over their behaviours' by those patients.

In our study, we attempted to identify the reasons for staff members to give an alternative diagnosis for their patients oppose to SCID diagnosis. For example, RAPID7 was diagnosed with MDD with anxiety distress plus partially remitted mild anorexia nervosa but staff had given a diagnosis of dependent personality disorder. Staff recognised difficulties in making day-to-day decisions, seeking assistance, low self-esteem and increased anxiety as the reasons for their conclusion. In MDD, low self-esteem, lack of concentration and increased anxiety are common features. It was possible that exacerbation of these symptoms during the depressive illness may manifest as the patient seeking repeated reassurances from ward staff, which would have led to dependent personality disorder impression. In dependent personality disorder, patients may encourage or allow others to make most of their important life decisions and seek excessive amount of advice and reassurance from others. Again, RAPID26 was diagnosed with MDD with melancholic features although staff had given a diagnosis of dependent personality disorder. As the rationale, staff recorded 'rely on others' and 'difficulties in containing emotions'. Yet again, the presentation of dependent personality disorder could be a consequence of the heightened melancholic symptoms such as low self-

confidence, increased fatiguability, diminished activity and ideas of unworthiness. Skodol, Gallaher and Oldham (1996) found no specific relationship between dependent personality disorder and depressive disorders. However, Birtchnell (1984) reported that some individuals made excessive demands for affection and became depressed or had persistently negative attitudes to life that resulted in self-blame, and dependence was closely related to depression.

RAPID11 was diagnosed as MDD with atypical features. In atypical depressive disorder, patients present with variable depressed mood (with reactivity to positive events), interpersonal sensitivity and pronounced anxiety. They react in an exaggerated way to perceived or real rejection (rejection sensitivity) and these features can be exacerbated during depressive illness (Harrison *et al*., 2018e). Staff identified relationship difficulties, poor coping, anxiety, and his behaviours not matching his complaints as the reasons for the personality disorder. Mood reactivity to positive events and variable depressed mood may mimic 'no signs of depression' in an inpatient setting. Further, the interpersonal sensitivity would have inflamed during the depressive illness where staff may have recognised this presentation instead as personality disorder.

Splitting and disgruntled behaviours were perceived by the staff to equate to a diagnosis of borderline personality disorder in RAPID27 regardless of MDD (moderate) with anxiety distress diagnosis in SCID. It appeared that the splitting behaviour of the patient had been increased during the acute phase of the depressive illness. Splitting is a defence mechanism seen in patients with borderline personality disorder (Zanarini, Weingeroff and Frankenburg, 2009). It is a diagnostic criterion in DSM-5 described as:

> a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation. (APA, 2013, p.325)

An element of control over their behaviour was acclaimed as a feature in personality disorder by staff (RAPID35). This feature is not a diagnostic criterion notwithstanding the fact that it is commonly seen in an inpatient setting. In the above staff qualitative analysis, narcissistic personality disorder traits were identified in a dysthymia patient. In narcissistic personality disorder, the self-perception of being unique, the need for continual admiration from others and a sense of entitlement to special treatment from others were recognised (ICD-10 and DSM-5), although these traits are not included in the diagnostic criteria for dysthymia (ICD-10 or DSM-5). In RAPID28, although the patient was diagnosed with dysthymia, staff observed traits such as 'patient blaming others, unrealistic expectations, focused on own

personal needs and lacking personal responsibility', which appeared to be narcissistic personality traits. These narcissistic traits appeared to have manifested during the acute phase of the depressive illness (dysthymia).

One of the limitations in the staff qualitative data collection was that we advised staff members to name one main diagnosis. When a patient had multiple comorbidities, our request to the staff was to name one main diagnosis. For example, for a patient with both MDD and personality disorder diagnoses, staff were requested to name only one. Here, our aim was to identify the dominant diagnosis recognised by the staff. However, despite our request, staff gave a few diagnoses on the qualitative questionnaire. With a view to minimising bias, we did not extract data from the psychiatrists in the team.

Our objective was to determine how the team's (non-medical staff) perception of the diagnosis during the inpatient stay related to the SCID diagnosis at discharge, and to identify qualitatively the factors (e.g., any staff observational differences) that predict the diagnosis at discharge. We found that ward staff readily reached a diagnosis of personality disorder compared with formal research assessments, and that such diagnoses were applied to patients with challenging behaviours. Newton-Howes, Weaver and Tyrer (2008) reported that staff found it more difficult to manage patients with an overt diagnosis of personality disorder compared with patients with a covert diagnosis personality disorder. Although the staff were blind to the SCID diagnosis, they still appeared to shift their diagnosis towards personality disorder when they felt the patients were harder to manage and challenging in an inpatient setting. Our study revealed that patients with a final diagnosis of MDD were misdiagnosed by non-medical staff in an inpatient setting. Ayano *et al*. (2021) investigated the prevalence of misdiagnosis in healthcare settings using the SCID. They found that up to 55% of the patients with an SCID diagnosis of MDD were misdiagnosed, and having a diagnosis of depressive disorder and symptoms such as suicidal ideation was found to be significant predictors for this misdiagnosis. Previous studies further identified several factors in the misdiagnosis of psychiatric disorders, including an overlap of symptoms across mental disorders, reliance on history taking, instability of symptoms, knowledge and skills of the assessors (not following diagnostic criteria), and complexity in presentation (Pies, 2007; Rothschild *et al*., 2008). Our findings suggest that healthcare authorities need to address the issue around this misdiagnosis by providing training for staff. Olson *et al.* (2019) introduced 12 competencies that should be included in health professions' education programs to improve the quality of diagnosis in clinical practice.

CHAPTER 8: SUMMARY DISCUSSION

8.1 Main Findings

In our structured observational study, we sought to explore the relationship between affective state and personality ratings in an inpatient setting. Sixty eligible inpatients presenting with depressive symptoms were assessed on admission and at discharge using subjective and observer-based ratings of mood, together with subjective and objective assessments of selected neurocognitive function (CFQ and DSST) prior to confirmation of diagnostic group. A structured diagnostic interview at the point of discharge was used to categorise patients into the MDD group or personality disorder group (with or without comorbidity such as MDD), and the groups were compared on study measures. Another comparison was conducted between the DBD group and the personality disorder group. Qualitative data were gathered throughout the inpatient stay using field research methods such as patient records and the staff qualitative questionnaire.

The mean LOS for the MDD group was 42 days compared with 25 days for the personality disorder group. The majority of the patients in the personality disorder group had borderline personality disorder (81.4%). It is estimated that around 20% of inpatients have personality disorders, mainly borderline personality disorder (Zimmerman, Chelminski and Young, 2008). The target inpatient LOS for personality disorder patients remains controversial. There is general consensus among treating teams to keep the LOS for personality disorder patients, mainly borderline personality disorder patients to a minimum (lasting for days rather than months). The American Psychiatric Association practice guidelines for the treatment of patients with borderline personality disorder recommend a brief inpatient stay. However, the same guidelines recommend an extended inpatient stay for borderline personality disorder patients with persistent and severe suicidality or comorbid substance dependence (APA, 2001). Fowler *et al*. (2018) reported that extended inpatient treatment can result in significant and clinically meaningful symptomatic and functional improvement in borderline personality disorder patients without iatrogenic effects. The LOS for MDD appears to rely on a variety of factors, including how fast the patient responds to treatment. Inpatient treatment response in depressive illness relies on the pre-admission level of functioning and additional therapy received (Möller, Krokenberger and von Zerssen, 1993; Rabinowitz, Modai and Inbar-Saban, 1994; Zubenko *et al*., 1994). The initial therapeutic reaction shown by depressed patients and the reaction shown by responsible psychiatrists towards their patients on admission to an

inpatient unit can also affect treatment outcomes (Priebe and Gruyters, 1995). Therefore, it is important to diagnose the depressive illness early on admission in order to proceed with effective treatments, and our study explored the ways of differentiating MDD from personality disorders.

Cheng *et al*. (2007) found no evidence to show that patients with a long hospital stay would gain treatment benefits over patients with MDD with a short stay. One of the limitations of this study was that psychosocial factors such as housing issues were not taken into consideration. Zubenko *et al*. (1994) also reported that length of hospitalisation independently contributed to the prediction of clinical response in MDD. Despite the remission of depressive symptoms in patients with MDD, other factors could prolong inpatient LOS, such as social factors (e.g., housing issues). Zhang, Harvey and Andrew (2011) argued that LOS is predictable but not readily modifiable within the clinical domain. The study reported that a prolonged LOS is determined by behavioural manifestations of illness and a lack of social support structures, and good clinical practice does not necessarily translate to a shorter LOS.

Irrespective of the above findings on LOS for MDD and personality disorder patients, there has been a reduction in inpatient psychiatry bed numbers over the years. It is estimated that NHS acute inpatient hospital beds for mental health patients decreased by approximately 40% from 2007/2008 to 2016/2017 (Goh, 2017). The total number of NHS hospital beds in England has been reduced by more than 50% since 1987, and the largest reductions have occurred in mental health and learning disability beds (Ewbank *et al*., 2021). It was reported that this reduction in bed numbers was underpinned by the policy shift to providing care for patients with mental health issues in the community rather than in an inpatient setting. Goh (2017) argued that more patients were being shuffled to community services when inpatient care appeared to be more appropriate. The final commission report (Old Problems, New Solutions) on the provision of acute inpatient psychiatry care for adults in England identified pressures on mental health beds and recommended undertaking service capacity assessments and improvement programs to ensure that local services have an appropriate number of beds (Crisp, Smith and Nicholson, 2016). A survey of 320 psychiatrists by the Royal College of Psychiatrists (2021) found that 85% of the psychiatrists reported more pressure on inpatient beds compared with one year earlier (James, 2021). In addition, 34% of the psychiatrists said they would explore beds outside their local area for their patients, while 24% said they would delay admission and treat them in the community. In our qualitative staff questionnaires, when MDD patients were given a diagnosis of personality disorder by the staff, it would be ideal to

explore whether those decisions were influenced by external factors such as bed pressures, and this is an area for future research.

Inpatient LOS is influenced not only by demographic and socioeconomic factors, but also by the attitudes of hospital staff (Kirshner and Johnston, 1985). In our study, the difficult behaviours shown by the personality disorder group may have influenced the attitudes of hospital staff towards earlier discharge of the patient. The issue arises when patients with a diagnosis of MDD (without a personality disorder), with manifest behaviour superficially consistent with a personality disorder, influence the attitudes of staff towards early discharge, even though those patients may require a relatively longer stay in an inpatient setting given the underlying diagnosis of MDD.

Extending an unnecessary LOS for a patient may undermine the benefits of treatment (Kirshner and Johnston, 1985; Cheng *et al*., 2007). Therefore, it may be counterproductive to keep a patient longer unnecessarily, and this principle may apply specifically for the personality disorder group. In our qualitative data, patients with personality disorders expressed an unwillingness to be discharged from the ward. However, patients with MDD were requesting discharge (expressing a wish to be discharged) from the ward more predominantly than the personality disorder group.

8.1.1 Assessment of Mood

On admission, the MDD group was rated as more depressed by research staff, but the personality disorder group reported a greater severity of depressive symptoms subjectively. Improvements in observer-based assessments of mood and neurocognitive function were observed in both groups over the span of inpatient admission. Subjective ratings of mood also improved in both groups, but to a lesser extent in the personality disorder group. Those in the personality disorder group subjectively reported a greater degree of neurocognitive impairment and, unlike the MDD group, these subjective ratings did not improve during admission despite improvements being noted on observer-based measures. A similar trend was observed in the DBD group. The DBD group was rated as more depressed by staff on admission, but the personality disorder group reported a greater severity of depressive symptoms subjectively. Again, improvements in observer-based assessments of mood and neurocognitive function were observed in both groups over the span of inpatient admission. Subjective ratings of mood also improved in both the DBD group and the personality disorder group, but to a lesser extent in the personality disorder group. Those in the personality disorder

group subjectively reported a greater degree of neurocognitive impairment and, unlike the DBD group, these subjective ratings did not improve during admission despite improvements being noted in observer-based measures.

In our study, patients with personality disorders consistently reported greater levels of depressive symptoms subjectively despite similar or lesser observer-based ratings of severity when compared with patients in the MDD group. A heightened subjective experience of depression in MDD comorbid with borderline personality disorder has previously been reported (Stanley and Wilson, 2006). Studies have found that the personality traits of harm avoidance, self-directedness, neuroticism, conscientiousness and cooperativeness correlated significantly with the BDI scores (Peirson and Heuchert, 2001; Arkar, 2010; Buhan, Rehman and Ooi, 2017). Arguably, these traits may contribute to self-recognition of depressive symptomatology in patients with a personality disorder, accounting for the higher subjective rating of depression severity observed in our study.

When exploring the effects of personality traits on mood, Richter, Polak and Eisemann (2003) found that harm avoidance and self-directedness were substantially related to depressed mood (assessed using the BDI) in both depressive inpatients and the nonpsychiatry population. Similarly, in our study, those personality traits may have contributed to the finding of depressed mood (as subjectively reported in the BDI) in the MDD group. It has also been reported that those with a diagnosis of borderline personality disorder differ significantly in dimensions of 'novelty-seeking' and 'cooperativeness' compared with controls (Fossati *et al*., 2001), and that differences between self-ratings and clinician ratings correlate with dysfunctional attitudes and lower self-esteem (Domken, Scott and Kelly, 1994). In our study, some of these personality characteristics may have contributed to inflated BDI scoring in the personality disorder group.

In our qualitative data, the above-described subjective and observer-based rating differences in the MDD group and the personality disorder group were further evident. Subjective patient complaints of depressive symptoms such as low mood, anxiety symptoms, low energy, anhedonia and poor sleep with less objective observations of those symptoms were observed in the personality disorder group according to our qualitative data. This was evident in the theme 'staff contradicting what the patient was saying or how they were behaving' and was reported as:

> Objectively, RAPID29's mood appeared euthymic, bright and reactive during conversations. Humour was evident at times. Subjectively, RAPID29 reported his mood as being 'chaotic'. He felt…anxiety was his most prominent concern. (Recorded by staff for a patient with personality disorder)

Similarly, staff reports of conflicting messages from patients were further observed in the personality disorder group. This finding suggests that the staff observer-based findings did not tally with the patients' subjective complaints or presentation in the ward qualitatively. Staff may have recognised these subjective complaints by patients in the personality disorder group as per our theme 'manipulative behaviours', and staff recorded more frequent manipulative behaviours in the personality disorder group compared with the MDD group. When a personality disorder patient presents with increased subjective distress (as evident by the high BDI scoring), staff may recognise those behaviours as a way of gaining more medications, such as benzodiazepines, despite no observer-based evidence of distress. Similar to our findings in the personality disorder group, Hasler *et al*. (2014) reported high symptomatic heterogeneity, highly fluctuating symptoms and weak correlations between symptoms and functional outcomes in those with a diagnosis of borderline personality disorder.

In our quantitative data, we found that the MDD group on admission was more severely depressed in observer-based ratings compared with the personality disorder group, with ratings conducted prior to the formal determination of diagnosis. Similarly, in our qualitative data, the MDD group was found to have more frequent observer-based reports of distress (as recorded by the staff in clinical records), such as observable tremor, agitation, anxiety and low mood (see Appendix C). Staff qualitative observations such as anhedonia, hopelessness and negative cognitions were observed more in the MDD group than the personality disorder group. These staff observations may have translated into the HAMD, because we observed higher HAMD scoring in the MDD group compared with the personality disorder group on admission.

