Research Thesis

Forensic Aspects of Intellectual Disabilities and Autism Spectrum Disorders

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Dedication

To my husband and children for their love and support throughout.

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Statement of Authorship

This thesis is a reflection of the author's work conducted according to HCPC competencies, under the guidance of the University of Nottingham staff and HCPC registered Psychologists.

Preface

This thesis examines aspects of assessment and treatment with a focus on two categories of developmental disabilities, Intellectual Disabilities (ID) and Autism Spectrum Disorder (ASD) as well as forensic issues. The structure of the thesis reflects the role of a Psychologist which includes working with individuals, assessing individuals using assessment tools, implementing interventions and working within a context understanding and influencing other clinical staff.

Chapter two is a case study where an individual with both ID and ASD exhibiting forensic/Challenging Behaviour (CB) is provided with an admission assessment and intervention based on this assessment. This case study acts as an introduction to the thesis as the individual has a diagnosis of both ID and ASD. One of the assessments used in the case study was the Wechsler Adult Intelligence Scale, version 4 (WAIS-IV) (Wechsler, 2008a, 2008b, 2008c) which is the assessment focussed on in chapter three. The WAIS-IV is critiqued along with the application of the tool to people with both ID and ASD. A review of this assessment is timely as its use in the diagnosis of people with ID has recently been criticised by the British Psychological Society (British Psychological Society, 2015).

Chapter four moves from assessment to analyse an individual's interaction with staff, a contextual intervention. Weiner's (1985, 1993)

theory of achievement, motivation and emotion is applied to this. The reason for this topic being selected is evidence from the case study of staff intervention and restraint, being both a response to CB and a trigger for further violence. Chapter five examines the effect of psychotherapeutic interventions on CB as an alternative means of reducing CB. This again relates to chapter two, as within the case study the individual was offered intervention that proved ineffective. Chapter five is a systematic review that focusses solely on psychotherapeutic intervention for people with an ID. There is a paucity of research relating to people with ASD which has led to the focus on people with ID only. The lack of evidence may be due to psychotherapeutic interventions for individuals with ASD not being well developed and needing to be altered, this is referred to in chapter 2.

Abstract/overview

Forensic Aspects of Intellectual Disabilities and Autism Spectrum Disorders

Overview

This thesis reviewed forensic aspects of Intellectual Disabilities (ID) and Autism Spectrum Disorder (ASD). Chapter two was a case study where an individual with ID and ASD who exhibited forensic/Challenging Behaviour (CB) was assessed and intervention offered. Chapter three then focussed on the assessment of people with ID and ASD by critiquing the Wechsler Adult Intelligence Scale (WAIS), version 3 and 4 (WAIS-III & WAIS-IV) (Wechsler, 1997; Wechsler, 2008a, 2008b, 2008c) and discussed application issues for people with ID and ASD. Chapter 4 and 5 examined intervention in more depth. Chapter 4 applied Weiner's (1985, 1993) theory of achievement, motivation and emotion as a way of understanding contextual intervention and Chapter 5 examined the effect of psychotherapeutic interventions on CB.

Chapter Two

The case study discussed in chapter two examined explanations of violence and diagnoses. ASD and an ID were identified as useful neurodevelopmental diagnoses that could be used as a framework to understand the individual's needs. Some explanations of violence were

related to features of these diagnoses. Social factors were also identified as increasing risk. Violence was modelled by a key male figure during childhood development which appeared to have been retained as a template of acceptable behaviour, supporting the work of Bandura on social learning (1973). This, and the experience of being a victim of this violence, also supported the work of Douglas, Hart, Webster and Belfrage (2013) who indicated that social factors can increase the risk of violence. In turn this affected attachment supporting the work of Bowlby (1980). The behavioural approach (Cipani & Schock, 2010) was also applied to identify functions of violence.

A psychotherapeutic intervention was offered to improve one aspect of emotional recognition, face perception, with the aim of enabling him to comprehend visual feedback from the environment, make interpretations about the emotions experienced by others, and modify his behaviour accordingly. There was little difference to his level of skills following the intervention. It was concluded that particular skills development may be difficult for someone with a neurodevelopmental difficulty if the biological structures are not there to support that skill, or skills may take a long time to develop. In this case it was concluded that the best intervention was to consider a placement for him in an appropriate environment that would cater for his ASD and ID related needs. Comments were made about the quality of assessments and for improvements to be considered to formulation and intervention.

Chapter Three

Chapter three was a critique of the WAIS, a tool widely used as part of the process to identify whether someone has an ID. This may determine if an individual may be unfit to plead in court or to determine the services appropriate for that individual's needs. The review focussed on the most recent version, WAIS-IV (Wechsler, 2008a, 2008b, 2008c) but also referred to other versions in particular the WAIS-III (Wechsler, 1997). The conclusion was there were some flaws to the assessments that required further research and also some omissions in the epistemology.

The critique examined different aspects of validity and reliability. The examination of convergent validity yielded mixed results with some positive correlations with other tests and some weak correlations. This difference could be caused by some tests measuring different aspects of '*g'.* The consequences of differences can be significant, for example the scores of the Wechsler Intelligence Scale for Children, version 4 (WISC-IV) (Wechsler, 2003) and the WAIS-IV scores could differ by up to 10 points and could mean individuals moving from a children's to an adult service could become ineligible for the same levels of support. The results for test-retest reliability were good in the short term but more research was recommended to determine if the latest version of the WAIS would be reliable in the long term. The 'Flynn effect' (Flynn, 2007) indicated that levels of intelligence were rising so the WAIS-IV compensated for this and

currently measures intelligence at around 3 points lower than the WAIS-III. The stability of this effect was unclear.

The results for internal reliability were good although more research independent of the WAIS was recommended. The application of the WAIS for individuals with an ASD and ID was considered with the WAIS being found to be a limited tool for discriminating between categories of ASD, although what can be expected is an uneven profile. It was also unclear how useful the WAIS was to discriminate between individuals with a substance misuse/abuse disorder and normal controls. There were also difficulties with the application of the WAIS to individuals with ID. Difficulties measuring intelligence at lower levels were identified as scores can be unstable. Research was also recommended to provide a comprehensive view of the effect upon results of variables such as nationality, gender and age.

Chapter Four

Chapter four was an empirical research project investigating Weiner's (1985, 1993) theory of achievement, motivation and emotion as a means of understanding the responses of unqualified nursing staff to clients with ASD exhibiting CB. One hundred and twenty seven unqualified nursing staff responded to an Attributional Style Questionnaire (ASQ) (Dagnan & Cairns, 2004) and questions based on a vignette. The quantitative results found weak support for Weiner's model. There was weak evidence for the

effect of demographic variables and the type of client (ASD or ID) and the type of service (ASD or Mental Health/ID) did not affect the results. Qualitative data was themed and coded according to Braun and Clarke (2006) and Boyatzis (1998) and provided an insight into the psychological processes influencing staff responses to CB. The results suggested that intervention was influenced by staff, patient and contextual variables. A recommendation was made for a contemporary exploration of the topic and to improve the validity and reliability of the ASQ.

Chapter Five

Chapter five was a systematic review of psychotherapeutic interventions aimed at reducing the CB exhibited by people with ID only due to a paucity of research using people with ASD as participants. A systematic literature search was conducted using 5 databases, a search of relevant journals and contact made with experts. From this 8 papers met the inclusion/exclusion criteria and these were analysed qualitatively. Three types of psychotherapeutic intervention were used within the ten papers, Cognitive Behavioural Therapy (CBT), "Soles of the Feet" meditation and Solution-Focussed Brief Therapy. All types of psychotherapeutic intervention reduced CB although the results of studies using CBT were mixed. There were shortcomings to these conclusions; these were methodological issues such as a need to ensure the consistency of outcome measures and the types of CB used to measure change. The

effect of intervention may have been modified by variables such as length of treatment, the context and intrapersonal variables.

Conclusions

The chapters of this research thesis indicated that neurodevelopmental factors influenced forensic/CB, although social role models, attachment and trauma were also significant. Assessments were important as they may affect fitness to plead and services/treatment offered. Assessments such as the WAIS are supported by research although further research has been recommended. The use of the WAIS with people with ASD and ID was limited as people with ASD appear to exhibit uneven profiles when completing the WAIS and there were inaccuracies when using the WAIS with people with lower levels of intelligence. The difficulties people with ASD have with social communication skills can also affect performance and support is needed when administering assessments.

Intervention for people with a neurodevelopmental difficulty can also be successful. Consideration is needed regarding appropriate intervention for each individual, how long before the intervention is effective, the context including the type of support offered and how that affects outcomes, intrapersonal variables such as intelligence, and whether the treatment includes one to one support. More research of an improved quality is required to determine the effectiveness of both assessment and treatment including contextual based treatment such as the interaction between

staff and patients within an institutional setting. Considering these further would improve the service for this client group and contribute to a reduction of risk.

Key words

Intellectual Disabilities Autism Spectrum Disorder Forensic Challenging Behaviour

1.Introduction

This research thesis is concerned with the assessment and treatment of individuals with an Intellectual Disability (ID) and/or Autism Spectrum Disorder (ASD) who exhibit forensic/Challenging Behaviour (CB). The definitions of an ID and ASD differ.

Intellectual Disability

The term ID refers to a condition previously termed a Learning Disability (American Psychiatric Association [APA], 1994; APA, 2013) where an individual has an Intelligence Quotient (IQ) below 70, they have difficulty with two or more adaptive functions and the problems have been present from before 18. The British Psychological Society (2015) has endorsed the use of the term ID and this definition, although they made recommendations to improve the diagnostic process. They suggested that there could be an emphasis on IQ scores with clinicians also needing to consider full case histories and all aspects of adaptive functioning; conceptual, social and practical. In addition, clinicians should consider the use of assessment tools that have psychometric properties with normalised data based on a population similar to the one being tested. The term ID is also expected to be used within the updated version of the International Classification of Diseases – Version 11 (ICD-11) (Salvador-Carulla et al., 2011) in place of Learning Disability.

Autism Spectrum Disorders

ASD has been subdivided into a number of terms within the Diagnostic and Statistical Manual, Version 4 (DSM-IV) (APA, 1994), including Autistic Disorder, Asperger's Disorder, Childhood Disintegrative Disorder, or Pervasive Developmental Disorder - not otherwise specified. Within the Diagnostic and Statistical Manual, version 5 DSM-V (APA, 2013) ASD is used to categorise all cases defined under the previous headings. Typical behavioural characteristics of ASD are difficulties in social communication and interaction, social-emotional reciprocity, nonverbal communication behaviours as well as developing, maintaining and understanding relationships. There are also difficulties in restricted and repetitive patterns of behaviour, interests or activities. These affect social, occupational and other areas of functioning. The criteria from the International Classification of Diseases, version 10 (ICD-10) (World Health Organisation [WHO], 2010) refers to difficulties in social communications, interaction and imagination and for these difficulties to be present from a young age. The criteria in ICD-11 is expected to revise the definitions of the ICD-10 (National Autistic Society, 2013).

ID and ASD are both examples of developmental disabilities, conditions present from an early age caused by damage to the developing nervous system. The extent and nature of the damage differs between individuals as does the potential for the individual to compensate for their difficulties,

(Gregory, Burton & Shapiro, 2015). ID and ASD are considered to be diagnostically separate, one individual may be regarded as having an ID or an ASD or both.

Challenging Behaviour

Some people with ID, ASD or concurrent ID and ASD exhibit CB. Banks et al., (2007) define CB as behaviour "of such intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion" (p. 14). There is a strong overlap between CB and forensic behaviour. Emerson and Einfeld (2011) identified behaviours defined as CB including kicking, choking, throttling, aggression, biting, punching, slapping and the use of a weapon. In addition to this the types of behaviours identified as CB by Tenneij and Koot (2008) included oppositional behaviour, substance use, difficulties with impulse control, and inappropriate sexual behaviour. Alternatively Alborz, Bromley, Emerson, Kiernan and Qureshi (1994) categorised CB into 4 categories; aggression, destructive behaviour, self-injurious behaviour and other CB. Sexualised behaviour could also be added as suggested by Heyvaert, Maes and Onghena (2010).

A number of such behaviours if exhibited within a community or custodial setting would be regarded as a serious offence. Observations by the

author within custodial and healthcare settings are that CB of this nature is usually recorded as an incident but is not always reported to police and even if a report is made the individual is not always charged. This means that despite the overlap between CB and forensic behaviour police records do not always reflect an individual's forensic history. In addition when an individual moves services a record of their forensic behaviour is not always maintained as records of incidents are not always forwarded. This was supported by Lindsay et al., (2004) and acknowledged by Lyall, Holland and Collins (1995).