A weak to moderate association has previously been reported between HAMD and BDI scores at first assessment (Davies, Burrows and Poynton, 1975; Schnurr, Hoaken and Jarrett, 1976; Richter *et al*., 1998; Carter *et al*., 2010), which may be explained by the differences in the depressive symptoms sampled by the two scales (Lambert *et al*., 1986; Bagby *et al*., 2004). In our study, a moderate positive (significant) relationship was observed between the BDI and the HAMD in the MDD and DBD groups only at discharge. A weak positive (nonsignificant)

correlation was found between the HAMD and BDI on admission across all three diagnostic groups, and a negative (nonsignificant) correlation on discharge in the personality disorder group. One interpretation of these findings is that the clinicians conducting the HAMD rating may not have identified the full range of depressive symptoms that those in the personality disorder group were experiencing subjectively. For instance, the past experiences of patients in this personality disorder group may have resulted in difficulties in interpersonal communication with healthcare professionals. Alternatively, it could be argued that characteristics of MDD occurring in conjunction with personality disorders may differ from the profile in MDD alone, such that the HAMD inadequately assesses its severity or that those with a diagnosis of personality disorder experience a greater level of distress for a given level of severity of depression. Silk (2010) reported the difficulties in differentiating MDD in personality disorders from MDD alone and suggested exploring patients' interpersonal relationships in detail to understand MDD in personality disorders. The ward is a new environment to our patients and the patients with whom they interact. These patients would already have a high score for both depressive and anxiety symptoms irrespective of their diagnosis because they were away from their natural habitat and close social support system.

The presence of anxiety may have interfered with our patients' reporting in the self-rating scales that we used as a means of assessment. Divergence between the BDI and the HAMD was high and correlated positively with anxiety in treatment-resistant depressive disorder comorbid with personality disorder (Rane *et al*., 2010). The discrepancy between the BDI and HAMD scores observed in our study could therefore be influenced by comorbid anxiety, the severity of which we did not specifically assess. Personality characteristics such as high neuroticism have been associated with discrepant HAMD–BDI scores (Prusoff, Klerman and Paykel, 1972; Paykel *et al*., 1973; Enns, Larsen and Cox, 2000; Duberstein and Heisel, 2007). Our MDD group included patients with a DSM-5 diagnosis of MDD (n = 24); of those 24 patients, the majority (15 patients) were diagnosed with MDD with anxiety distress, while three patients had MDD with psychotic features (with or without melancholic features). One patient had MDD with atypical features, and another had MDD with melancholic features. Four patients had MDD without specifiers. In the personality disorder group (n = 27), 10 patients had MDD with anxiety distress (out of 15 patients with a personality disorder plus MDD). Anxiety parameters were not specifically assessed in our study.

High BDI scores relative to HAMD scores have also been reported in younger patients and those with non-melancholic depressive disorder (Domken, Scott and Kelly, 1994; Enns,

Larsen and Cox, 2000). In our study, patients in the personality disorder group were younger than those in the MDD group and contained patients with non-melancholic depressive disorder. In contrast, Rane *et al*. (2010) reported no significant association between BDI–HAMD discrepancy and age. Schneibel *et al*. (2012) reported that the HAMD and BDI discrepancy was associated with personality characteristics. The discrepancy between the self-rated (BDI) and observer-rated (HAMD) differences was reported not only between the BDI and HAMD. A study of the effects of personality and dysfunctional attitudes using self-rated depression (PHQ-9) and observed-rated depression severity (HAMD) found discrepancies between the PHQ-9 score and the HAMD score related to neuroticism, extraversion and dysfunctional attitudes (Ma *et al*., 2021). Overall, it appears that discrepant scores in observer-rated (HAMD) and self-report measures (BDI) were mainly observed in the personality disorder group according to our study, despite the two scales previously demonstrating reliability and validity. Enns, Larsen and Cox (2000) advised on the value of multimodal assessment in the conduct of research rather than relying on the HAMD and the BDI.

Dysthymic and 'nonendogenous' MDD patients self-reported significantly more symptoms than their clinicians did (Rush, Hiser and Giles, 1987). In our study, dysthymia patients were in the DBD group but not in the MDD or personality disorder groups. Caution is advised in characterising those with high BDI scores as clinically depressed according to our study findings. Previous studies have also advised caution when labelling patients with high BDI values as clinically depressed, because the scale is not a diagnostic tool (Joiner, Schmidt and Metalsky, 1994; Rudd and Rajab, 1995). However, the BDI findings could differ in the nonpsychiatric population. Peirson and Heuchert (2001) investigated the BDI findings in a nonpsychiatric population and found that psychology students who scored highly on the BDI were likely to be experiencing a negative or depressed mood.

At discharge, we found that the MDD v. personality disorder groups did not differ on the HAMD scale, although the MDD group was rated as more severely depressed on admission using this scale. The HAMD score alone is unlikely to differentiate those with MDD from those with a personality disorder. Similarly, the HAMD scores failed to differentiate between the DBD group and the personality disorder group both on admission and at discharge. Many HAMD scale items have previously been identified as poor contributors to the measurement of depression severity (Bagby *et al*., 2004). Using the CGI, the MDD group in the current study was rated as more severely ill on admission, with groups not differing in severity at

discharge. Conversely, Zimmerman *et al*. (2013) found that MDD occurring with comorbid borderline personality disorder was rated as significantly more severe using the CGI compared with those with depression, albeit depression occurring in bipolar disorder (type II).

8.1.2 Neurocognition

In the current study, the personality disorder group reported greater subjective cognitive impairment compared with the MDD group on admission and at discharge. The DSST performance improved in both groups at discharge, but the DSST failed to differentiate between groups (no significant difference was found in the DSST mean scores between the MDD group and the personality disorder group, both on admission and discharge). Similar findings were observed between the DBD group and the personality disorder group, where the DSST failed to differentiate between the groups.

The personality disorder group scored highly on the subjective CFQ at baseline and discharge (expressing subjective cognitive deficits) despite objective findings on the DSST showing an improvement. The CFQ findings were consistent with the objective DSST scoring in the MDD group; a reduction in the CFQ scoring was seen at discharge together with an objective increase in the DSST scoring. In contrast, the personality disorder group improved on the DSST but not subjectively on the CFQ. Previous research has shown that patients with borderline personality disorder complain of subjective cognitive impairments, although their objective cognitive impairments depend on the neurocognitive testing used. For example, the Luria Nebraska Neuropsychological Battery was inconclusive in finding objective cognitive deficits, although tests for planning and sequencing (frontal lobe) showed deficits (Moses and Maruish, 1988; Rogalski *et al*., 1986; Ruocco, Lam and McMain, 2014). In contrast, patients with histrionic and narcissistic personality disorders reported significant impairment in objective tests of cognition and information processing (Burgess, 1992). Wagle, Berrios and Ho (1999) reported a correlation between CFQ scores and psychiatric symptoms associated with stress, and Van der Linden *et al*. (2005) found that CFQ scores were correlated with psychological strain and burnout. This raises the possibility that the high scoring on the CFQ in the personality disorder group was a result of increased vulnerability to stress, or at least the subjective experience of it (as objective assessments of neurocognitive function improved in the personality disorder group over the course of admission). Cognitive deficits in executive function (e.g., impulse control) show deficits in personality disorder (Ruocco, 2005), and this

deficit may better manifest in subjective testing, including the CFQ. Krause-Utzbut *et al*. (2013) reported difficulties in detecting cognitive functions related to impulse control in objective neurocognitive assessments, which may include DSST in our study. Studies have reported a link between personality traits and subjective cognitive impairment (Muñozet *et al.*, 2020), and this may also be a contributing factor in our CFQ findings.

We used the assessment tools correlating to each other (e.g., CFQ and BDI). Wagle, Berrios and Ho (1999) investigated the correlation between the CFQ and the BDI in patients with three types of mental disorders — organic mental disorders (n = 209), mixed mental disorders (n = 115) and functional mental disorders (n = 322) — and found that the total CFQ score was significantly correlated with the BDI in the organic and functional patient groups. Our findings suggest a moderate positive (significant) relationship between the BDI and the CFQ both on admission and at discharge for the MDD group, and at discharge for the personality disorder group. A weak but nonsignificant correlation was found on admission for the personality disorder group between the BDI and the CFQ. As a result of our findings, it can be argued that the stress level increased at discharge for the personality disorder group compared with admission, and the correlation became moderate and significant at discharge compared with weak nonsignificant on admission for the personality disorder group. In our qualitative data, objective staff recordings of poor concentration and psychomotor retardation, which can affect cognition, were observed more frequently in the MDD group compared with the personality disorder group. In addition, previous studies have reported a link between childhood trauma and cognition, which may also be a factor affecting cognitive performance in the present study. Velikonja *et al*. (2019) found neurocognitive deficits in patients with schizotypal personality disorder with childhood trauma compared with schizotypal personality disorder without childhood trauma. In patients with schizotypal personality disorder with childhood trauma, there are impairments in working memory, verbal fluency, visual and verbal learning, and memory. During childhood, those with personality disorder may recall issues with attention and slow learning (Fossati, Novella and Donati, 2002), and those patients may subjectively perceive difficulties with attention and long-term memory in adulthood, which may again manifest in our CFQ results.

Although we observed a discrepancy in subjective and observer-based ratings of mood and objective neurocognitive function, Black *et al*. (2009) argued that selected personality traits such as impulsivity play a primary role in predicting borderline personality disorder over neuropsychological test abnormalities, such that we need to interpret our findings and the root

cause of the discrepancy with caution. In borderline personality disorder, impulse control interacts with other symptoms such as emotional dysregulation (Sebastian *et al*., 2013). In our qualitative data, the 'risk of impulsivity' was more frequently observed in the personality disorder group compared with the MDD group. As we hypothesised in our study, for patients presenting to inpatient services with symptoms of depression, there were differences in subjective and observed/objective ratings of mood and cognition between those who were discharged with a diagnosis of MDD and those who also had a personality disorder. Thus, we felt that our objectives of exploring patterns of change in observed and subjective ratings of mood and cognitive functions to determine differences in MDD and personality disorders, and to identify qualitatively the factors that predict the diagnosis at discharge, were met.

In MDD and personality disorders, affective symptoms can be less informative and inherently subjective. However, in cognitive dimensions, the differentiation between subjective and objective symptoms is very relevant and can be beneficial in replacing imprecise terms such as 'pseudodementia'. In our study, the objective and subjective distinction is firmer for the cognitive dimensions, and this is a clear strength of the study. However, objective and subjective ratings of mood are generally accepted terms, and while the distinction is less clear, the interpretation is aided by the direction of the findings being in alignment with changes in the cognitive domains. For clarity, we have described the relevant mood rating scales as observer-rated (observer-based rating) rather than objective. Symptoms are inherently subjective, and had our study focused exclusively on these, we agree that this would have been a significant limitation of our work.

8.1.3 Childhood Trauma

Both the MDD group and the personality disorder group reported childhood trauma, and previous studies have found higher reporting of childhood trauma in severe mental disorders compared with healthy individuals (Fisher *et al*., 2010; Etain *et al*., 2013). The subjective reporting of childhood trauma was significantly higher in the personality disorder group compared with the MDD group (emotional abuse, emotional neglect, physical abuse) and the DBD group (emotional abuse, emotional neglect, physical abuse, physical neglect, sexual abuse). Further research is required to determine the reasons behind subjective higher reporting of childhood trauma in the CTQ for personality disorder patients compared with MDD patients, despite previous literature showing that both conditions are associated with childhood trauma.

The common cause model for personality disorder and depressive illness has previously been suggested (Klein, Fassbinder and Schweiger, 2014); however, our differences in CTQ findings on these two conditions may challenge this notion. In our study, the majority of patients in the personality disorder group had borderline personality disorder and anxious avoidant personality disorder, and previous studies have identified a history of childhood trauma in both. Hageman *et al*. (2015) found an association between anxious avoidant personality disorder and sexual abuse. Similarly, childhood trauma was reported by borderline personality disorder patients, as described in our literature search. Danese and Widom (2020) identified that the subjective experience of childhood trauma is linked to an elevated risk of psychopathology, regardless of whether the reports of childhood trauma were consistent with objective evidence identified through court records. The findings suggest the importance of subjective assessments of childhood trauma in disorders such as MDD and personality disorders. Our objective was to explore differences in the subjective reporting of childhood trauma to determine whether there were differences between those with a diagnosis of personality disorder and those with MDD. Given the above, we felt that our objectives were met.

We did not specifically explore the correlation between increased violence and aggression observed in the personality disorder group in the qualitative data and the CTQ quantitative data. Studies have investigated the link between childhood trauma and aggressive behaviours. Childhood abuse or neglect increases the risk of delinquency and adult violent criminal behaviour (Widom, 1989). Measures of lifetime aggression (assessed using the Brown–Goodwin Lifetime History of Aggression questionnaire) were correlated with childhood trauma identified in the CTQ (Brown *et al*., 1979; Sarchiapone *et al*., 2009; Garno, Gunawardane and Goldberg, 2008). In our study, we observed increased violence and aggression in the personality disorder group compared with the MDD group, as well as subjective higher reporting of childhood trauma reported in the personality disorder group compared with the MDD group.

8.1.4 Qualitative Analysis

Our qualitative findings showed that patients with a diagnosis of personality disorder showed certain behaviours that were not shown by those with a diagnosis of MDD during their inpatient stay. Qualitatively, behaviours such as ‘overinvolved in the care of other patients’, ‘inappropriate amusement of other patients’ distress’, ‘self-harming repeatedly on the same

site (already self-harmed site)' and 'patient seeking involvement of family/friends in their ward management' were only observed in the personality disorder group. Damaging property, aggression and threats, self-harm, substance misuse, and medication-seeking behaviours were predominantly observed in the personality disorder group compared with the MDD group in an inpatient setting. These behaviours manifested by the personality disorder group created challenges for the ward staff in managing those behaviours in an inpatient setting. A study exploring the management difficulties faced by staff caring for personality disorder patients reported that inpatient nursing staff caring for patients with borderline personality disorder experienced burnout, tension and exhaustion (Piccinino, 1990). Manipulative behaviours, absconding, disgruntled and angry behaviours were observed across both the personality disorder and MDD groups. More patients in the personality disorder group made derogatory comments about the ward and their staff (see Appendix C). This may create negative attitudes in staff members caring for those patients, and it would be a challenge for inpatient staff — mainly psychiatric nurses — to manage their own negative attitudes, as well as their feeling of being manipulated, while maintaining a therapeutic environment that promotes establishing rapport and trust (Deans and Meocevic, 2006).

In our qualitative data, those with a diagnosis of personality disorder displayed symptoms and behaviours consistent with a DSM-5 diagnosis of personality disorder. For example, codes identified in our qualitative analysis included 'labile mood' and 'irritability/anger' (see Appendix C). According to DSM-5 criteria, symptoms displayed by patients with a diagnosis of borderline personality disorder (see Appendix A) include affective instability and inappropriate (or intense) anger. As described above, the majority of patients (22 of 27) in the personality disorder group had borderline personality disorder. Another DSM-5 personality trait recognised in borderline personality disorder is recurrent suicidal behaviour, gestures or threats, and self-mutilating behaviour. In our personality disorder group, behaviours of 'self-harm or attempt in the ward or during ward stay including leave', 'self-harm thoughts objective record by staff' and 'self-harm thoughts subjective complaint by the patient' were frequently identified. Again, the code 'risk of impulsivity', which is recognised as a characteristic trait in borderline personality disorder (Paris, 2005), was recorded by our staff in the personality disorder group. Personality disorder group patients expressed their unwillingness for discharge and expressed self-harm thoughts when planning discharge, and this could be a result of frantic efforts to avoid real or imagined abandonment, which is another personality trait of borderline personality disorder.