The precise profile of forensic/CB in a population with ID is unclear, although its reduction is important to improve the lives of those exhibiting the behaviour and those around the individual. The goal of a Forensic Psychologist in this transaction is the effective assessment and intervention of offenders with an ID and/or ASD. This thesis reflects the complexity of a Psychologist's role; working with individuals directly, assessing individuals with an ID and/or ASD using assessment tools, working within an individual's context by understanding and influencing support staff who work with an individual and using psychotherapeutic interventions to support an individual.

2.Case Study

2.1. Abstract

This was a case study of an offender with an Intellectual Disability (ID) admitted to a high secure hospital who had a history of violence towards peers and staff. Both Dysexecutive Syndrome and Autism Spectrum Disorder (ASD) were investigated as possible diagnoses with ASD being supported. A particular deficit was found in face perception, or the ability to determine the emotion of another person from the expression on their face (Adolphs, 2002). This is a skill which is crucial to emotional recognition and supports individuals to perceive that mental states of other people may be different, 'Theory of Mind' (Attwood, 2007). This was the focus of the intervention using visual materials to review the shape of parts of a face during different emotions. The post treatment assessments indicated little change in the client's skills. One explanation for this could be that particular skills may be difficult for an individual with ASD to learn, as they arise from neurodevelopmental difficulties. This has implications for therapeutic goals.

2.2. Introduction

Context and referral

The context of this case study was an ID service within a high secure hospital, one of three high secure hospitals within the UK and the only high secure service for people with an ID in the country. The patient will

be referred to as Patient x to protect his anonymity. The case commenced as an admission assessment with Patient x being admitted to the service in November 2013 from a Medium Secure Unit following an incident. This occurred whilst Patient x was walking in the previous hospital's grounds, and for no reason apparent to those with him he threw branches at parked cars. According to staff he became verbally abusive and threatening. A 5-person team was used to restrain him and return him to the hospital building. Within the building air lock he kicked a staff member, damaging their leg to such a degree that they were unable to return to their post as a nurse. The behaviour exhibited during this incident conformed to a pattern of seemingly unprovoked violence and aggression exhibited towards both staff and peers. His records also indicate he has damaged property and self-harmed.

The admission assessment for Patient x was 6-months in duration during which data was gathered, a formulation compiled and treatment needs identified. The author worked independently as part of a multi-disciplinary team to achieve this under the supervision of the Lead Psychologist. The aim of the assessments and formulation were to understand why his behaviour was at times violent and occurred without an apparent trigger. Three possible diagnoses were investigated; Dysexecutive Syndrome, ASD, and ID. Following this the author then went on to provide a person-centred or individualised intervention in accordance with Department of

Health (2001) guidelines, which recommends that each individual with a developmental disability must be assessed and treated on an individual basis.

Intellectual Disability

The theory and research relevant to the case relates to theories of ID, ASD and violence. The term ID refers to a phenomenon that used to be termed a Learning Disability (American Psychiatric Association [APA], 1994; APA, 2013) where an individual has an Intelligence Quotient (IQ) below 70, they have difficulty with two or more adaptive functions and the problems have been present from before the age of 18. The British Psychological Society (2015) published guidance on the assessment and diagnosis of ID which endorsed this definition, although recommendations were made to improve the diagnostic process. The term ID is also expected to be used within the updated version of the International Classification of Diseases – Version 11 (ICD-11) (Salvador-Carulla et al., 2011) in place of Learning Disability. The causes of an ID are wide-ranging with explanations including genetic abnormalities, prenatal illnesses such as rubella, environmental contaminants, or a combination of both genetic predisposition and other factors. No one explanation applies to each individual, and in some cases there are no clear explanations (Gates, 2007). Having an ID is a lifelong state and is not something someone 'recovers' from (Emerson-Dickman, 1996).

The difficulties an individual with an ID experiences include the way they interpret and respond to the social world, as well as learning and communication (Gates, 2007). The impairments associated with ID identified by a Wechsler Adult Intelligence Scale – Version 4 (WAIS-IV) (Wechsler, 2008c) are difficulties with verbal comprehension, visual perception, working memory and processing speed. These limitations will affect an individual's ability to think flexibly and creatively and understand abstract concepts. Difficulties with these features of communication will affect the rapport a professional is able to build with a client, an important factor in assessment and intervention (Jorgensen, 1992). There are ways in which individuals can be supported to compensate for these which include repetition, using visual communication, and making abstract concepts concrete. However, these strategies are not without their shortcomings; for example, visual communication can be difficult if the individual does not understand the concept a picture is meant to convey (Powell & Kwiatek, 2006).

Autism Spectrum Disorder

ASD has been subdivided into a number of terms within the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (APA, 1994), including Autistic Disorder, Asperger's Disorder, Childhood Disintegrative Disorder, or Pervasive Developmental Disorder - not otherwise specified.

Within DSM-V (APA, 2013) ASD is used to categorise all cases defined under the previous headings. Typical behavioural characteristics of ASD are difficulties in social communication and interaction, limited social-emotional reciprocity, limited nonverbal communication behaviours as well as difficulties developing, maintaining and understanding relationships, and also, difficulties arising from restricted and repetitive patterns of behaviour, interests or activities. Difficulties are present from an early age and affect social, occupational and other areas of functioning. The criteria from International Classification of Diseases, version 10 (ICD-10) (World Health Organisation [WHO], 2010) refers to difficulties in social communications, interaction, and imagination, and for these difficulties to be present from a young age. The criteria in ICD-11 is expected to revise the definitions of ICD-10 (National Autistic Society, 2013).

ASD is diagnosed by collating behavioural information, interviewing professional carers, family members and then applying clinical judgement (McGregor, Nunez, Cebula & Gomez, 2008). The phenomena was first defined and recorded by Kanner (1943) and Asperger (1944). Since that time there has been an increase in the awareness of ASD, with Lorna Wing (1981) and Uta Frith (2003) furthering both research and practice. In terms of causes, there is thought to be a genetic predisposition for Autism (Bailey et al., 1995). This may result in abnormalities in the brain

(Courchesne, Townsend & Saitoh 1994), or neurotransmitters (McDougle, 1997). However, there is currently no agreement on the causes of limitations, although it is accepted that ASD is a neurodevelopmental abnormality present from an early age (McGregor et al., 2008). Further theories include an understanding of difficulties with theory of mind which is an inability to understand the mental states of others (Happe, 1994) and weak central coherence which is where an individual focuses on the detail of the context rather than perceiving the whole (Frith, 1989). People with ASD may also have deficits in executive function, which include attention, memory, planning and reasoning (Ozonoff, Pennington & Rogers, 1991). However, precise deficits are not clear, and these theories are still being researched and discussed.

Dysexecutive Syndrome

A diagnosis suggested for Patient x was also Dysexecutive Syndrome which refers to a group of symptoms usually resulting from brain damage, and covers dysfunctions in executive functioning such as planning, abstract thinking, flexibility and behavioural control (Ozonoff, 1997). This was suggested as a useful framework for understanding the needs of Patient x in a report dated 2008. The difficulty with differentiating between the diagnoses of ID, ASD and Dysexecutive Syndrome is that they all have an association with deficits in executive function (Ozonoff et al., 1991; Seidman, Beiderman, Monuteux, Doyle & Faraone, 2001; Stuss

& Alexander, 2007). The pattern and nature of these deficits is not defined within literature or within diagnostic manuals such as the ICD-10 (WHO, 2010) which may be because the pattern of deficits is person-specific. A further difficulty is that Dysexecutive Syndrome is not mentioned within ICD-10 (WHO, 2010) so there are no guidelines on its diagnosis. This case therefore had to use assumptions based on available research. As stated Dysexecutive Syndrome is thought to arise from brain damage so the pattern of deficits would be expected to be specific rather than global. A depressed score for IQ for all indexes tested by the WAIS-IV, a globalised deficit, would be associated with an ID. The level of IQ, if below 70, is one of the criteria used for diagnosing an ID (Wechsler, 2008b) although not the only criteria.

Deficits Associated with Diagnostic Categories

As outlined there are two distinct sets of criteria to enable a diagnosis for ID and ASD to be made. However, there are indications that there is some overlap in symptoms. Ozonoff et al., (1991) referred to a wide range of deficits in ASD; attention, memory, planning and reasoning which are also associated with an ID (Gates, 2007). It could be posited that this highlights the limitations of diagnostic labels and why the British government recommended person-centred care in 2001 (Department of Health [DoH], 2001) where each individual with a developmental disability must be assessed and treated on an individual basis. A drive towards

distinguishing between diagnoses is characteristic of the hypothetico-deductive model associated with the medical profession whereas the biopsychosocial model is used by applied Psychologists (Engel, 1980; British Psychological Society, 2011), all aspects of an individual are considered and this conforms more closely to the DoH (2001) guidelines.

A further exploration of the seeming overlap suggests a qualitative difference between the two diagnoses. If functional fixity, which refers to an approach to problem solving involving the repeated use of the same solutions (Attwood, 2007) is used as an example, the theories relating to each diagnosis may explain the differences between similar presentations. It may be that individuals with ASD are unable to perceive situations in their entirety, instead perceiving the context in parts or sections. This was suggested by the Empathising-Systemising Theory (Baron-Cohen, 2009) and the Theory of Weak Central Coherence (Frith & Happe, 1994). People with an ID are understood to have difficulties with learning, requiring education tailored to their needs, repetition and ongoing support to learn perhaps beyond school age (Flores, Shippen, Alberto & Crowe, 2004). This indicates they can learn new skills but that the limits to their ability to take in information on a particular occasion may make it difficult for them to perceive the number of options available and select the most viable or positive option. Thus there are different explanations for the overlap, yet it requires more research to clarify similarities and

differences between the two categories, as recommended by Matson and Shoemaker (2009).

Violence

The behaviour of people with ASD can develop abnormally, for example the metacognition required for Theory of Mind can be impaired, making it difficult to recognise the emotions of others or to read expressions. This can cause impairments in emotional recognition. The term emotional recognition can refer to a wide range of skills such as the ability of an individual to recognise and identify their own emotions (Salovey, Mayer & Caruso, 2004) or infer what emotions another person is experiencing (Mayer & Geher, 1996). Deficits in emotional recognition affect an individual's ability to gain 'feedback' from the environment enabling them to understand the effect their behaviour is having on another person (Dawel, O'Kearney, McKone & Palermo, 2012). This means an individual may not be able to modify their behaviour as they do not understand that they are causing fear or anger. In this study one aspect of emotional recognition was focussed on. This was face perception or the ability to determine the emotion of another person from the expression on their face (Adolphs, 2002).

Face perception appears to be a skill crucial to reading emotional social cues and building and maintaining relationships. There is a wide range of

research analysing face recognition. One area of the epistemology suggests that face perception occurs at a young age.

Infants of two days old have been observed mimicking the facial expressions of an exhibitor's emotions. Despite these observations of early behaviour it is unclear if these response are associated with a recognition of the emotion being expressed (Field & Fogel, 1982). Infants of 7 months old appear to modify their attention according to the qualitative nature of the emotion being displayed (Peltola, Leppanen, Palokangas & Hietanen, 2008) which suggests that infants at this age can discern between emotions and their skills have developed. Another area of research concerns the interaction between an infant and its mother and a child's apparent need for a reciprocal relationship. Children of 6 to 16 weeks are expectant of a response from their mothers and become distressed when this does not occur (Fogel, Diamond, Longjorst & Demos, 1979). The fact that face perception occurs at a young age indicates that it serves some key purpose. This is supported by Fridlund (1994) who posited that emotional expression conveyed information about the exhibitor's intentions and linked this to an evolutionary theory that an emotional display can invite proximity or suggest distance from another.

Reciprocal social interaction is an area understood to be limited in people with Autism who were observed to be isolated individuals or 'autos'

(Kanner, 1943). The development of facial recognition (Scherf, Behrmann & Tarr, 1999) was found to be impaired in people with ASD, however the research is unclear as to whether this impairment was due to a genetic abnormality and associated with a limited interest or attention for faces. There therefore appears to be some difference between people with Autism and those exhibiting normal developmental trajectories. Beaton et al., (2009) identified a biological basis for this as the Fusiform Face Area (FFA) in children with Autism was found to have lower neuronal density in this area. Face perception is therefore a skill required for emotional recognition which starts developing at a young age and develops abnormally in an individual with Autism although the explanation for this is unclear. This is likely to affect social interaction, as an individual with Autism cannot 'read' the emotional cues from another individual and modify their behaviour accordingly.