Nine patients in the personality disorder group had anxious avoidant personality disorder. The code ‘patients expressing anxieties about discharge’ was observed in the personality disorder group, and it is recognised that patients with anxious avoidant personality disorder are unusually reluctant to take personal risks or engage in any new activities. Lampe and Malhi (2018) described issues with early attachments and attachment styles in patients with a diagnosis of anxious avoidant personality disorder, and this attachment pathology may have contributed to patients expressing reluctance to be discharged from the ward, because they had already established attachments with the staff and patients in the inpatient setting. Patients with borderline personality disorder have conflicted and unstable relationships (Kulacaoglu and Kose, 2018). The codes ‘relationship difficulties with the partner’ and ‘relationship issues with other family members’ were predominantly observed in the personality disorder group compared with the MDD group. Therefore, it appears that the symptoms and behaviours identified in our qualitative observations were consistent with a DSM-5 diagnosis of personality disorder. However, we noted that staff had difficulty identifying some of the key personality disorder characteristics, such as chronic feelings of emptiness, which was only recorded once in the personality disorder group. Miller *et al*. (2020) reported difficulty recognising chronic feelings of emptiness and stated that further research is required to better understand and quantify this experience.

Those with a diagnosis of MDD also displayed symptoms and behaviours consistent with a DSM-5 diagnosis of MDD according to our qualitative data. The codes of anxious mood, observable anxious tremor, and patient being agitated and anxious were predominantly recorded by staff for patients in the MDD group compared with the personality disorder group. The majority of those patients in the MDD group had anxiety distress associated with MDD, which may have led staff to record those behaviours objectively. Again, observer-based records by the staff of anhedonia, low energy level, poor eye contact, hopelessness and negative cognitions were predominantly recorded in the MDD group compared with the personality disorder group, and those symptoms were recognised as MDD symptoms according to the DSM-5 and the ICD-10. However, an issue arises when certain behaviours observed in the MDD group also appear in the personality group, making an individual diagnosis difficult for clinicians. This overlap was observed both in the staff questionnaire and in the qualitative data from the clinical records. For example, the code ‘patient seeks out staff for therapy or help-seeking behaviours’ was observed in both the MDD group and the personality disorder group. It is recognised that patients with dependent personality disorder

have difficulties making everyday decisions without an excessive amount of advice and reassurance from others (see Appendix A). This presentation could also be caused by the effects of pathoplasticity, which may complicate the diagnosis, leading to different diagnostic views from the multidisciplinary staff. We noted a large number of codes, subthemes and themes overlapping each other in the MDD group and the personality disorder group. This issue was further observed in the staff questionnaire. Nursing staff and a second multidisciplinary team member collectively gave personality disorder–related diagnoses in an extra 54% of patients, despite these patients being diagnosed with MDD without a personality disorder. As we hypothesised, it appeared that the ward staff had readily reached a diagnosis of personality disorder compared with formal diagnostic assessments, and that such a diagnosis was applied when facing challenging behaviour.

Therefore, our findings show that patients with MDD can also present with features suggestive of a personality disorder, only for these to resolve when the primary MDD is successfully treated (when our SCID diagnosis was conducted; closer to discharge from the ward). Even in the exclusion group in our study, the staff questionnaire findings showed that a patient with a diagnosis of dysthymia (according to the SCID) were given a diagnosis of narcissistic personality traits/disorder by the nursing staff member. A qualitative study that asked relatives to describe their interactions with a relative with pathological narcissism (people with high narcissistic traits) reported their relative having grandiose fantasies, showing arrogance and requiring admiration, as well as entitlement, envy, exploitativeness, lacking empathy, self-importance and interpersonal charm (Day, Townsend and Grenyer, 2020). In our study, staff may have observed similar presentation when interacting with dysthymia patients to arrive at a diagnosis of narcissistic personality pathology. This further raises the question of whether diagnoses of personality disorders and mood disorders accurately reflect independent, valid and reliable constructs. Akiskal (1981) argued that personality disorders are chronic versions of mood disorders. Acute stressful life events can trigger an episode of MDD (Kessler, 1997) and adversely affect psychosocial functioning in personality disorders (Pagano *et al.*, 2004). However, Shea and Yen (2003) reported that personality disorders and mood disorders vary in duration, have an enduring pattern and are episodic in nature. The construct of a mood disorder is different from the construct of a personality disorder from the perspective of a clinical course, and some diagnostic criteria for the two disorders are more stable (Skodol *et al.*, 2010). Affective instability and inappropriate intense anger were recognised as more stable borderline personality disorder criteria over the

first two years of follow up (McGlashan *et al*., 2005). Remission rates appeared to vary in MDD and personality disorders; it is estimated that around 88% of the patients with unipolar major depression went into remission at five years (Coryell *et al*., 1989).

Lewis and Appleby (1988) found that healthcare providers held preconceived and unfavourable opinions on patients with personality disorder, regarding this group as manipulative, attention-seeking, annoying and in control of their suicidal urges. They described that personality disorder appeared to be an enduring pejorative judgement rather than a clinical diagnosis. Miller, Eisner and Allport (1994) reported that some patients with a diagnosis of personality disorder spoke about being terrified of disapproval or rejection, particularly from key professionals, and they frequently withheld some information as a result (which may affect the diagnostic assessment). Our finding provides evidence of the need for training and education for inpatient staff caring for patients with a diagnosis of personality disorder. In particular, the viewpoints of multidisciplinary staff play a major role in decision-making in the context of the multidisciplinary psychiatry setting. As a result of the demise of large psychiatric institutions, mental healthcare started moving to the community in the 1950s, and the delivery of mental health treatment via multidisciplinary teams started to develop (Leff and Trieman, 2000). In an effective multidisciplinary setting, team members understand and respect the competencies, views and perspectives of other team members, and they learn from other disciplines (Mental Health Commission, 2006). New knowledge such as the findings of our study should be shared among multidisciplinary staff to maximise the delivery of care and clinical effectiveness. A study exploring the knowledge of psychiatric nurses caring for borderline personality disorder patients found that more than one-third (34%) of the respondents were unsure how to care for patients with borderline personality disorder (Deans and Meocevic, 2006). Cleary, Siegfried and Walter (2002) found that the majority of mental health staff (95%) indicated their willingness to gain further education and training in the management of patients with borderline personality disorder. Further education should be based on agreed and developed clinical frameworks, which would guide better psychiatric nursing care for the personality disorder patient group (O'Brien, 1998).

8.2 Methodological Strengths and Weaknesses

To the best of our knowledge, no research to date has explored the differences between MDD and personality disorders conducted throughout the stay in an inpatient setting using both quantitative and qualitative methods. Inpatients could provide an opportunity to undertake a

detailed assessment of personality and mood. Inpatients typically received more intensive treatments, including antidepressant combinations, augmentation strategies, electroconvulsive therapy, psychological treatment, occupational therapy, nursing, exercise therapy, physiotherapy, art therapy, and social support and interventions. Therefore, our study sought to provide new information in an acute inpatient environment where patients were undergoing intense treatments. Our study was also a structured observational design using quantitative and qualitative data, which no previous studies have done. By favouring an observational design over adherence to a treatment algorithm (Russell and Joseph, 1988), there was scope to retrospectively examine the influence of the treating care team's management decisions on subjective and observer-based ratings of mood and cognition. Some previous studies hypothesised that patterns of change in mood and cognitive functions could be better measured by comparing an intervention arm and a control arm undergoing similar algorithm treatments. Our study elicited new information in an environment reflective of everyday practice. It also raised the question of whether a formal assessment of personality enhances the diagnosis of a personality disorder and differentiates it from MDD, as well as judgements on the presence of remission and the influence of enduring traits on future management. As it stands, and in its typical use in isolation, the current diagnostic criteria for MDD in the ICD-10 (WHO, 1992a) and the DSM-5 (APA, 2013) do not include personality disorder–related symptoms or behaviours. Analysing the data generated from our study permitted the identification of personality disorder–associated symptoms in MDD that may be used as additional diagnostic criteria following further research.

The strengths of our study rest in its observational design and conduct in an inpatient setting, with assessments of mood and neurocognitive function conducted and concluded before determining a diagnosis with respect to the presence of a personality disorder. We ensured that methods of data collection (both quantitative and qualitative data) were identical and consistent over time across the three wards. Participant attrition (dropout) rates were minimal in our data collection.

Our study has several limitations. Patients were not assessed immediately on admission but at a time deemed appropriate by the inpatient care team, although in all cases it was within 72 hours of admission. Bias may therefore have been introduced to the study if there were differences in the rapidity of referral to the research team or differences in the likelihood of admission over weekend periods between those with MDD and those with personality disorders. Rating scale data were collected at a time deemed clinically appropriate rather than

at a fixed point in the day; this added variability given the diurnal variations in mood associated with depression. While significantly different, those with a personality disorder had shorter admissions, and the lower rate of subjective improvement may reflect the lag between objective and subjective improvements that is common in the treatment of depression.

The qualitative methods we used increased the depth of understanding of depressive and personality disorders in the acute setting. Weakness of the qualitative methods included less generalisability of the qualitative data obtained. Our study mainly targeted acute inpatient wards, and we acknowledge that our qualitative findings could be limited for the inpatient setting. However, our study helps develop new hypotheses that can be further tested in that setting. The qualitative data gathered were mainly subjective reporting and depended on a variety of factors, including training level of the staff member, number of years of experience and occupation of staff member (e.g., nursing, occupational therapist).

In terms of staff observations, we aimed to minimise any disruptions to the care that the patients received during their inpatient stay. It is well reported that staff observations can lead to disruptions of patients' sleep (paradoxical effect of causing insomnia), deterioration in mental health and incidents of aggression (Ray, Perkins and Meijer, 2011; Kamphuis *et al*., 2012; Chu, 2016). We did not ask any staff to specifically observe their patients' behaviour in order to put that across in the clinical records or staff questionnaire for the purpose of our study. We extracted the data from the clinical records retrospectively as it was entered by staff. Another limitation of our qualitative data was that the coding was only done by the principal investigator. Viera and Garrett (2005) investigated the interobserver agreement: the kappa statistic, which has been used in some qualitative studies involving personality disorder patients (Day, Townsend and Grenyer, 2020). In this method, once the data analysis was completed by the first author, the second author completed the coding for some data. Inter-rater reliability was then calculated using Cohen's kappa coefficient to explore the similarity of the nodes (codes) identified by the two authors. This method would establish a very high level of agreement between the authors for the codes they chose for the qualitative study.

Although we diagnosed the type of personality disorder using the SCID-5-PD, limitations have been identified in diagnosing personality disorders using current classification systems, including the ICD-10 and the DSM-5. Those limitations include instability and changes in diagnostic terms used to describe personality disorders over time, validity issues with

(personality disorder) diagnostic categories, a lack of specificity in the definition of personality disorder itself, and other comorbid disorders associated with personality disorders (Skodol, 2012). Despite these diagnostic limitations, we proceeded with the currently available diagnostic rating tools to diagnose personality disorders in our study.

MDD and personality disorders are not homogenous groups. In an analysis of the 'Sequenced Treatment Alternatives to Relieve Depression' study (Fava *et al*., 2003; Rush *et al*., 2004), more than 1,000 unique symptom clusters were observed in patients diagnosed with MDD (Fried and Nesse, 2015). The 12 different personality disorders have been more or less established as separate entities, have different postulated origins and courses, and have different associations with risk for transient adverse mental states. Given the heterogeneity, it can be argued that a sample size of 27 in the personality disorder group was sufficient to cover all personality disorders. Heterogeneity would therefore be expected, but in the personality disorder group in our study, more than half had a single personality disorder type (borderline personality disorder).

Three patients in the MDD group had features of psychosis according to the structured interview conducted at discharge. This subgroup was too small to justify a formal comparison, but we recognised this as a limitation that may have influenced their engagement in the study and the rating scale scores. These patients were assessed at discharge after remission of psychotic features (discharge assessments). However, psychotic features were not in remission at the time of the admission assessments. Given this, these MDD patients with psychosis were not assessed immediately on admission but at a time deemed appropriate by the inpatient care team, although in all cases it was within the allocated time for admission assessments, as per study protocol.

Data on the number of previous admissions were not collected, which we recognise as a limitation of our study. Any previous admissions of these patients to the unit may increase their familiarity with the unit and the staff, which could act as a confounding variable and affect how they respond or perform on the tests.

We did not make a diagnosis upon entry to the study to avoid this influencing the rating scales. The design was such that groups were generated retrospectively following discharge diagnosis. We applied structured clinical interviews to assess MDD and personality disorders. To strengthen our assessment, we included interviewer-rated assessments of personality (SCID-5-PD) and self-reported personality questionnaires (self-reported screening

personality questionnaire; SCID-5-SPQ; First *et al*., 2015c). A self-reported personality questionnaire was used to reduce the time of the clinical interview, and this was completed by the patients prior to undergoing the SCID-5-PD objective assessment. The SCID-5-SPQ was completed by all 60 patients in our study, followed by the SCID-5-PD interview. Friborg *et al*. (2014) showed higher comorbidity of personality disorders in mood disorders (MDD, dysthymia and bipolar disorder) when personality disorder diagnoses were based on self-reported measures versus clinical interviews. Personality assessments often rely on self-report measures, and overreliance on self-reported information has been criticised (Kolar, Funder and Colvin, 1996; Vazire, 2006; Connelly and Ones, 2010). In our study, given that the subjective reporting of symptoms in the BDI and CFQ was higher in the personality disorder group than in the MDD group, it is arguable whether the personality disorder group would subjectively score high on the self-reported personality screening tools. However, the SCID-5-SPQ does not use scoring that determines the severity of symptoms; instead, the questions correspond directly to the SCID-5-PD. The interviewer can then explore the answers (given by the patient in the SCID-5-SPQ) at the structured interview (SCID-5-PD) and determine the presence or absence of the symptoms (SCID-5-PD symptoms have a range of none, subthreshold and present). Future research could explore whether personality disorder patients who score high subjectively on the BDI and the CFQ also score high on other personality screening questionnaires commonly used, such as the Standardised Assessment of Personality Abbreviated Scale (Moran *et al*., 2003). Morse and Pilkonis (2007) advised multiple assessments when relying on self-reports to diagnose personality disorders.

Cognitive deficits in MDD and personality disorder have been reported across a range of cognitive domains and vary in factors such as the severity of the episode and the number of episodes. We have reported assessing neurocognitive functions but have only used the CFQ and the DSST. These are only a few neurocognitive function tests that assess a range of neurocognitive functions, but not the entire spectrum of neurocognition. Therefore, we acknowledge that the entire spectrum of neurocognition was not assessed.

We only used one tool—the CTQ—to obtain subjective reporting of childhood trauma in MDD and personality disorders. It is acknowledged that a history of childhood trauma would be best assessed using actual cohort records of childhood trauma in longitudinal studies (Church *et al*., 2017). However, Widom *et al*. (2005) compared cohort records of childhood trauma in longitudinal studies v. self-reported measures of childhood trauma and showed good validity of the self-reported measures. Spinhoven *et al*. (2014) recommended screening

using the CTQ first followed by a semi-structured interview to assess childhood trauma given the higher sensitivity of self-reports like the CTQ. Agreement between prospective and retrospective measures of childhood maltreatment was higher in studies that used interviews rather than questionnaires to elicit retrospective recall (Baldwin *et al.*, 2019). We did not use a minimisation/denial scale (with the CTQ) in order to minimise the under-reporting of trauma.

One design issue was that patient selection and recruitment could lead to selection bias. Identification of suitable patients was undertaken by the inpatient staff of the three acute adult wards at the CNTW NHS Foundation Trust. Referring non-eligible patients or not referring eligible patients may affect the study results. The research team made contact with each patient once it was deemed appropriate by the inpatient staff. The team did not screen notes to identify patients at the beginning. To minimise bias, some research team members were also part of a clinical team that visited the wards frequently and attended ward rounds and 72-hour formulation meetings to identify potential patients for the study. Participants for our study were recruited from a single hospital. It can be argued that the sample may not represent inpatients from other geographic areas which may limit the generalisability of the results.