As well as these intrapersonal factors, environmental factors can affect behaviour. The behaviour of a 'model' within the environment, for example a main carer can influence behaviour (Attwood, 2007). This is supported by theories such as Bandura's (1973) Theory of Social Modelling and Bowlby's work on attachment (Bowlby, 1980). The behaviour of a main carer acts as an example of how to behave and can also affect an individual's view of the social world; whether it is secure or associated with anxiety or fear. The role of trauma, in particular abuse, is

significant. Victimisation, trauma and unsupportive or abusive parenting are understood to increase the likelihood of violence (Flannery, Singer & Webster, 2001; Tremblay et al., 2004; Neller, Denney, Pietz & Thomlinson, 2006). Violence can also be understood in terms of the function it serves. For example, violence can be used to obtain a tangible reward or to avoid an unpleasant stimulus, for example being asked to complete an undesirable task (Cipani & Schock, 2010).

To understand the violence committed by this individual an assessment of Historical, Clinical and Risk factors, Version 3 (HCR-20 V3) was completed by the author (Douglas, Hart, Webster & Belfrage, 2013). The assessment acknowledges the role of both historical and current factors as well as biological and environmental factors and relates this to violence. The scores from the HCR-20 V3 are included in section2.3.

2.3. Assessment, Analysis and Formulation

The methods used to gather data for the formulation were a review of the case file, interviews with the patient, psychometric assessments and discussing the case with other professionals. The purpose of the assessment was to identify the causes for violence and compile a formulation to enable treatment needs to be identified.

2.3.1. HCR-20 V3 Risk Assessment

Table 1: Results of the HCR-20 V3 for Patient x.

Factor	Presence	Relevance
H1 Violence	Yes	High
H2 Other antisocial behaviour	Possible	Medium
H3 Maintains relationships with family	Yes	High
H4 Employment	Omit	Omit
H5 Substance use	No	Low
H6 Major mental disorder	Yes	High
H7 Personality disorder	No	Low
H8 Traumatic experiences	Yes	High
H9 Violent attitudes	No	Low
C1 Insight	Yes	High
C2 Violent ideation of intent	No	Low
C3 Symptoms of major mental disorder	Yes	High
C4 Instability	Yes	High
C5 Treatment or supervision response	Possible	Medium
R1 Professional services	No	Low
R2 Living situation	No	Low
R3 Personal support	No	Low
R4 Treatment or supervision response	No	Low
R5 Stress or coping	Yes	High

The risk items identified as 'high' are:

- H1 Violence
- H3 Maintains Relationships with Family
- H6 Major Mental Disorder
- H8 Traumatic Experiences
- C1 Insight
- C3 Symptoms of Major Mental Disorder
- C4 Instability
- R5 Stress or Coping

2.3.2. Case History

Patient x is the middle child of a sibling group of five. His parents are separated and his father's whereabouts are unknown. Patient x has no contact with his father and does not wish to contact him at present. Patient x reports that his father was both physically and emotionally abusive towards him and physically abusive towards his mother and siblings. He reportedly has a good relationship with his mother and maintains telephone contact.

As a child he was late meeting developmental milestones, he was over active, demonstrated an impoverished attention span, and presented with behavioural problems as he would easily become distressed. He was a poor sleeper and engaged in head-banging and screaming. At the age of 7 he was referred to a Consultant Paediatrician because of his hyperactivity,

and was treated during childhood for Attention Deficit Hyperactivity Disorder. His mother has confirmed an early diagnosis of Autism, and in addition cognitive performance levels during childhood were suggestive of an ID. As he grew, he increasingly displayed challenging behaviour at school (e.g. physical aggression directed towards people and property, self-injury and absconding) requiring behavioural intervention and close supervision.

Because of behavioural difficulties he was moved from one school to another, being educated in either special units at mainstream schools, or within the special school system. As he got older he began to display more serious behavioural problems at school. These included numerous outbursts of physical aggression directed towards people and property. He was also self-injurious and would abscond and place himself in dangerous situations as a result. His behaviour meant he needed to be supervised by an adult when out in public at all times. He made limited academic progress and at age fourteen years his reading age was estimated to be six years and eleven months.

At three months he was suspected of having epilepsy and at two years he was suspected of having meningitis. An electroencephalogram (EEG) was performed during 2001 or 2002 with the results being normal. In September 2006 he had squint surgery and in October 2007 the

ophthalmic surgeon advised glasses for myopia and a review regarding further squint surgery. There are a number of recorded incidents of either a removal of a foreign object from a bodily orifice, such as the ear, nose or the penis's meatus, or investigations to assess for suspected insertion or referral for an investigation.

Patient x appears to have experienced ongoing difficulties with interpersonal relationships. His behaviours were characterised by impulsivity and poor emotional control. A Calderstones Autism Screening Tool (CAST) conducted in 2012 suggests that Patient x appeared unaware of other's feelings and showed little empathy or remorse for his actions. They noted that Patient x did not like change, and that whilst he interacted to a limited degree with others, he appeared to have no understanding of reciprocal relationships or interest in forming friendships. Patient x was noted to have poor eye contact, even when engaging in friendly conversation. In 2001 it was noted that his attempts at friendship were often immature, with incidents of a sexual nature noted in 2002, these were not specified in the case file. The records indicate incidents of sexual assault. Patient x reported that he was the victim of an assault whilst in a park. He has also made allegations about being the victim of a sexual assault perpetrated by another patient within his previous setting. These reports were passed on to a Nurse Specialist for

further assessment. At the conclusion of this case study the allegations were yet to be investigated.

He has a long history of contact with psychiatric services. He has been detained continuously on a Section 3 of the Mental Health Act (DoH, 2007) for treatment since 2000, but his section was changed to Section 37/41, a hospital order with restrictions, after his index offence. Reports from 2010 mention thought disorder, paranoid ideas about people trying to kill him, and believing that staff were speaking about him. He believed falsely that his niece was involved in a car crash, and accused the doctor and the staff of causing the accident. He made calls to his mother stating that his friend had died in a car crash and wanted to arrange the funeral for them. He also attempted to contact the police using a mobile phone. He stated that his brother had died and complained of chest pains, palpitations, dizziness and extreme anxiety. He made comments that a man with a beard and paper hat was coming to rape him, and believed his discharge date was going to be in tomorrow's paper and everyone would know about it. The possibility of this being a quasi-psychotic episode induced by stress was discussed. An increase in anxiety had been noted to be associated with a possible change in placements.

2.3.3. Dysexecutive Syndrome

The initial aim was to examine whether Dysexecutive Syndrome caused by frontal lobe damage, as suggested by a previous report, could contribute to an understanding of patient x's needs. To address this a Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV) (Wechsler, 2008c) and the Cambridge Executive Functioning Assessment (CEFA) (Ball, Holland, Treppner, Watson & Huppert, 2008) were used. The results of these assessments should indicate if deficits were global, commensurate with an ID, or in a specific area of functioning, indicative of Dysexecutive Syndrome. Patient x has previously been assessed using the Wechsler Adult Intelligence Scale (WAIS); his Full Scale Intelligence Quotient (FSIQ) scores being 58 and 52. Previous reports did not provide figures for 95% confidence intervals or a breakdown of scores for different indexes such as verbal comprehension. It was also unclear from the records which version of the WAIS had been used. The use of the FSIQ as a definitive figure of an individual's IQ does not reflect the wealth of information provided by the application of the WAIS or acknowledge the factors that could affect a score such as mood (Wechsler, 2008a).

Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV) (Wechsler, 2008c)

The WAIS-IV is a standardised assessment of intellectual functioning. Administration of the WAIS-IV results in scores for verbal and non-verbal

reasoning. These are defined as scores for Verbal Comprehension, Perceptual Reasoning, Working Memory, Processing Speed and a composite Full IQ score (FSIQ). These scores are used to provide information about an individual's personal strengths and weaknesses for non-verbal reasoning, spatial processing skills, visual motor integration, attention to detail and acquired knowledge. The scores can also provide information about how the individual compares to same age peers. The report writer for the WAIS-IV was used to interpret the results (Wechsler, 2008d).

Observations During Testing

Patient x completed the assessment over two sessions and appeared motivated to engage. He stated that he enjoyed assessments of this nature and felt that he had performed well. He was dressed casually and looked in good order, clean and tidy. He had met the examiner before and stated that he was willing to complete the assessment. He did not report any visual, auditory or motor difficulties. However, the ward staff had requested an eye test and he had recently been given glasses which he was not wearing. This may have affected his performance on the assessment.

General Intellectual Ability

Patient x was administered 10 subtests of the WAIS-IV, from which his IQ and index score were derived. Patient x's overall intellectual ability, as measured by the Full Scale IQ (FSIQ), was in the *extremely low* range (current testing episode = 51: 95% confidence interval = 48 – 56). Therefore, his overall thinking and reasoning abilities exceed those of only approximately 0.1% of individuals his age. This suggested Patient x may experience difficulty in keeping up with his peers in a wide variety of situations that require thinking and reasoning abilities.

The analysis of strengths and weaknesses indicate that the FSIQ score should be treated with caution due to an uneven profile, in line with guidelines on interpretation within the WAIS-IV manual (Wechsler, 2008b). The comparison of scores across indexes indicated a statistically significant difference between perceptual reasoning and working memory and perceptual reasoning and processing speed with **perceptual reasoning** being an area of relative strength for Patient x. This score was compared with previous scores which include one of 52 which falls within the confidence interval of 48 – 56 and is in keeping with the current score. The other score was 58 which is above the confidence interval and could indicate a number of issues, for example the effect of a context on an individual's performance or the use of a different version of the WAIS, as the Wechsler Adult Intelligence Scale, version 3 (WAIS-III) (Wechsler,

1997) provides a higher score than the WAIS-IV (Wechsler, 2008b). The difference is around 3 points which would mean an individual scoring 58 on a WAIS-III would score 55 on a WAIS-IV which would then fall within the confidence interval. Without more information the explanation for the difference cannot be identified.

As well as the lack of information about versions of the WAIS the profile of indexes was not available making test-retest comparisons difficult. It is unclear if he has always been found to have scores where there are statistically significant scores between indexes or whether this is particular to this administration. Overall his scores vary by 7 points between the highest and lowest which indicates that he is likely to have an IQ within the 50s. His scores for all indexes are in the extremely low range indicating limitations in all areas.

Table 2: Patient x's composite WAIS-IV scores and descriptive range for 2014

Index	FSIQ	VCI	PRI	WMI	PSI
Composite Score 95% confidence interval	48-56	57-68	59-71	49-63	47-63
Range	Extremely Low	Extremely Low	Extremely Low	Extremely Low	Extremely Low

Key: **FSIQ**, Full Scale Intelligence Quotient **VCI**, Verbal Comprehension Index **PRI**, Perceptual Reasoning Index **WMI**, Working Memory Index **PSI**, Processing Speed Index

Indexes

Verbal Comprehension (VCI)

The VCI is designed to measure verbal reasoning and concept formation. Patient x scored in the *extremely low* range and above the scores of 0.5% of his peers (current VCI = 57 – 68). Patient x scored comparably on the subtests comprising the VCI score, suggesting the various verbal cognitive abilities measured by these subtests are similarly developed. However, he may experience great difficulty in keeping up with his peers in situations that require verbal skills. Patient x has been observed to have limited verbal interaction with peers and staff, preferring to limit his interaction to getting his needs met rather than interacting socially.

Perceptual Reasoning (PRI)

The PRI is designed to measure fluid reasoning in the perceptual domain with tasks that assess nonverbal concept formation, visual perception and organisation, visual-motor coordination and learning. Patient x scored in the *extremely low* range and above the scores of approximately 1% of his peers (current PRI = 59 – 71). Patient x performed comparably on the perceptual reasoning subtests contributing to the PRI, suggesting that his visual-spatial reasoning and perceptual-organisational skills are similarly developed. Patient x has found that picture based communication is helpful for him, for example having a visual timetable for the week and for his treatment pathway.

Working Memory (WMI)

The WMI is designed to measure ability to sustain attention, concentrate, and exert mental control. Patient x scored in the *extremely low* range and above scores of approximately 0.1% of his peers (current WMI = 49 – 63). He had difficulty with both subtests in this scale, which both demand mental control. This means he found it difficult to attend to and hold information in his short-term memory while performing some operation or manipulating it, and then correctly producing the transformed information. Patient x's attention has been observed to depend on the task being completed. The WAIS was less engaging for Patient x as it requires a high level of attention and concentration on a task that has no discernible reward for him.