Data were collected around the time of admission and discharge. We noted that the BDI, HAMD, CGI, CFQ and DSST scores could vary depending on the time administered. Some patients took some time to complete the initial BDI and the CFQ questionnaires following admission. This was allowed ethically given that some patients were in distress around the time of admission to the ward.

We used the assessment tools correlating to each other (CFQ and BDI). Wagle, Berrios and Ho (1999) investigated the performance of the CFQ in three patient samples — organic (n = 209), mixed (n = 115) and functional (n = 322) — and found that the CFQ score was significantly correlated with the BDI in the organic and functional patient groups. Significant moderate cognitive deficits in executive function and attention (Cohen's d ranging from −0.52 to −0.61) and nonsignificant small/moderate cognitive deficits in memory (Cohen's d ranging from −0.22 to −0.54) were found to persist in patients whose depressive symptoms had remitted (Rock *et al.*, 2014). In our study, a repeat of the cognitive testing was conducted closer to discharge; therefore, patients who were in remission from their depressive disorder would have continued to report cognitive deficits similar to Rock *et al.*'s (2014) study.

Some ethical challenges in the methodology were discussed with the Research Ethics Committee (REC) prior to the committee's approval. Appropriate measures were taken to minimise these challenges. First, we decided that detention under the *Mental Health Act* would not preclude participation in the study. If we excluded this group, we would not be able to capture a representative sample, which would lead to bias. We deemed that it was possible to be detained but to retain capacity to decide to participate in research. Patients were not enrolled in the study if they were judged to be lacking in capacity in the initial assessment and follow-up assessments. Thus, we excluded two patients who were referred to the study but found to be lacking in capacity. It was reasonable to assume that consent given at the initial interview would be valid throughout this period. Nevertheless, those attending subsequent assessments were asked to confirm that they continued to consent to be involved and that they had capacity to make such decisions. Given patients' vulnerability, severity of mental illness and comorbidity in an acute psychiatry care setting, it is vital to ensure that capacity assessments and informed consent procedures for research meet ethical standards and support the autonomy of participants at the same time (Hickman, Prochaska and Dunn, 2011).

Another issue was whether, through their engagement with the research, a patient might be found to have a previously undiagnosed ailment. For patients in particular, clinical interviews and self-assessments could reveal different diagnoses. When a potential different diagnosis was detected, the research team liaised with the patient's treating psychiatrist. In anticipation of such events, enrolment was likely to be considered advantageous to the patient because appropriate treatment may be initiated early. We were able to discuss such matters during the process of obtaining consent and at the request of patients at any stage of the study.

Another challenge in conducting the study was that some patients were expecting us to modify their treatment on the basis of our findings. We were some way from being able to guide treatment decisions on the basis of our findings, and this was expressly not an aim of the study. This was made clear from the outset, both explicitly in the patient information sheet and then reiterated when obtaining consent.

We also identified potential risks and burdens for research participants, especially because we asked patients to complete the personality questionnaire and the CTQ. In some cases, this resulted in participants recalling periods of emotional and psychological distress. All participants who were willing to complete the questionnaires were supported and given the

opportunity to reflect on their recollections, or to simply skip the questionnaires if they felt that they were too intrusive. The questionnaires were sensitively worded, are extensively used in psychological and psychiatry research, and cover topics that are routinely asked about in a standard personality assessment. All patients had the opportunity to withdraw. Some patients required additional time to complete the questionnaires, and this was provided. There were no intrusive interventions.

We did not anticipate recruiting patients who did not adequately understand verbal explanations or written information in English. The rating scales and psychological tests used in our study were validated for English speakers only. We recognised this as unavoidable bias in the sample. The limitation in the literature search was the likelihood of publication bias because only English-language articles were used.

We stringently adhered to the study inclusion and exclusion criteria in terms of patient selection. Patients who were enrolled in the study with a diagnosis of depression would be at risk of developing treatment-associated mania or hypomania. Saatcioglu *et al*. (2011) suggested that antidepressant-associated mania/hypomania are different disorders. Atypical depressive features in the first episode, cyclothymic and hyperthymic temperaments were found to be frequent in the switching group (Madurai, Rao and Nammalvar, 1977; Saatcioglu *et al*., 2011). In our study, patients' past notes were reviewed prior to enrolment to exclude patients with mood-cycling disorders. None of the patients included in our study showed manic switching.

Two different assessors performed the discharge HAMD, the CGI and the SCID. The HAMD and the CGI assessors were blind to the SCID ultimate diagnoses. This was implemented to minimise the predisposition of the HAMD and BDI marking contingent upon the diagnosis. Although the SCID assessors did not reveal the diagnosis, discussions that took place among the multidisciplinary staff members at the ward rounds would have prejudiced the assessors' HAMD and the BDI recording.

In our study, we applied diagnostic tools (SCID) that used the DSM-5 to represent the categorical perspective that MDD and personality disorders were qualitatively distinct clinical syndromes. In the dimensional perspective, personality disorders represent maladaptive variants of personality traits that merge imperceptibly into normality and into one another (APA, DSM-5 desk reference).

8.3 Area for Future Research

Previous literature has identified that the affective and neuropsychological functioning of depressed patients improves after hospitalisation, and the outcome is poorer in the personality disorder group. An area for future novel research will be to investigate the development of particular neuropsychological dimensions over time between the MDD and personality disorder groups and their associations with changes in mood. These could point towards the cognitive mechanisms maintaining both conditions.

The retrospective group assignment we used in our study decreased the bias resulting from diagnosing a personality disorder during an acute depressive episode. Future studies should aim to demonstrate the personality dimension as stable (same upon admission and discharge) and the acute illness as transient (different between admission and discharge). This comparison would add much credibility to MDD and personality disorders truly being separate constructs rather than an artifact of some participants reporting more (subjective) symptoms altogether. Future research could examine stability in various domains in those with established diagnoses of both MDD and personality disorders. Our aim was to conduct an observational study; thus, we ensured the research team did not influence the decision-making of the treating care team. We did not use tools to assess personality dimensions (e.g., NEO FFI) throughout, similar to other community studies (Santor, Bagby and Joffe, 1997; Kool *et al*., 2003; De Fruyt *et al*., 2006; Tang *et al*., 2009; Hakulinen *et al*., 2015). Our recruited patient group was in the acute phase of the illness, and we were faced with practical difficulties in requesting them to complete several added questionnaires. Previous studies conducted in a community setting to examine personality dimensions included a relatively stable population compared with an acute inpatient setting.

Investigating how to differentiate MDD from personality disorders warrants further research. Previous studies have reported that the combination of MDD and borderline personality disorder is particularly problematic because these patients are at increased risk for severe suicide attempts and death when compared with depressed patients without a personality disorder diagnosis (Corbitt *et al*., 1996).

Our study also included a narrative research element that generated new hypotheses for future prospective research in the relevant subject areas. Changes in personality dimensions between inpatients and outpatients with a diagnosis of MDD are an area for further research. It would also be of interest to study subjective and observer-based discrepancies between the BDI and

the HAMD in MDD and personality disorder groups in a community sample. Likewise, exploring the subjective and objective neurocognitive profile using the CFQ and the DSST could be conducted in a community sample. It would also be interesting to determine the reasons behind subjective higher reporting of childhood trauma in the CTQ for personality disorder patients compared with MDD patients despite previous literature showing that both conditions are associated with childhood trauma. When differentiating MDD and personality disorder (with or without comorbidity) in an inpatient or community setting, it is beneficial to report and develop new theories based on what staff observe. Qualitative research can be used for this purpose. We further propose exploring our qualitative data in a larger population and exploring staff views on diagnosing a personality disorder in an MDD patient. Qualitative research methods do not always use prior hypothesis testing and are used for hypothesis generation, including new theories (Sullivan and Sargeant, 2011). Therefore, our qualitative data are useful in developing new themes depending on what happens in a new environment for patients (e.g., inpatient wards).

8.4 Conclusions

In this study, patients with MDD and those with a personality disorder presenting with depressive symptoms differed in profile on subjective and objective ratings of mood and neurocognitive function. A higher observer clinician rating of depressive symptoms on the HAMD was noted in the MDD group, while higher subjective reporting of depressive symptoms on the BDI was observed in those with a personality disorder diagnosis. An objective assessment of neurocognitive function demonstrated improvements over the course of inpatient admission in both the MDD and personality disorder groups, but those in the personality disorder group continued to report high levels of subjective cognitive deficits at discharge, while the MDD group reported subjective improvements. The profiles of objective and subjective ratings of mood and neurocognitive function on admission and at discharge may help to differentiate those with a personality disorder from those with MDD alone. This warrants further research with a view to guiding management strategies.

Our research explored methods for assessing and diagnosing MDD and personality disorders in an inpatient setting at a time when clinical practice did not always include a personality assessment for depressed patients. Current diagnostic criteria (DSM-5, ICD-10) for MDD do not include personality characteristics. When symptoms of both conditions were present, our study explored assessment methods to arrive at a precise diagnosis. Ultimately, this would

target the appropriate treatment to those who need it while lessening unhelpful admissions for those with a primary personality disorder diagnosis. We also noted that the LOS was shorter for patients with personality disorders compared with MDD, and this underpins the consensus among psychiatrists that patients with personality disorders should have a shorter length of inpatient stay.

Significantly higher subjective reporting of childhood trauma was observed in patients with personality disorders compared with MDD in some trauma categories. Overdiagnosis of personality disorders by multidisciplinary staff was observed in the inpatient setting — that is, diagnosing a personality disorder for a patient with MDD without a personality disorder. Our findings suggest that larger-scale studies should be conducted to determine whether objective–subjective discrepancy scores in domains such as mood and cognition could be useful tools in aiding the differentiation of mood disorders from personality disorders. Further, our study discovered several subjective reporting and observer-based behaviours recognised by staff and recorded in the clinical records that the MDD and personality disorder patients presented with during their admission. We felt that our objectives were met by identifying qualitatively (clinical records and staff questionnaire) and quantitatively (mood, neurocognition and childhood trauma) the factors that predict diagnosis at discharge for inpatients presenting with depressive symptoms. Our findings would have a direct benefit for inpatient teams, patients and their families in understanding personality dimensions during their inpatient depressive episode management.

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APPENDIX A

Table A.1: Traits required to diagnose (as per criteria A) personality disorders according to DSM-5 personality disorder diagnostic categories

Borderline personality disorder: five (or more) below are required.	**Narcissistic personality disorder: five (or more) below are required.**
1. Frantic efforts to avoid real or imagined abandonment. 2. A pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation. 3. Identity disturbance: markedly and persistently unstable self-image or sense of self. 4. Impulsivity in at least two areas that are potentially self-damaging. 5. Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour. 6. Affective instability due to a marked reactivity of mood. 7. Chronic feelings of emptiness. 8. Inappropriate, intense anger or difficulty controlling anger. 9. Transient, stress-related paranoid ideation or severe dissociative symptoms.	1. Has a grandiose sense of self-importance (e.g., exaggerates achievements and talents, expects to be recognized as superior without commensurate achievements). 2. Is preoccupied with fantasies of unlimited success, power, brilliance, beauty, or ideal love. 3. Believes that he or she is 'special' and unique and can only be understood by, or should associate with, other special or high-status people (or institutions). 4. Requires excessive admiration. 5. Has a sense of entitlement (i.e., unreasonable expectations of especially favourable treatment or automatic compliance with his or her expectations). 6. Is interpersonally exploitative (i.e., takes advantage of others to achieve his or her own ends). 7. Lacks empathy: is unwilling to recognize or identify with the feelings and needs of others. 8. Is often envious of others or believes that others are envious of him or her. 9. Shows arrogant, haughty behaviours or attitudes.
Paranoid personality disorder: four (or more) below are required.	**Schizotypal personality disorder: five (or more) below are required.**
1. Suspects, without sufficient basis, that others are exploiting, harming, or deceiving him or her. 2. Is preoccupied with unjustified doubts about the loyalty or trustworthiness of friends or associates. 3. Is reluctant to confide in others because of unwarranted fear that the information will be used maliciously against him or her.	1. Ideas of reference (excluding delusions of reference). 2. Odd beliefs or magical thinking that influences behaviour and is inconsistent with subcultural norms (e.g., superstitiousness, belief in clairvoyance, telepathy, or 'sixth sense'; in children and adolescents, bizarre fantasies or preoccupations).

4. Reads hidden demeaning or threatening meanings into benign remarks or events. 5. Persistently bears grudges (i.e., is unforgiving of insults, injuries, or slights). 6. Perceives attacks on his or her character or reputation that are not apparent to others and is quick to react angrily or to counterattack. 7. Has recurrent suspicions, without justification, regarding fidelity of spouse or sexual partner.	3. Unusual perceptual experiences, including bodily illusions. 4. Odd thinking and speech (e.g., vague, circumstantial). 5. Suspiciousness or paranoid ideation. 6. Inappropriate or constricted affect. 7. Behaviour or appearance that is odd, eccentric, or peculiar. 8. Lack of close friends or confidants other than first-degree relatives. 9. Excessive social anxiety that does not diminish with familiarity and tends to be associated with paranoid fears rather than negative judgments about self.
Antisocial personality disorder: three (or more) below are required. 1. Failure to conform to social norms with respect to lawful behaviours, as indicated by repeatedly performing acts that are grounds for arrest. 2. Deceitfulness, as indicated by repeated lying, use of aliases, or conning others for personal profit or pleasure. 3. Impulsivity or failure to plan ahead. 4. Irritability and aggressiveness, as indicated by repeated physical fights or assaults. 5. Reckless disregard for safety of self or others. 6. Consistent irresponsibility, as indicated by repeated failure to sustain consistent work behaviour or honour financial obligations. 7. Lack of remorse, as indicated by being indifferent to or rationalizing having hurt, mistreated, or stolen from another.	**Histrionic personality disorder: five (or more) below are required.** 1. Is uncomfortable in situations in which he or she is not the centre of attention. 2. Interaction with others is often characterized by inappropriate sexually seductive or provocative behaviour. 3. Displays rapidly shifting and shallow expression of emotions. 4. Consistently uses physical appearance to draw attention to self. 5. Has a style of speech that is excessively impressionistic and lacking in detail. 6. Shows self-dramatization, theatricality, and exaggerated expression of emotion. 7. Is suggestible (i.e., easily influenced by others or circumstances). 8. Considers relationships to be more intimate than they actually are.
Dependent personality disorder: five (or more) below are required. 1. Has difficulty making everyday decisions without an excessive amount of advice and reassurance from others.	**Obsessive-compulsive personality disorder: four (or more) below are required.** 1. Is preoccupied with details, rules, lists, order, organization, or schedules to the extent that the major point of the activity is lost. 2. Shows perfectionism that interferes with task completion (e.g., is unable to complete a project

2. Needs others to assume responsibility for most major areas of his or her life. 3. Has difficulty expressing disagreement with others because of fear of loss of support or approval. 4. Has difficulty initiating projects or doing things on his or her own (because of a lack of self-confidence in judgment or abilities rather than a lack of motivation or energy). 5. Goes to excessive lengths to obtain nurturance and support from others, to the point of volunteering to do things that are unpleasant. 6. Feels uncomfortable or helpless when alone because of exaggerated fears of being unable to care for himself or herself. 7. Urgently seeks another relationship as a source of care and support when a close relationship ends. 8. Is unrealistically preoccupied with fears of being left to take care of himself or herself.	because his or her own overly strict standards are not met). 3. Is excessively devoted to work and productivity to the exclusion of leisure activities and friendships (not accounted for by obvious economic necessity). 4. Is overconscientious, scrupulous, and inflexible about matters of morality, ethics, or values (not accounted for by cultural or religious identification). 5. Is unable to discard worn-out or worthless objects even when they have no sentimental value. 6. Is reluctant to delegate tasks or to work with others unless they submit to exactly his or her way of doing things. 7. Adopts a miserly spending style toward both self and others; money is viewed as something to be hoarded for future catastrophes. 8. Shows rigidity and stubbornness.
Avoidant personality disorder: four (or more) below are required. 1. Avoids occupational activities that involve significant interpersonal contact because of fears of criticism, disapproval, or rejection. 2. Is unwilling to get involved with people unless certain of being liked. 3. Shows restraint within intimate relationships because of the fear of being shamed or ridiculed. 4. Is preoccupied with being criticized or rejected in social situations. 5. Is inhibited in new interpersonal situations because of feelings of inadequacy. 6. Views self as socially inept, personally unappealing, or inferior to others. 7. Is unusually reluctant to take personal risks or to engage in any new activities because they may prove embarrassing.	**Schizoid personality disorder: four (or more) below are required.** 1. Neither desires nor enjoys close relationships, including being part of a family. 2. Almost always chooses solitary activities. 3. Has little, if any, interest in having sexual experiences with another person. 4. Takes pleasure in few, if any, activities. 5. Lacks close friends or confidants other than first-degree relatives. 6. Appears indifferent to the praise or criticism of others. 7. Shows emotional coldness, detachment, or flattened affectivity.

APPENDIX B: DATA DISTRIBUTION TABLES

Table B.1: Descriptive data for LOS for the diagnostic groups

Diagnostic group	Statistic		Value	SE
MDD group	Mean		41.50	8.559
	95% confidence interval for mean	Lower bound	23.79	
		Upper bound	59.21	
	SD		41.933	
	Interquartile range (IQR)		33	
Personality disorder group	Mean		24.33	3.953
	95% confidence interval for mean	Lower bound	16.21	
		Upper bound	32.46	
	SD		20.543	
	IQR		16	
DBD group	Mean		35.5	6.540
	95% confidence interval for mean	Lower bound	22.26	
		Upper bound	48.90	
	Std. deviation		37.56	
	IQR		30	

Table B.2: Normality testing and statistical test used for the BDI and the HAMD

Data	Kolomogorov–Smirnov, *p*	Shapiro–Wilk, *p*	Data distribution	Statistical test
DBD group, admission				
BDI	0.20	0.33	Normally distributed	Parametric
HAMD	0.20	0.78	Normally distributed	Parametric
DBD group, discharge				
BDI	0.01	0.02	Not normally distributed	Nonparametric
HAMD	0.01	0.02	Not normally distributed	Nonparametric
Personality disorder group, admission				
BDI	0.20	0.31	Normally distributed	Parametric
HAMD	0.20	0.46	Normally distributed	Parametric
Personality disorder group, discharge				
BDI	0.07	0.08	Normally distributed	Parametric
HAMD	0.20	0.51	Normally distributed	Parametric
MDD group, admission				
BDI	0.20	0.51	Normally distributed	Parametric
HAMD	0.20	0.58	Normally distributed	Parametric
MDD group, discharge				
BDI	0.02	0.01	Not normally distributed	Nonparametric
HAMD	0.20	0.22	Normally distributed	Parametric

Table B.2 summarises the normality testing results and the statistical tests used for the BDI and the HAMD. If $p > 0.05$ (not statistically significant), the data were deemed to be normally distributed.

Table B.3: Normality testing and statistical test used for the CGI

Data	Kolomogorov –Smirnov, *p*	Shapiro–Wilk, *p*	Data distribution	Statistical test
DBD group: admission				
CGI severity of illness	0.001	0.001	Not normally distributed	Nonparametric
DBD group: discharge				
CGI severity of illness	0.001	0.003	Not normally distributed	Nonparametric
CGI global improvement	0.001	0.001	Not normally distributed	Nonparametric
Personality disorder group: admission				
CGI severity of illness	0.001	0.001	Not normally distributed	Nonparametric
Personality disorder group: discharge				
CGI severity of illness	0.001	0.002	Not normally distributed	Nonparametric
CGI global improvement	0.002	0.009	Not normally distributed	Nonparametric
MDD group admission				
CGI severity of illness	0.001	0.001	Not normally distributed	Nonparametric
MDD group discharge				
CGI severity of illness	0.007	0.01	Not normally distributed	Nonparametric
CGI global improvement	0.004	0.001	Not normally distributed	Nonparametric

Table B.4: Normality testing and statistical test used for the CFQ according to diagnostic groups

Data	Kolomogorov–Smirnov, *p*	Shapiro–Wilk, *p*	Data distribution	Statistical test
DBD group				
CFQ: admission	0.20	0.54	Normally distributed	Parametric
CFQ: discharge	0.20	0.05	Normally distributed	Parametric
Personality disorder group				
CFQ: admission	0.20	0.08	Normally distributed	Parametric
CFQ: discharge	0.20	0.49	Normally distributed	Parametric
MDD group				
CFQ: admission	0.20	0.88	Normally distributed	Parametric
CFQ: discharge	0.20	0.22	Normally distributed	Parametric

Table B.5: Normality testing and statistical test used for the DSST according to diagnostic groups

Data	Kolomogorov–Smirnov, *p*	Shapiro–Wilk, *p*	Data distribution	Statistical test
DBD group				
DSST: admission	0.20	0.41	Normally distributed	Parametric
DSST: discharge	0.20	0.60	Normally distributed	Parametric
Personality disorder group				
DSST: admission	0.20	0.21	Normally distributed	Parametric
DSST: discharge	0.20	0.60	Normally distributed	Parametric
MDD group				
DSST: admission	0.19	0.57	Normally distributed	Parametric
DSST: discharge	0.18	0.69	Normally distributed	Parametric

Table B.6: Normality testing and statistical test used for the CTQ according to diagnostic groups

Data	Kolomogorov–Smirnov, *P*	Shapiro–Wilk, *P*	Data distribution	Statistical test
DBD group				
Emotional abuse	0.001	0.001	Not normally distributed	Non-parametric
Physical abuse	0.001	0.001	Not normally distributed	Non-parametric
Sexual abuse	0.001	0.001	Not normally distributed	Non-parametric
Emotional neglect	0.002	0.001	Not normally distributed	Non-parametric
Physical neglect	0.001	0.001	Not normally distributed	Non-parametric
Personality disorder group				
Emotional abuse	0.19	0.01	Not normally distributed	Non-parametric
Physical abuse	0.02	0.001	Not normally distributed	Non-parametric
Sexual abuse	0.001	0.001	Not normally distributed	Non-parametric
Emotional neglect	0.20	0.05	Not normally distributed	Non-parametric
Physical neglect	0.001	0.001	Not normally distributed	Non-parametric
MDD group				
Emotional abuse	0.002	0.001	Not normally distributed	Non-parametric
Physical abuse	0.001	0.001	Not normally distributed	Non-parametric
Sexual abuse	0.001	0.001	Not normally distributed	Non-parametric
Emotional neglect	0.01	0.003	Not normally distributed	Non-parametric
Physical neglect	0.02	0.001	Not normally distributed	Non-parametric

Table B.7: Interpretation of the Pearson's correlation coefficients (interpretation of *r* values; Dancey and Reidy, 2007; Akoglu, 2018)

Positive correlation coefficient		Negative correlation coefficient	
+1	Perfect	−1	Perfect
+0.9	Strong	−0.9	Strong
+0.8	Strong	−0.8	Strong
+0.7	Strong	−0.7	Strong
+0.6	Moderate	−0.6	Moderate
+0.5	Moderate	−0.5	Moderate
+0.4	Moderate	−0.4	Moderate
+0.3	Weak	−0.3	Weak
+0.2	Weak	−0.2	Weak
+0.1	Weak	−0.1	Weak
0	Zero	0	Zero

APPENDIX C: QUALITATIVE DATA FROM CLINICAL RECORDS

Table C.1: Qualitative data full list of coding, including themes, subthemes and codes

Themes, subthemes, codes	MDD group	Personality disorder group	Exclusion group
1: Altercations during ward stay			
2: Aggression hostile	7	10	7
3: Altercation conflict disgruntled, rude, dismissive abrupt, disregarded with staff	18	60	12
4: Altercations with family or partner	4	6	4
5: Altercations with patients	5	17	1
6: Anger management issues were recorded by the staff	5	7	4
7: Apologise staff by the patient for his or her behaviours or comments	7	17	4
8: Damaging property	2	6	1
9: Demanding of staff attention and time	0	8	0
10: Inappropriate amusement of other patients' distress in the ward	0	2	0
11: Not happy of medication being stopped or reduced	1	2	0
12: Overinvolved in care of other patients	0	8	0
13: Patient contacting family and friends for their involvement in treatment	0	10	0
14: Patient expressing unhappiness about a patient or patients	1	9	1
15: Patient expressing unhappiness about a staff member	1	9	0
16: Patient expressing unhappiness about family or family member	3	1	3
17: Patient expressing unhappiness about the care in the ward	3	15	0
18: Patient is found in another patient room or vice-versa	0	3	0
19: Patient making derogatory comments about the ward or staff or team	1	19	1
20: Staff contradicts what the patient was saying or behaving	4	9	0
21: Staff record as conflicting messages from the patient	1	4	0
22: Staff record as more of behavioural or manipulative	1	5	2
23: Capacity			
24: Has capacity	14	19	8
25: No capacity for consent to treatment	1	0	1

26: Depression and anxiety objective			
27: Anxiety symptoms objective record			
28: Anxious mood	5	2	5
29: Found on the floor fainted	0	0	1
30: Health anxiety somatic	0	1	1
31: Observable tremor or shaking	8	0	2
32: Patient is agitated	15	10	6
33: Patient is anxious	45	32	6
34: Depressive objective record			
35: Anhedonia	10	1	2
36: Concentration poor or difficult or cognitive issues	2	1	0
37: Energy fluctuating	0	2	1
38: Energy low	9	3	0
39: Eye contact limited or variable or no	28	8	1
40: Flashbacks objective record	2	1	1
41: Functional decline	4	1	4
42: Grief	0	0	0
43: Guilt	4	3	0
44: Hopelessness	18	5	3
45: Irritable and anger	8	10	2
46: Labile mood (emotional instability)	5	18	4
47: Low confidence	2	0	0
48: Low flat mood	72	54	13
49: Low self-esteem	7	4	1
50: Motivation poor	2	0	0
51: Negative thinking (negative cognitions)	17	5	1
52: Perplexed mood	6	0	0
53: Poor appetite or eating difficulties	7	3	1
54: Poor concentration	10	2	1
55: Poor sleep or sleeping difficulties	26	18	7
56: Psychomotor retardation	6	0	0
57: Somatic symptoms	3	1	3
58: Speech			
59: Low rate	5	1	0
60: Low tone	16	3	0
61: Low volume	14	3	0

62: Paucity of speech delayed	7	0	0
63: Rapport minimal or poor	4	0	0
64: Staff record as depressed or staff diagnostic impression of depression	25	12	3
65: Tearful	17	14	8
66: Tiredness	1	0	0
67: Unkempt appearance	14	16	6
68: Weight loss objective evidence or weight changes	3	2	0
69: Depression anxiety subjective complaints			
70: Anxiety symptoms subjective complaints			
71: Agitation subjective complaint	3	1	0
72: Feeling anxious of going out from the ward	9	4	2
73: Patient reports feeling anxious	40	39	15
74: Depressive symptoms subjective complaints			
75: Empty feeling	1	0	0
76: Energy levels up and down	0	3	2
77: Energy low	6	8	1
78: Functional decline is reported by the patient	5	4	0
79: Grief	1	0	0
80: Guilt	7	10	1
81: Hopelessness	16	17	5
82: Irritability or anger	3	15	5
83: Labile mood	0	12	3
84: Lacking in enjoyment (anhedonia)	2	9	0
85: Low appetite	3	11	1
86: Low confidence or esteem	6	4	2
87: Low mood	46	50	13
88: Memory poor and difficulties	2	1	0
89: Negative views and negative views about the future	10	3	0
90: Poor sleep	29	37	10
91: Reduced concentration	5	4	0
92: Somatic hypochondriac complaints	7	0	0
93: Tiredness	4	3	0
94: Trauma related symptoms such as flashbacks memories abuser voice hearing	3	7	3
95: Weight loss or weight changes	6	5	2

96: Discharge			
97: Decline overnight leave towards the process of discharge	0	1	0
98: Initially wanting discharge but later agreed to stay	6	9	1
99: Once discharge decision was made, patient leaving the ward without completing discharge paperwork	0	2	0
100: Patient expresses unwillingness for discharge	3	25	2
101: Patient expressing anxieties about discharge	7	15	0
102: Patient expressing self-harm thoughts about discharge or self-harm when planning discharge	1	10	1
103: Patient is expressing requesting discharge doesn't like in the ward	25	14	8
104: Patient is hopeful happy keen improved agree for discharge	28	3	10
105: Food and fluid intake			
106: Binging and purging behaviours	0	2	0
107: Food and fluid intake poor for long periods	6	5	4
108: Hospital stay			
109: Attempts to leave the ward	1	2	0
110: Absence without leave	4	6	0
111: Happy or wishes to be in the hospital	3	7	1
112: Noise level disruption in the ward difficult	12	8	2
113: Patient agrees to stay in the ward	7	5	0
114: Patient reports feeling safe in the ward	10	4	4
115: Patient reports feeling unsafe in the ward	2	4	0
116: Unclear of ward stay	5	7	7
117: Insight			
118: limited or poor insight	2	5	2
119: Patient has insight	15	13	7
120: Patient has no insight	0	1	0
121: Interactions in the ward			
122: No or minimal engagement with fellow patients	20	8	3
123: No or minimal engagement with staff	33	26	6
124: Patient is appreciative of the work done by staff	11	8	1
125: Pleasant on interactions with staff	51	51	10
126: Observations			
127: Appearing confused in the ward	7	0	0
128: Low profile in the ward	21	12	3

129: Not evident in the ward	0	2	0
130: Spending most of the time in the bedroom or bed	09	7	1
131: Perceptual disturbances			
132: Objective record			
133: Distressing voice hearing experience	1	1	0
134: Elementary hallucinations	0	1	0
135: Hallucinations	2	4	0
136: Not distressed	0	1	0
137: Pseudo-hallucinations recorded	3	6	0
138: Responding to unseen stimuli observed by staff	5	0	0
139: True hallucinations recorded	1	0	0
140: Subjective complaints			
141: Believes it as not real	1	0	0
142: Believes it as real	1	2	0
143: Both inside and outside mind	0	1	0
144: Distressing	6	0	0
145: Feeling dissociated	0	1	0
146: Inside mind or head	5	5	0
147: Outside mind or head	2	2	0
148: Reports perceptual disturbances hearing voices	22	19	1
149: Unable to elaborate	1	0	0
150: Unsure real or not	1	0	0
151: Unsure where it is coming from	0	0	0
152: Voices asking the patient to harm themselves or harm others	5	0	0
153: Protective factors			
154: No protective factors identified by the patient or staff	3	1	1
155: Patient or staff record protective factors or positive plans	30	32	10
156: Remorseful	4	5	3
157: Relationships			
158: Patient feels bullied by family	1	0	0
159: Patient reports relationship issues with other family members	2	6	2
160: Relationship difficulties with the partner	4	12	1
161: Self-harm			
162: denied self-harm or harm to others	1	0	0