Processing Speed (PSI)

The PSI is designed to measure ability in processing simple or routine visual material without making errors. Patient x scored in the *extremely low* range and above approximately <0.1% of his peers (current PSI = 47 – 63). Patient x's performance on the subtests that compose the PSI are equal. He will experience significant difficulty processing simple or routine visual material without making errors. Patient x has been observed to need time to process verbal information, for example to follow requests to leave the day room and enter the therapy room. When

being interviewed he needs to be given time to consider the question and respond.

Strengths and Weaknesses of the WAIS-IV

It should be noted that the WAIS-IV (Wechsler, 2008b) has been examined by researchers. The results published with the assessment indicate a high value for internal consistency. This was confirmed by Benson, Hulac and Kranzler (2010) when they independently assessed the WAIS-IV. However, they suggested that the Cattel-Horn-Carroll theory (McGrew, 2009) was a more useful way of interpreting results. Whitaker (2012) also had some concerns, as it does not measure low scores accurately. However, the scores they refer to are below 50 and this does not relate to Patient x. The weaknesses of the assessment mean that clinical observations of an individual's presentation is essential to ensure the score accurately reflects an individual's ability, rather than their ability to perform a test. In the case of Patient x his scores appeared to match his presentation on an everyday basis as identified by the 'real world' observations made throughout the report and his performance is understood to match his ability.

Cambridge Executive Functioning Assessment (CEFA) (Ball et al., 2008)

The CEFA is an assessment of executive functioning which is designed for people with a mild to moderate Intellectual Disability. Within the

assessment participants are given a number of tasks which require the use of different aspects of working memory, see Appendix 1 check for a description of subtests.

The following table, 3, details the scores obtained when the CEFA was administered with Patient x and the scores obtained when the CEFA was used with individuals with Down's Syndrome (DS) and Mild Intellectual Disabilities (MID), equivalent to an IQ of between 50 and 69 between the ages of 36 – 45 (Ball et al., 2008). The IQ and age range match Patient x.

Table 3: Results of Patient x on the CEFA with comparative results.

Test	Results of Patient x	Mean of scores individuals with DS/MID	SD of scores individuals with DS/MID	Z scores comparing results of Patient x and individuals with DS/MID
Cats and Dogs	16	10.4	6.2	0.9
Spatial Reversal	4	3.4	2.7	0.22
Weigel Sorting Task	4	2.1	1.1	1.72
Tower of London	9	9.0	2.4	0
Scrambled Boxes	7	8.7	2.1	-0.8

Object Memory	3	7.0	2.6	-1.53
Prospective Memory	3	-2.8	1.5	0.13
Memory for Sentences	44	30.9	11.6	1.13

In comparison to a group of individuals with DS and MID the z scores indicate Patient x's scores were comparable for the Tower of London and within 1 standard deviation for Cats and Dogs, Spatial Reversal, Scrambled Boxes and Prospective Memory. The scores were over 1 standard deviation and positive or higher than the 'norms' for the Weigel Sorting Task, Object Memory and Memory for Sentences. The scores were negative and over 1 standard deviation away from the 'norms' for Object Memory. In conclusion the scores do not indicate that Patient x has a marked deficit in comparison to individuals with an MID on executive functioning. During the assessment there was evidence of his using working memory to perform tasks but the processing speed was slow and his approach to tasks could be formulaic.

His approach to problem solving could also be inflexible with the same strategy being used repeatedly even when it produced an undesired outcome. He was able to complete tasks requiring the following skill with a cue or prompt, abstracting common principles from a task, set shifting and retrieving information from memory. He could also complete a simple

task, and retrieve a limited amount of information with a cue. Overall, he had an ability to control his behaviour, a tendency to rely on established strategies to address problems, and sometimes required prompts to be able to complete tasks. It should be noted that the CEFA was designed for individuals with an Intellectual Disability but its utility with people with ASD is unclear. The results of the CEFA match those of the WAIS-IV as they indicate global rather that discrete impairments suggesting that the results are valid. The results also match observations of the patient where there is a paucity of social interaction, varied problem solving and interest in hobbies which demonstrate difficulties in all areas of adaptive function which British Psychological Society (BPS) guidelines suggest are indicative of an ID (BPS, 2015).

The conclusion from a file review and assessments was that there was no evidence of an acquired brain injury sustained during adulthood, although he may have acquired a brain injury during childhood due to possible meningitis or epileptic seizures. The evidence indicates that the client's behavioural issues were present from an early age and he was diagnosed with an ID at a young age. The evidence from both the WAIS-IV and the CEFA indicate a globalised deficit in intellectual and executive functioning commensurate with an ID, rather than Dysexecutive Syndrome or a deficit arising from brain injury.

2.3.4. Autism Spectrum Disorder

The assessment for symptoms of Autism used the Autism Diagnostic Observation Schedule, version 2 (ADOS-2) (Lord et al., 2012), the informant-based Scale of Pervasive Developmental Disorder in Mentally Retarded Persons (PDD-MRS) (Kraijer, 1997) and the "Reading the Mind in the Eyes" task (child version) (Baron-Cohen, Wheelwright, Spong, Scahill & Lawson, 2001). The ADOS-2 was completed by two qualified Psychologists trained to conduct the assessment, not the author.

Autism Diagnostic Observation Schedule (Version 2) ADOS-2 (Lord et al., 2012). ***This section was written by the psychologists qualified and trained to administer this assessment.***

Patient x was assessed using ADOS-2 Module 3 (appropriate for adolescents or adults with mild/moderate Intellectual Disabilities). The session includes interview and activities, with the focus being observing social interaction style and communication, as well as presentation of any stereotyped or repetitive behaviours. Generally, Patient x responded well during the session and he engaged in all activities. It should be noted that some of the tasks may not have been age-appropriate for Patient x, which may have resulted in slightly elevated scores, but overall the scoring reflected his functioning during the tasks.

In the language and communication domain Patient x demonstrated some relatively complex speech, but his speech was rated as abnormally flat and toneless. There was some lower level repetition of words or phrases, but no echolalia. In terms of offering information Patient x rarely offered information spontaneously, or expressed any interest in the examiners' thoughts, feelings or experiences (the context of high secure setting was taken into consideration). He only reported events on specific probing, and there was little reciprocal conversation. There was very limited spontaneous use of conventional, informational or descriptive gestures.