163: Expressing worries of harming others or him or herself and taking actions to avoid	3	0	0
164: No or low self-harm thoughts objective record	14	12	9
165: No thoughts of harm to others objective record	2	4	4
166: Prior to admission No self-harm or harm to others was admitted due to other reasons	1	0	1
167: Prior to admission, attempts or thoughts to harm others	4	4	4
168: Prior to admission, damage property	0	3	0
169: Prior to admission, Self-harm attempts thoughts	21	26	7
170: Risk of impulsivity has been recorded by staff	2	17	5
171: Self-harm or attempt in the ward or during ward stay including leave	4	37	2
172: Self-harm thoughts objective record	16	15	4
173: Self-harm thoughts subjective complaint	27	69	13
174: Thoughts of harming others subjective during ward stay	0	0	2
175: Trying to inflict further self-harm on the wound which had self-harmed earlier	0	5	0
176: Substance use in the ward			
177: Objective evidence of alcohol or illicit substance use during ward stay	1	12	2
178: Patient expressing wish to bring or have illicit drug or alcohol	0	8	1
179: Patient taking some actions to prevent alcohol use	0	0	1
180: Staff suspecting patient using alcohol or illicit substances	0	7	0
181: Suspicious or paranoid			
182: Objective record of patient being suspicious or paranoid	5	2	0
183: Subjective complaint	6	6	0
184: Symptoms not observed by staff objectively			
185: Bright reactive warm pleasant mood	89	112	28
186: Concentration normal	3	3	0
187: Energy normal	1	0	0
188: Engaging interacting with peers	37	67	27
189: Engaging interacting with staff	29	32	8
190: Evident in the ward	56	82	18
191: Food and fluid intake ok	30	43	10
192: Functioning okay	1	2	0

193: Good eye contact	34	28	12
194: Mood euthymic	26	35	13
195: No disorder of thought form or content	41	47	13
196: No perceptual disturbances	23	25	8
197: Not anxious agitated relaxed	14	26	4
198: Oriented in time place and person	20	13	4
199: Psychosis not present objective record	11	13	6
200: Sleep appears normal	15	29	9
201: Speech normal	94	134	41
202: Staff record as not depressed or no evidence of low mood	3	5	1
203: Staff record of laughing jovial enjoying and joking	66	52	13
204: Staff recorded as no objective signs of mental illness	1	3	2
205: Utilised unescorted leave appropriately	19	47	14
206: Well-kempt	50	71	24
207: Symptoms not reported as unwell by the patient subjectively			
208: I am not depressed	2	2	1
209: I am not suicidal	0	1	1
210: I am too well to be in the hospital	0	2	0
211: Mood stable or well	1	1	1
212: Thought			
213: Objective			
214: Chronic emptiness	0	1	0
215: Delusions	6	0	0
216: Dissociative symptoms	1	0	0
217: Distressed with the experience	3	0	0
218: laughing or talking incongruently	3	0	0
219: No delusions	0	1	0
220: No distressing thoughts	0	1	0
221: Obsessions or intrusive thoughts	1	5	0
222: Quasi-psychotic type symptoms	0	2	0
223: Thought disorder blocked	7	0	0
224: Subjective			
225: Obsessional	0	1	1
226: Overvalued ideations	0	1	0
227: Treatment			

228: Anxiety or upset about change in care providers	0	3	0
229: Comply with medications	33	32	12
230: Engaged in groups and exercise OT	33	25	7
231: Family or friends reporting some or significant improvement in mental state mood	7	1	1
232: Not started on medication by the team	0	1	2
233: Patient contacting outside help lines 101 police while in the ward	0	1	0
234: Patient demanding seeking medications	4	20	1
235: Patient feels current medication not helping	8	32	4
236: Patient feels current medication working or working for some extent	11	4	4
237: Patient feels the psychological therapy didn't work	1	1	0
238: Patient reports some improvement	15	3	2
239: Patient requesting community team or Crisis Team help	2	2	1
240: Patient requesting medication or treatment review	2	12	1
241: Patient requesting psychological therapy	1	6	0
242: Patient seeks out staff for therapy or help-seeking behaviours	3	3	0
243: Patients reports no improvement after a period of treatment	4	0	0
244: Refuse some or all medications	2	13	4
245: Team felt not detainable under the *Mental Health Act*	1	2	1
246: Willing and engaged in treatment	4	1	1

APPENDIX D: QUALITATIVE DATA FROM STAFF DIAGNOSES

The below colours are used in the table to highlight personality disorder–related diagnoses given by the staff for those with MDD.

First team member overdiagnosis*	
Second team member overdiagnosis**	

Table D.1: Staff and second team member diagnoses and respective SCID diagnosis

Study number	Nursing diagnosis	Second team member diagnosis	SCID-5-RV	SCID-5-PD
RAPID1	Depression	Depression	Major depressive disorder (severe) with melancholic features	
RAPID2	Borderline personality disorder	Depression	Major depressive disorder (moderate) with anxiety features specifier (moderate)	Borderline personality disorder
RAPID3	Psychotic depression	Psychotic depressive episode, stress vulnerable	Major depressive disorder (severe) with anxiety distress specifier (moderate)	
RAPID4	Depressive illness with psychotic features	Depression with personality disorder, not a severe depression**	Major depressive disorder (severe) with mood-congruent psychotic features	
RAPID5	Personality disorder	Borderline personality disorder	Major depressive disorder (mild) with anxiety distress specifier (mild) Opioid use disorder prior to past 12 months in sustained remission	Borderline, dependent, antisocial personality disorders
RAPID6	Low mood and anxiety	Anxiety and low mood	Major depressive disorder (mild) with anxiety distress specifier (moderate to severe) Past major depressive episode	
RAPID7	Dependent personality disorder*	Dependent personality disorder**	Major depressive disorder recurrent moderate episode with anxiety distress specifier (moderate to severe) Anorexia nervosa mild restrictive type partial remission	
RAPID8	Personality disorder	Severe depression and avoidant personality traits	Major depressive disorder (mild) with anxiety distress specifier (mild) Past post-traumatic stress disorder	Paranoid, schizoid, borderline, antisocial personality disorders

			Prior to past 12 months' heroin use disorder	
RAPID9	Borderline personality disorder	Personality disorder	Major depressive disorder (moderate) with anxiety distress specifier	Obsessive-compulsive personality disorder
RAPID10	Anxious depression	Depression with traits of personality disorder**	Major depressive disorder recurrent severe episode with anxiety distress specifier (severe) Past major depressive disorder	
RAPID11	Personality disorder*	Personality disorder traits**	Major depressive disorder mild with atypical features	
RAPID12	Adjustment disorder, borderline personality disorder*	Depressive episode	Major depressive disorder (severe) with anxiety distress (severe) Past post-traumatic stress disorder	
RAPID13	Personality disorder	Personality difficulties	Autistic spectrum disorder	Schizotypal and borderline personality disorders
RAPID14	Depression with personality traits*	Avoidant personality traits, anxiety**	Major depressive disorder moderate with anxious distress moderate to severe	
RAPID15	Borderline personality disorder, substance misuse	Anxiety with personality traits	Major depressive disorder mild with anxiety distress (moderate to severe) Cannabis, benzodiazepine, alcohol use disorders (not misuse)	Borderline personality disorder
RAPID16	Borderline personality disorder + antisocial traits	Borderline personality disorder with reactive depression — crisis in home	Major depressive disorder recurrent major depressive episode (moderate) with anxiety distress Past post-traumatic stress disorder	Borderline personality disorder
RAPID17	Chronic depression, with reactive depression, past recent bereavements, substance misuse	Personality traits, regulating emotions	Adjustment disorder Cannabis use, not misuse or dependence	Borderline personality disorder
RAPID18	Chronic low mood with avoidant personality traits*	Depression	Major depressive disorder severe with melancholic features	
RAPID19	Borderline personality disorder with antisocial traits	Personality disorder	Adjustment disorder	

RAPID20	Depression	Depression + anxiety	Major depressive disorder (moderate) with anxious distress (mild) Past heroin use disorder	
RAPID21	Borderline personality disorder	Borderline personality disorder	Major depressive disorder moderate with anxiety distress mild	Avoidant, paranoid, borderline personality disorders
RAPID22	Personality disorder	Personality disorder	Major depressive disorder (moderate) with anxious distress (moderate) Anorexia nervosa — past Bulimia nervosa — present	Borderline personality disorder
RAPID23	Borderline personality disorder	Borderline personality disorder	Adjustment disorder	Borderline personality disorder
RAPID24	Chronic anxiety with personality traits	Generalised anxiety disorder with dependent personality traits	Generalised anxiety disorder	
RAPID25	Depressive episode with borderline personality traits*	Low mood, possible personality traits**	Major depressive disorder moderate	
RAPID26	Dependent personality disorder*	Anxious dependent personality disorder with depressive episodes**	Major depressive disorder severe with melancholic features and psychotic symptoms	
RAPID27	Borderline personality disorder*	Depressive episode with psychotic features	Major depressive disorder (moderate) with anxiety distress	
RAPID28	Narcissistic personality traits	Personality traits, low mood	Current persistent depressive disorder (dysthymia)	
RAPID29	Borderline personality disorder	Depression associated with eating disorder	Major depressive disorder (recurrent) with anxiety distress, eating disorder not otherwise specified	Obsessive-compulsive personality disorder
RAPID30	Borderline personality disorder	Depression		Avoidant, paranoid, borderline personality disorders
RAPID31	Depressive episode	Depression and thyroid	Persistent depressive disorder (dysthymia), past eating disorder (anorexia nervosa), organic mood disorder (thyroid)	
RAPID32	Personality disorder	Personality disorder	Adjustment disorder, past alcohol dependence	
RAPID33	Depression	Depression	Major depressive disorder recurrent with anxiety distress	

RAPID34	Recurrent depressive disorder	Depressive illness	Major depressive disorder anxious distress	
RAPID35	Personality disorder*	Psychosis? drug-induced	Major depressive disorder severe with psychotic/ melancholic symptoms	
RAPID36	Relationship issues with husband and family	Data missing	Adjustment disorder, cyclothymia	Borderline personality disorder
RAPID37	Low mood with depressive symptoms	Data missing	Major depressive disorder with anxiety distress	
RAPID38	Low mood and personality traits	Depression	Adjustment disorder, agoraphobia, past alcohol abuse	
RAPID39	Anorexia and low mood	Anorexia	Major depressive disorder recurrent moderate anxious distress, anorexia nervosa	Avoidant personality disorder
RAPID40	Adjustment disorder	Predominantly obsessive thoughts or ruminations, mild depressive episode with somatic syndrome	Major depressive disorder moderate anxious distress	
RAPID41	Borderline personality disorder	Anxiety and depression with emotionally unstable personality traits	Major depressive disorder, atypical	Paranoid and borderline personality disorder
RAPID42	Depression	Stress-related anxiety	Major depressive disorder	
RAPID43	Anxiety with dependent features*	Depression with personality traits of dependent avoidant**	Major depressive disorder, generalised anxiety disorder, past alcohol misuse	
RAPID44	Depression	Situational depression	Adjustment disorder, past polysubstance misuse	Paranoid and borderline personality disorders
RAPID45	Borderline personality disorder	Data missing	No current axis I diagnosis, past substance use disorder Childhood attention deficit hyperactivity disorder (ADHD)	Avoidant, paranoid, borderline personality disorders
RAPID46	Personality disorder or traits/ low mood?	Depression with personality traits	Past heroin dependence, Tourette's syndrome	Borderline and antisocial personality disorders
RAPID47	Data missing	Data missing	Generalised anxiety disorder	
RAPID48	Chronic situational depression, adjustment disorder	Situational depression, adjustment disorder	Major depressive disorder — moderate	Avoidant personality disorder
RAPID49	Mixed personality disorder	Autism, anxiety	Autistic spectrum disorder, post-traumatic stress disorder symptoms, not post-traumatic stress disorder diagnosis	

RAPID50	Data missing	Stress-related anxiety and depression	Major depressive disorder — anxious distress	
RAPID51	Borderline personality disorder	Data missing	Past major depressive disorder	Borderline and avoidant personality disorders
RAPID52	Personality traits	Antisocial personality	Adjustment disorder	
RAPID53	Data missing	Data missing	Post-traumatic stress disorder Past alcohol, cocaine, cannabis abuse, current use (prior to past 12 months' substance use disorder)	Borderline, paranoid, antisocial personality disorders
RAPID54	Data missing	Data missing	Post-traumatic stress disorder Eating disorders not otherwise specified	Avoidant and borderline personality disorders
RAPID55	Personality disorder	Data missing	Obsessive-compulsive disorder	Borderline and histrionic personality disorders
RAPID56	Post-traumatic stress disorder with a psychotic element to personality/a dependent personality resulting in chronic anxiety, depression, psychotic ideas, bereavement issues, maladaptive behaviour, thoughts*	Post-traumatic stress disorder with anxiety, dependent traits**	Major depressive disorder severe, post-traumatic stress disorder	
RAPID57	Severe depression	Data missing	Major depressive disorder anxious distress	
RAPID58	Depression	Depression, suicidal ideation	Major depressive disorder	Avoidant personality disorder
RAPID59	Attention deficit and hyperactivity disorder	Data missing	Childhood diagnosis of ADHD and conduct disorder, post-traumatic stress disorder symptoms, major depressive disorder (mild)	Schizotypal, borderline, avoidant personality disorders
RAPID60	Borderline personality disorder	Adjustment reaction and possibly personality/mood disorder		Borderline personality disorder

APPENDIX E: STUDY MATERIAL

REC Approval for the RAPID Study

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

Gwasanaeth Moeseg Ymchwil
Research Ethics Service

Ariennir gan Lywodraeth Cymru
Funded by Welsh Government

Wales REC 6
Floor 8
36 Orchard Street
Swansea
SA1 5AQ

Telephone : 01792 607416
Fax : 01792 607533
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Website : www.nres.nhs.uk

01 March 2016

Dr Kaushadh Jayakody
Consultant Psychiatrist and Associate Clinical Researcher
Northumberland Tyne and Wear NHS Foundation Trust and Newcastle University, UK
St George's Park
Morpeth
NE61 2NU

Dear Dr Jayakody

Study title:	**Relationship between Affective state and Personality ratings in Inpatient Depression (RAPID)**
REC reference:	**15/WA/0219**
Protocol number:	**RAPID Study Protocol1.1**
Amendment number:	**AM01**
Amendment date:	**04 February 2016**
IRAS project ID:	**167260**

The above amendment was reviewed on 01 March 2016 by the Sub-Committee in correspondence.

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Notice of Substantial Amendment (non-CTIMP) [changes to protocol and IRAS information]	AM01	04 February 2016
Participant consent form [revised]	3	30 January 2016
Participant consent form [Previous]	1.1	02 May 2015
Participant information sheet (PIS) [revised]	2.1	27 November 2015
Participant information sheet (PIS) [Previous]	2	16 June 2015
Research protocol or project proposal [revised]	2.1	27 November 2015
Research protocol or project proposal [Previous]	1.1	20 April 2015

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

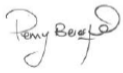
Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

15/WA/0219:	**Please quote this number on all correspondence**

Yours sincerely



pp
Prof Roy L. Evans
Chairman

E-mail: penny.beresford@wales.nhs.uk

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Mr Simon Douglas , Northumberland Tyne and Wear NHS Foundation Trust*

Wales REC 6

Attendance at PRS Sub-Committee of the REC meeting on 01 March 2016

Committee Members:

Name	*Profession*	*Present*	*Notes*
Roy L. Evans	Hon Assoc Professor - Chairman	Yes	
Dr Matthew Lawrence	Research Officer	Yes	
Dr Ryan Lewis	Clinical Scientist	Yes	

Also in attendance:

Name	*Position (or reason for attending)*
Ms Penny Beresford	REC Manager

CNTW NHS Foundation Trust Approval for the RAPID Study

Northumberland, Tyne and Wear NHS
NHS Foundation Trust

Research & Clinical Effectiveness Department
St Nicholas Hospital
Jubilee Road
Gosforth
Newcastle upon Tyne NE3 3XT
Tel: (External) 0191 223 2338
(Internal) 32338
Fax: 0191 223 2341

10th July 2015

RES-15-027

Dr Jayakody
Consultant Psychiatrist
St Georges Park

Dear Dr Jayakody

Re: Relationship between Affective state and Personality ratings in Inpatient Depression (RAPID)

IRAS ID: 167260

I write to confirm that Northumberland, Tyne and Wear NHS Foundation Trust are happy to support and approve the above study. Please accept this letter as verification of Trust approval.

Approval is granted with the condition that the R&D Department are notified of:

- Commencement and completion of the study
- Any significant changes to the study design
- Suspension or abandonment of the study
- Copy of annual REC report and end of project REC report
- All publications and/or conference presentation of the study findings

The Department of Health's minimum standards for research governance state that at least 10% of projects should be routinely audited. It is a condition of our approval that the researchers accept the Trust's right to include this project in the auditing and monitoring process.

Best wishes

Yours sincerely

Simon Douglas
Senior Manager for Research, Innovation and Clinical Effectiveness

Participant Consent Form for the RAPID Study

RELATIONSHIP BETWEEN AFFECTIVE STATE AND PERSONALITY RATINGS IN INPATIENT DEPRESSION STUDY (RAPID)

CONSENT FORM

I am willing to take part in the study and by signing this form agree to the following statements. **Please initial the box**

- I confirm that I understand the nature of the study proposed, having read and understood the patient information sheet (RAPID Information Sheet Patient **Version 3, 1 January 2016**). I have had opportunity to ask questions and am satisfied with the answers I received. ☐
- I recognize that my participation is voluntary and that I am free to withdraw from the study at any time. Should I wish to withdraw, I know that I can do so without giving reason and without my future medical care or legal rights being affected. ☐
- I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities and/or from the NTW NHS Foundation Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. ☐
- I agree that the data I provide during this study can be stored once identifiable personal information has been removed, for a periods of no more than ten years after the conclusion of the study, ☐

Participant name

Participant signature

Date

Researcher name

Researcher signature

Date

Newcastle University

Northumberland, Tyne and Wear NHS Foundation Trust

Participant Information Sheet for the RAPID Study

Newcastle University

Northumberland, Tyne and Wear NHS Foundation Trust

Relationship between Affective state and Personality ratings in Inpatient Depression (RAPID) study

Patient Information Leaflet

We would be very grateful if you would consider participating in our research study. We are investigating personality and depression. In this leaflet, we have explained why this research project is important and what aspects you need to know. If the information provided here is not clear or should you wish to discuss any aspect of this research project, please feel free contact us. We will do our best to answer your questions.

Depression

Depression is a common mental disorder that presents with a collection of symptoms. Patients commonly experience long periods of sadness and hopelessness, loss of interest in the things they used to enjoy, constant tiredness, poor sleep, poor appetite, reduced sex drive, and are often feeling increasingly anxious.

Personality

Personality is unique to individual. It is the way the person thinks, feel, perceive, and relate to others. In personality disorders, the individual differs significantly from the norm. This can lead to change in the way they think, feel, perceive and how they relate to others leading to distress among themselves and others.

Studying the treatment effects of personality in depression

The relationship between depression and personality structure is complex. Some patients can have both conditions together. Treatment approaches can be different in these two

conditions. Therefore, it is important that the patients are diagnosed correctly so they can be directed to appropriate treatment.

Propose of this study

In this study, we are looking at the relationship between depression and personality. We look at how our assessment of person's personality structure fluctuates during the course of treatment for depression.

How the study is carried out

Study will be carried out in three of the acute adult psychiatry inpatients wards; Embleton, Warkworth, Alnmouth wards at St George's Park, Morpeth, Northumberland Tyne and Wear (NTW) NHS Foundation Trust.

Why have I been invited?

You have been invited to participate in this study due to you having a diagnosis of depression. We have asked clinical teams in the Embleton, Warkworth and Alnmouth wards to identify suitable patients for this study and so you should have received this information pack from those involved in delivering your care. Please be reassured that the research team is not aware of your details or background information at this point. If you are interested, your care team can contact us on your behalf.

If you want to take part, we can visit you on the ward to discuss about the study and any concerns. We would also encourage you to discuss the study with your family, friends or carers. If you choose to take part in the study, we will ask you to sign a consent form and will give you a copy for your records. You have the right to consent, refuse or withdraw from the study at any point – you would not need to give a reason for withdrawing, and doing so

would not affect your future care. The research team is not allowed to go through your case records until you give your consent to enrol in the study.

What will the study involve?

Data will be collected from patients with **depressive symptoms**. You may have already been **found to have depressive symptoms** prior to admission and your clinical team, as part of the referral process, will **identify those symptoms**. This study is separated from the care and treatment you receive in the ward. We will not influence your treatment – that is up to the clinical team to decide.

The study

The study involves a structured interview; we will ask questions around your symptoms of depression, your day to day functioning, **memory** and personality. We will further ask you to fill some questionnaires by yourself. **We will repeat the structured interview at the end of your participation in the study and the questions ask will again be similar to the initial interview. Interview at that end will also include a diagnostic assessment to confirm your diagnosis.**

Who is organising the research

The main investigators of this research project are Dr K Jayakody and Dr David Cousins. A team from the Newcastle University is supervising the study (Dr David Cousins, Dr Peter Gallagher, Dr Quoc Vuong). Senior nurses, ward clinical psychologists and consultant psychiatrists may be involved in doing the structured interview with you. They may also provide you with self-assessment questionnaires. The Northumberland Tyne and Wear NHS

Foundation Trust are acting as sponsor for this study. The study is being undertaken as part fulfilment of an educational project (Doctor of Medicine).

This study has been reviewed by the Research Ethics Committee, an independent body which looks in to research conducted in the NHS (reviewing body: Wales REC 6). They have looked in to aspects such as how to conduct this study safely protecting you and other patients.

Recruitment to the study

As stated above, your clinical team will, with your permission, inform the research team about your potential suitability and eligibility for the study. Only then will the research team approach you._Once you give consent, the research team will be able have access your clinical records. They are bound by the same standards of professional conduct and confidentiality as your usual clinical team. The research team may speak to your clinical team on a regular basis, including your psychiatrists, nurses, community psychiatric nurses and other professionals involve around your care.

After meeting with the research team, if you feel that you do not wish to take part in the study, we may leave this leaflet and our contact details with you. You may contact us again if you change your mind. If you do not take part in the study, that's okay. It does not affect your clinical care. You also have the right to opt out from the study at any time.

Your confidential information

All the information collected about you will be kept confidential, stored on Northumberland Tyne and Wear (NTW) NHS Foundation Trust password protected, encrypted computers. Newcastle University computers will use a code to identify you rather than your name. Data collected on paper will be stored in a locked filing cabinet in a locked room at the NTW NHS

Trust and Newcastle University. These facilities need keys and swipe cards to enter. Dr Jayakody and Dr Cousins will be the custodian of the file linking your name to your study code. This file will be held separately. The data will be held up to 3 years.

We may share data with other research groups upon request. For example, if the other research groups want to check the validity of our study, they may request data. NTW NHS Trust Research and Development department may also request to see the study findings for audit purposes. Dr Jayakody and Dr Cousins will review these applications. Coded data will be submitted to these groups after carefully considering their data protection process. Again, patient identifiable information will not be provided.

Results of the research

Results will be analysed by us. Results and its findings will be submitted for publication in a scientific journal. We may also give a presentation at scientific conferences. You will not be identified in any publication or presentation. If you wish to know the outcome of our research, we are happy to discuss our findings with you once the analysis is completed.

What if there is a problem

If you have concerns about the study, you can ask to speak to a member in the research team. If you wish to complain formally, you can do so via NHS Complaints procedure. Research team or your clinical team will guide you how to do it. You may also find leaflets explaining complaining procedure in the ward.

What happens next?

If you are interested in taking part in this study, please inform your clinical team in the ward. Research team member will then visit you. If you want to clarify any unanswered questions about the study or any issues while taking part in the study, please inform your clinical team or research team.

Research team can be contacted by following methods;

Contact name: Dr K Jayakody

By post: Urgent Care, St George's Park, Morpeth, NE61 2NU

Contact phone number: 01670501864

Email address: k.jayakody1@newcastle.ac.uk

RAPID Poster Displayed for Patients in the Wards

Newcastle University

Northumberland, Tyne and Wear NHS Foundation Trust

Notice

Relationship Between Affective State and Personality Ratings in Inpatient Depression (RAPID) Research study

A research study is aiming to find the relationship between depression and personality. This study is conducted in the Alnmouth, Embleton and Warkworth wards in the St George's Park, Morpeth. Eligible patients are recruited from these three wards.

You may be eligible if you have depression and is admitted to any of the above wards.

If you are interested, please refer to the patient information leaflet available in the wards.

Main investigators: Dr K Jayakody and Dr David Cousins

Urgent Care
St George's Park
Morpeth
NE61 2NU

Project Team Roles and Responsibilities

Team member	**Allocated task in the RAPID study**
Kaushadh Jayakody (KJ) Embleton, Warkworth and Alnmouth wards, St George's Park	Patient selection and data collection; consent, distributing BDI, CTQ, SPQ, CFQ. Complete SCID and DSST assessments Distribute and collect qualitative data
David Cousins Newcastle University	Supervision
Peter Gallagher Newcastle University	Supervision
Adrian Lloyd and Gabriele Jordan Newcastle University	Supervision
Ian McKinnon and Matthew Breckons Newcastle University	Qualitative data supervision
Quoc Voung	Supervision
Graham Ingram (Lead Clinician) Embleton, Warkworth and Alnmouth wards	Study approval in the acute wards
Guy Harvey (Consultant Psychiatrist) Alnmouth ward	Patient selection Fill study questionnaires; admission and discharge CGI and HAMD
Mark Willis (Consultant Psychiatrist) Warkworth and Embleton wards	Patient selection. Fill admission and discharge CGI and HAMD
Rasheed Abuzeid (Consultant Psychiatrist) Warkworth Ward	Patient selection Fill admission and discharge CGI and HAMD
Adriana Moraru (Speciality Doctor) Embleton and Alnmouth wards	Patient selection Distributing and collecting completed BDI, CTQ, SPQ and CFQ questionnaires from the patients Fill admission and discharge CGI and HAMD, conduct DSST
Psychiatry Trainee's and Higher Trainee Embleton, Warkworth and Alnmouth wards	Patient selection Consent, distributing and collecting completed BDI, CTQ, SPQ and CFQ questionnaire from the patients Fill admission and discharge CGI and HAMD. Higher Trainee - complete SCID if KJ on leave, conduct DSST
Kelly Jones Embleton ward	Patient selection Fill qualitative questionnaires Admission and discharge CGI and HAMD
Ward nursing staff Embleton, Alnmouth and Warkworth wards	Patient selection Fill qualitative questionnaires Admission and discharge CGI and HAMD

Ward psychologist Embleton, Alnmouth and Warkworth wards	Fill qualitative questionnaire
Discharge facilitators Embleton, Alnmouth and Warkworth wards	Fill qualitative questionnaires; CGI and HAMD
Exercise therapists Embleton, Alnmouth and Warkworth wards	Fill qualitative questionnaire
Occupational therapists Embleton, Alnmouth and Warkworth wards	Fill qualitative questionnaire
Nursing Assistants Support Workers	Rio entries
Community Care Co-ordinators attending wards	Rio entries

Signed – 

Kaushadh Jayakody

Principal Investigator

Date – 01/04/2016

Data Collection Sheet for the RAPID Study

DATA COLLECTION SHEET RAPID
Consenting – (Y/N)

Study ID	Ward E - Embleton W - Warkworth A - Alnmouth	Date of admission	Time of admission	72 hrs meeting took place and	Admitting team GP - G CMHT - C CRHT – H Other - O	Provisional diagnosis: Depression? (Y/N)
Whether patient had been on any psychotropic's on admission? If Yes, what types		Age	Sex M - Male F - Female	Any treatment changes		
(Y/N) Antidepressants Antipsychotic Anxiolytic Mood stabiliser						
Questionnaires done on admission (Y/N)						
Information sheet	Consent form	BDI	HAMD	CGI	CFQ	DSST
Questionnaires done on discharge (Y/N)						
BDI	HAMD	CGI	CTQ	CFQ	DSST	SCID 5 SCID 5 PD
Rio records (Y/N) Staff questionnaire Answer 1 Staff questionnaire Answer 2 (Y/N)						
SCID 5 diagnosis		SCID 5 PD diagnosis		Discharge planning (Y/N)		Date of discharge

Staff Questionnaire (Qualitative Data) for Non-Medical Staff

Staff questionnaire

Below information are for research study only and your personal details are not needed

Patient study ID:

Date:

Ward:

1) What do you think the main diagnosis is for this patient?

2) What makes you think that?

Thank you

Research Team

Data Collection Questionnaires for Quantitative Data (BDI, HAMD, CGI, CFQ, DSST, CTQ)

Beck's Depression Inventory

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.

1.
- 0 I do not feel sad.
- 1 I feel sad
- 2 I am sad all the time and I can't snap out of it.
- 3 I am so sad and unhappy that I can't stand it.

2.
- 0 I am not particularly discouraged about the future.
- 1 I feel discouraged about the future.
- 2 I feel I have nothing to look forward to.
- 3 I feel the future is hopeless and that things cannot improve.

3.
- 0 I do not feel like a failure.
- 1 I feel I have failed more than the average person.
- 2 As I look back on my life, all I can see is a lot of failures.
- 3 I feel I am a complete failure as a person.

4.
- 0 I get as much satisfaction out of things as I used to.
- 1 I don't enjoy things the way I used to.
- 2 I don't get real satisfaction out of anything anymore.
- 3 I am dissatisfied or bored with everything.

5.
- 0 I don't feel particularly guilty
- 1 I feel guilty a good part of the time.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6.
- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7.
- 0 I don't feel disappointed in myself.
- 1 I am disappointed in myself.
- 2 I am disgusted with myself.
- 3 I hate myself.

8.
- 0 I don't feel I am any worse than anybody else.
- 1 I am critical of myself for my weaknesses or mistakes.
- 2 I blame myself all the time for my faults.
- 3 I blame myself for everything bad that happens.

9.
- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10.
- 0 I don't cry any more than usual.
- 1 I cry more now than I used to.
- 2 I cry all the time now.
- 3 I used to be able to cry, but now I can't cry even though I want to.

11.

0 I am no more irritated by things than I ever was.
1 I am slightly more irritated now than usual.
2 I am quite annoyed or irritated a good deal of the time.
3 I feel irritated all the time.

12.

0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions more than I used to.
3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel there are permanent changes in my appearance that make me look unattractive
3 I believe that I look ugly.

15.

0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

16.

0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

18.

0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

19.

0 I haven't lost much weight, if any, lately.
1 I have lost more than five pounds.
2 I have lost more than ten pounds.
3 I have lost more than fifteen pounds.

20.

0 I am no more worried about my health than usual.
1 I am worried about physical problems like aches, pains, upset stomach, or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems that I cannot think of anything else.

21.

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I have almost no interest in sex.
3 I have lost interest in sex completely.

INTERPRETING THE BECK DEPRESSION INVENTORY

Now that you have completed the questionnaire, add up the score for each of the twenty-one questions by counting the number to the right of each question you marked. The highest possible total for the whole test would be sixty-three. This would mean you circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean you circles zero on each question. You can evaluate your depression according to the Table below.

Total Score	Levels of Depression
1-10	These ups and downs are considered normal
11-16	Mild mood disturbance
17-20	Borderline clinical depression
21-30	Moderate depression
31-40	Severe depression
over 40	Extreme depression

A PERSISTENT SCORE OF 17 OR ABOVE INDICATES THAT YOU MAY NEED MEDICAL TREATMENT. IF YOU HAVE ANY CARDIAC CONCERNS, PLEASE CONTACT CARDIOVASCULAR INTERVENTIONS, P.A. at 407-894-4880

THE HAMILTON RATING SCALE FOR DEPRESSION

(to be administered by a health care professional)

Patient's Name

Date of Assessment

To rate the severity of depression in patients who are already diagnosed as depressed, administer this questionnaire. The higher the score, the more severe the depression.

For each item, write the correct number on the line next to the item. (Only one response per item)

1. DEPRESSED MOOD (Sadness, hopeless, helpless, worthless)

_____
0= Absent
1= These feeling states indicated only on questioning
2= These feeling states spontaneously reported verbally
3= Communicates feeling states non-verbally—i.e., through facial expression, posture, voice, and tendency to weep
4= Patient reports VIRTUALLY ONLY these feeling states in his spontaneous verbal and non-verbal communication

2. FEELINGS OF GUILT

_____
0= Absent
1= Self reproach, feels he has let people down
2= Ideas of guilt or rumination over past errors or sinful deeds
3= Present illness is a punishment. Delusions of guilt
4= Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations

3. SUICIDE

_____
0= Absent
1= Feels life is not worth living
2= Wishes he were dead or any thoughts of possible death to self
3= Suicidal ideas or gesture
4= Attempts at suicide (any serious attempt rates 4)

4. INSOMNIA EARLY

_____
0= No difficulty falling asleep
1= Complains of occasional difficulty falling asleep—i.e., more than 1/2 hour
2= Complains of nightly difficulty falling asleep

5. INSOMNIA MIDDLE

_____
0= No difficulty
1= Patient complains of being restless and disturbed during the night
2= Waking during the night—any getting out of bed rates 2 (except for purposes of voiding)

Adapted from Hedlung and Vieweg, The Hamilton rating scale for depression, *Journal of Operational Psychiatry*, 1979;10(2):149-165.

6. INSOMNIA LATE

_____

0= No difficulty
1= Waking in early hours of the morning but goes back to sleep
2= Unable to fall asleep again if he gets out of bed

7. WORK AND ACTIVITIES

_____

0= No difficulty
1= Thoughts and feelings of incapacity, fatigue or weakness related to activities; work or hobbies
2= Loss of interest in activity; hobbies or work—either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels he has to push self to work or activities)
3= Decrease in actual time spent in activities or decrease in productivity
4= Stopped working because of present illness

8. RETARDATION: PSYCHOMOTOR (Slowness of thought and speech; impaired ability to concentrate; decreased motor activity)

_____

0= Normal speech and thought
1= Slight retardation at interview
2= Obvious retardation at interview
3= Interview difficult
4= Complete stupor

9. AGITATION

_____

0= None
1= Fidgetiness
2= Playing with hands, hair, etc.
3= Moving about, can't sit still
4= Hand wringing, nail biting, hair-pulling, biting of lips

10. ANXIETY (PSYCHOLOGICAL)

_____

0= No difficulty
1= Subjective tension and irritability
2= Worrying about minor matters
3= Apprehensive attitude apparent in face or speech
4= Fears expressed without questioning

11. ANXIETY SOMATIC: Physiological concomitants of anxiety, (i.e., effects of autonomic overactivity, "butterflies," indigestion, stomach cramps, belching, diarrhea, palpitations, hyperventilation, paresthesia, sweating, flushing, tremor, headache, urinary frequency). Avoid asking about possible medication side effects (i.e., dry mouth, constipation)

_____

0= Absent
1= Mild
2= Moderate
3= Severe
4= Incapacitating

12. SOMATIC SYMPTOMS (GASTROINTESTINAL)

_____
0= None
1= Loss of appetite but eating without encouragement from others. Food intake about normal
2= Difficulty eating without urging from others. Marked reduction of appetite and food intake

13. SOMATIC SYMPTOMS GENERAL

_____
0= None
1= Heaviness in limbs, back or head. Backaches, headache, muscle aches. Loss of energy and fatigability
2= Any clear-cut symptom rates 2

14. GENITAL SYMPTOMS (Symptoms such as: loss of libido; impaired sexual performance; menstrual disturbances)

_____
0= Absent
1= Mild
2= Severe

15. HYPOCHONDRIASIS

_____
0= Not present
1= Self-absorption (bodily)
2= Preoccupation with health
3= Frequent complaints, requests for help, etc.
4= Hypochondriacal delusions

16. LOSS OF WEIGHT

_____
A. When rating by history:
0= No weight loss
1= Probably weight loss associated with present illness
2= Definite (according to patient) weight loss
3= Not assessed

17. INSIGHT

_____
0= Acknowledges being depressed and ill
1= Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
2= Denies being ill at all

18. DIURNAL VARIATION

_____
A. Note whether symptoms are worse in morning or evening. If NO diurnal variation, mark none
0= No variation
1= Worse in A.M.
2= Worse in P.M.

_____
B. When present, mark the severity of the variation. Mark "None" if NO variation
0= None
1= Mild
2= Severe

19. DEPERSONALIZATION AND DEREALIZATION (Such as: Feelings of unreality; Nihilistic ideas)

_____
0= Absent
1= Mild
2= Moderate
3= Severe
4= Incapacitating

20. PARANOID SYMPTOMS

_____
0= None
1= Suspicious
2= Ideas of reference
3= Delusions of reference and persecution

21. OBSESSIONAL AND COMPULSIVE SYMPTOMS

_____
0= Absent
1= Mild
2= Severe

Total Score _____

Clinical Global Impression (CGI)

Reference: **Guy W, editor. ECDEU Assessment Manual for Psychopharmacology. 1976. Rockville, MD, U.S. Department of Health, Education, and Welfare**

Rating Clinician-rated

Administration time Varies with familiarity with patient

Main purpose To provide a global rating of illness severity, improvement and response to treatment

Population Adults

Commentary

Amongst the most widely used of extant brief assessment tools in psychiatry, the CGI is a 3-item observer-rated scale that measures illness severity (CGIS), global improvement or change (CGIC) and therapeutic response. The illness severity and improvement sections of the instrument are used more frequently than the therapeutic response section in both clinical and research settings. The Early Clinical Drug Evaluation Program (ECDEU) version of the CGI (reproduced here) is the most widely used format, and asks that the clinician rate the patient relative to their past experience with other patients with the same diagnosis, with or without collateral information. Several alternative versions of the CGI have been developed, however, such as the FDA Clinicians' Interview-Based Impression of Change (CIBIC), which uses only information collected during the interview, not collateral. The CGI has proved to be a robust measure of efficacy in many clinical drug trials, and is easy and quick to administer, provided that the clinician knows the patient well.

Scoring

The CGI is rated on a 7-point scale, with the severity of illness scale using a range of responses from 1 (normal) through to 7 (amongst the most severely ill patients). CGI-C scores range from 1 (very much improved) through to 7 (very much worse). Treatment response ratings should take account of both therapeutic efficacy and treatment-related adverse events and range from 0 (marked improvement and no side-effects) and 4 (unchanged or worse and side-effects outweigh the therapeutic effects). Each component of the CGI is rated separately; the instrument does not yield a global score.

Versions

CGI for bipolar disorder (CGI-BD), FDA Clinicians' Interview-Based Impression of Change (CIBIC), Clinicians' Interview-Based Impression of Change-Plus (CIBIC+), NYU CIBIC+, Parke-Davis Pharmaceuticals Clinical Interview-Based Impression (CIBI); the CGI has been translated into most languages.

Additional references

Leon AC, Shear MK, Klerman GL, Portera L, Rosenbaum JF, Goldenberg I. A comparison of symptom determinants of patient and clinician global ratings in patients with panic disorder and depression. J Clin Psychopharmacol 1993; 13(5):327–31.

Spearing MK, Post RM, Leverich GS, Brandt D, Nolen W. Modification of the Clinical Global Impressions (CGI) Scale for use in bipolar illness (BP): the CGI-BP. Psychiatry Res 1997; 73(3):159–71.

Zaider TI, Heimberg RG, Fresco DM, Schneier FR, Liebowitz MR. Evaluation of the clinical global impression scale among individuals with social anxiety disorder. Psychol Med 2003; 33(4):611–22.

Address for correspondence

Not applicable – the CGI is in the public domain.

Clinical Global Impression (CGI)

1. **Severity of illness**
   Considering your total clinical experience with this particular population, how mentally ill is the patient at this time?
   0 = Not assessed
   1 = Normal, not at all ill
   2 = Borderline mentally ill
   3 = Mildly ill
   4 = Moderately ill
   5 = Markedly ill
   6 = Severely ill
   7 = Among the most extremely ill patients

2. **Global improvement:** Rate total improvement whether or not, in your judgement, it is due entirely to drug treatment.
   Compared to his condition at admission to the project, how much has he changed?
   0 = Not assessed
   1 = Very much improved
   2 = Much improved
   3 = Minimally improved
   4 = No change
   5 = Minimally worse
   6 = Much worse
   7 = Very much worse

3. **Efficacy index:** Rate this item on the basis of **drug effect only**.
   Select the terms which best describe the degrees of therapeutic effect and side effects and record the number in the box where the two items intersect.
   EXAMPLE: Therapeutic effect is rated as 'Moderate' and side effects are judged 'Do not significantly interfere with patient's functioning'.

Therapeutic effect		**Side effects**			
		None	*Do not significantly interfere with patient's functioning*	*Significantly interferes with patient's functioning*	*Outweighs therapeutic effect*
Marked	Vast improvement. Complete or nearly complete remission of all symptoms	01	02	03	04
Moderate	Decided improvement. Partial remission of symptoms	05	06	07	08
Minimal	Slight improvement which doesn't alter status of care of patient	09	10	11	12
Unchanged or worse		13	14	15	16

Not assessed = 00

Reproduced from Guy W, editor. ECDEU Assessment Manual for Psychopharmacology. 1976. Rockville, MD, U.S. Department of Health, Education, and Welfare

Score:

The Cognitive Failures Questionnaire

The following questions are about minor mistakes which everyone makes from time to time, but some of which happen more often than others. We want to know how often these things have happened to your in the past 6 months. **Please circle the appropriate number**.

		Very often	Quite often	Occasion - ally	Very rarely	Never
1.	Do you read something and find you haven't been thinking about it and must read it again?	4	3	2	1	0
2.	Do you find you forget why you went from one part of the house to the other?	4	3	2	1	0
3.	Do you fail to notice signposts on the road?	4	3	2	1	0
4.	Do you find you confuse right and left when giving directions?	4	3	2	1	0
5.	Do you bump into people?	4	3	2	1	0
6.	Do you find you forget whether you've turned off a light or a fire or locked the door?	4	3	2	1	0
7.	Do you fail to listen to people's names when you are meeting them?	4	3	2	1	0
8.	Do you say something and realize afterwards that it might be taken as insulting?	4	3	2	1	0
9.	Do you fail to hear people speaking to you when you are doing something else?	4	3	2	1	0
10.	Do you lose your temper and regret it?	4	3	2	1	0
11.	Do you leave important letters unanswered for days?	4	3	2	1	0
12.	Do you find you forget which way to turn on a road you know well but rarely use?	4	3	2	1	0
13.	Do you fail to see what you want in a supermarket (although it's there)?	4	3	2	1	0
14.	Do you find yourself suddenly wondering whether you've used a word correctly?	4	3	2	1	0

		Very often	Quite often	Occasion - ally	Very rarely	Never
15.	Do you have trouble making up your mind?	4	3	2	1	0
16.	Do you find you forget appointments?	4	3	2	1	0
17.	Do you forget where you put something like a newspaper or a book?	4	3	2	1	0
18.	Do you find you accidentally throw away the thing you want and keep what you meant to throw away – as in the example of throwing away the matchbox and putting the used match in your pocket?	4	3	2	1	0
19.	Do you daydream when you ought to be listening to something?	4	3	2	1	0
20.	Do you find you forget people's names?	4	3	2	1	0
21.	Do you start doing one thing at home and get distracted into doing something else (unintentionally)?	4	3	2	1	0
22.	Do you find you can't quite remember something although it's "on the tip of your tongue"?	4	3	2	1	0
23.	Do you find you forget what you came to the shops to buy?	4	3	2	1	0
24.	Do you drop things?	4	3	2	1	0
25.	Do you find you can't think of anything to say?	4	3	2	1	0

References

Broadbent, D.E., Cooper, P.F., FitzGerald, P., & Parkes, K.R. (1982). The Cognitive Failures Questionnaire (CFQ) and its correlates. *British Journal of Clinical Psychology*, *21*, 1-16.

DIGIT SYMBOL SUBSTITUTION TEST (DSST) - VERSION 1

SAMPLES																								
2	1	3	7	2	4	8	2	1	3	2	1	4	2	3	5	2	3	1	4	5	6	3	1	4
1	5	4	2	7	6	3	5	7	2	8	5	4	6	3	7	2	8	1	9	5	8	4	7	3
6	2	5	1	9	2	8	3	7	4	6	5	9	4	8	3	7	2	6	1	5	4	6	3	7
9	2	8	1	7	9	4	6	8	5	9	7	1	8	5	2	9	4	8	6	3	7	9	8	6

CTQ

When I was growing up …	Never True	Rarely True	Sometimes True	Often True	Very Often True
1. I didn't have enough to eat.	●	●	●	●	●
2. I knew that there was someone to take care of me.	●	●	●	●	●
3. People in my family called me things like stupid, lazy, or ugly.	●	●	●	●	●
4. My parents were too drunk or high to take care of the family.	●	●	●	●	●
5. There was someone in my family who helped me feel that I was important or special.	●	●	●	●	●
6. I had to wear dirty clothes.	●	●	●	●	●
7. I felt loved.	●	●	●	●	●
8. I thought that my parents wished I had never been born.	●	●	●	●	●
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	●	●	●	●	●
10. There was nothing I wanted to change about my family.	●	●	●	●	●
11. People in my family hit me so hard that it left me with bruises or marks.	●	●	●	●	●
12. I was punished with a belt, a board, a cord, or some other hard object.	●	●	●	●	●
13. People in my family looked out for each other.	●	●	●	●	●
14. People in my family said hurtful or insulting things to me.	●	●	●	●	●

1

When I was growing up …	Never True	Rarely True	Sometimes True	Often True	Very Often True
15. I believe that I was physically abused.	●	●	●	●	●
16. I had the perfect childhood.	●	●	●	●	●
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour, or doctor.	●	●	●	●	●
18. I felt that someone in my family hated me.	●	●	●	●	●
19. People in my family felt close to each other.	●	●	●	●	●
20. Someone tried to touch me in a sexual way, or tried to make me touch them.	●	●	●	●	●
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	●	●	●	●	●
22. I had the best family in the world.	●	●	●	●	●
23. Someone tried to make me do sexual things or watch sexual things.	●	●	●	●	●
24. Someone molested me.	●	●	●	●	●
25. I believe that I was emotionally abused.	●	●	●	●	●
26. There was someone to take me to the doctor if I needed it.	●	●	●	●	●
27. I believe that I was sexually abused.	●	●	●	●	●
28. My family was a source of strength and support.	●	●	●	●	●

CTQ Scoring

Items should be scored on a 1 to 5 likert scale (except for reverse scored items, as indicated) i.e.

Never True = 1
Rarely True = 2
Sometimes True = 3
Often True = 4
Very Often True = 5

Emotional abuse

Items 3, 8, 14, 18, 25

Physical abuse

Items 9, 11, 12, 15, 17

Sexual abuse

Items 20, 21, 23, 24, 27

Emotional neglect

Items 5(R), 7(R), 13(R), 19(R), 28(R)

Physical neglect

Items 1, 2(R), 4, 6, 26(R)

(R) indicates items to be reverse scored.