In the reciprocal social interaction domain, poorly modulated eye contact and absence of social direction of facial expressions was observed. He showed little or no expressed pleasure in the interaction, but seemed to enjoy the non-interactive component of ADOS-2 activities. In terms of the emotions of others he communicated some limited understanding/labelling of emotion in others during a story task. He showed some limited insight into typical social situations and relationships, and there was a slightly unusual quality to the very limited social overtures made, with responses restricted in range and content, even given the assessment scenario. He showed relatively little concern as to whether the examiner was paying attention to him, and interaction was markedly one-sided. Finally, imagination/creativity was very limited

when the opportunity was given, with a tendency to be rather concrete and literal in his interpretations.

Patient x did not show evidence of any circumscribed or repetitive interests, compulsions or rituals during the session, nor did he have any unusual mannerisms or posturing. He did not demonstrate unusual sensory interests in the session.

ADOS Classification

The ADOS-2 Module 3 algorithm addresses communication, impairments in reciprocal social interaction, imagination/creativity, and stereotyped behaviours/restricted interests. The algorithm is based on Diagnostic and Statistical Manual, version 4 (DSM-IV)/ICD-10 criteria for Autism.

Patient x scored 20 on the Social Affect (SA = Combined Communication and Social Interaction score). However he presented with few restricted /repetitive behaviours (RRB score 1). The total score (SA + RRB) exceeds the score for an ADOS-2 classification of Autism (9). The ADOS Comparison Score gives a measure of the overall level of Autism spectrum related symptomatology. Based on this assessment, the ADOS-2 Comparison Score was 10 (with scores above 8 representing a **high** level of autistic spectrum related symptoms). This suggests that Patient

x's scores are within the range of that obtained by a high proportion of participants with Autism. This said, it should be noted that his score on restricted /repetitive behaviours was low, although this does not preclude the indication of Autism on the ADOS-2.

The remainder of the text of the case study and thesis was written by the author.

There are limitations to the results of the ADOS-2. The ADOS-2 is designed to diagnose ASD but does not make adequate adaptions for people with an ID. The subtests that were used were designed for the level of understanding of a child, similar to someone with an ID, but the materials were age inappropriate when used with adults. To overcome the possibility that this would have affected the outcome of the assessment two further tools were used.

A second limitation was that Patient x's family were not interviewed. A structured interview was recommended to be completed alongside the ADOS-2 by the ADOS-2 manual (Lord et al., 2012). Based on the author's professional experience a diagnosis of ASD can be made following a screening interview where developmental stages, family background and the individual's behaviour as a child and an adult, if applicable, are discussed. If a diagnosis is considered to be beneficial, and the parents are supportive, a full diagnostic interview can be conducted. This is

lengthy and examines an individual's developmental history, the behaviour that relates to the diagnostic criteria and sensory needs (Wing, Leekam, Libby, Gould & Larcombe, 2002). Any process that does not interview family is limited as this interview is a source of in-depth understanding about an individual. This means that the conclusion based on the assessments for ASD used in this case was limited (Midence & O'neill, 1999). However, there are indications from the case history that the characteristics relating to ASD have been present since the developmental phase and the results of the ADOS-2 are likely to be consistent with a pervasive developmental disorder.

Scale of Pervasive Developmental Disorder in Mentally Retarded Persons (PDD-MRS) Kraijer (1997).

The PDD-MRS was designed for assessing Pervasive Developmental Disorder (PDD) (Autism) in adults with Intellectual Disability, using an informant's observations of the client in the previous 2-6 months.

This assessment was conducted with Patient x's, Named Nurse as an informant. A number of traits were identified in social interaction, language or speech. Some dependence on routines was noted, with unusual excessive anxiety if too many things were happening at once. No obsessive interests or stereotyped handling of objects were noted, although unusual postures and grimacing were. Unpredictable behaviour

was noted particularly when the environment was busy. The PDD-MRS score was 12, which places him in the range typical of those with PDD. The mean for those with a diagnosed pervasive developmental disorder is 13.19 and the z score was -0.32 which meant the results for Patient x were within 1 standard deviation from the mean.

There are significant strengths to this assessment. The PDD–MRS is designed for people with an ID and to identify ASD, although the assessment uses the terms Mental Retardation and Pervasive Developmental Disorder (PDD). It uses an observer to rate the presence of PDD which means it can be used across levels of ID and across ages from 2-55. Kraijer and de Bildt (2005) found a good sensitivity for the normative sample, 92.4%. However, there are no norms for a high secure sample.

Reading the Mind in the Eyes (Child Version) (Baron-Cohen et al., 2001)

This assessment is based on the concept of Theory of Mind, or the ability to attribute mental states to oneself or another person. It is understood that people with Autism tend to have a difficulty with this task. The assessment tests Theory of Mind using 28 photos depicting the eye region of both male and female faces. Each picture is associated with four words and the respondent is asked to select which word best describes the

emotions and cognitions being depicted. Patient x completed the assessment during April 2014 within one session.

Patient x identified the emotions and cognitions for 9 of the 28 photos correctly, which indicates a marked deficit in this skill. There are no adult ID norms for this assessment. However, his score is similar to the score obtained by children with Asperger's syndrome and males and females of between 6 and 8 years old. His incorrect responses indicate difficulties with interpreting negative emotions such as scared, worried and sad. However, there are difficulties with this assessment. The norms for the "Reading the Mind in the Eyes" test were for children and even then it was unclear how well Patient x understood the abstract terms used in the assessment (for example, ashamed, serious and daydreaming). Despite this the assessment is simple to administer, making it suitable for people with an ID (Baron-Cohen et al., 2001).

Despite the difficulties presented by some of the assessments the results are consistent with each other and suggest that Autistic Spectrum Disorder is a meaningful way of understanding Patient x's difficulties, and associated behaviour.

2.3.5. Initial Formulation

Problem Behaviour

The formulation was based on the work of Dudley and Kuyken (2006) and was selected as it was recommended for multi-disciplinary formulations (Kinderman, 2005). The case of patient x required a team decision to be made about explanations for his type and level of risk and to identify his treatment pathway. Other methods of compiling formulations that are more therapy specific were likely to be less supportive of a team discussion. The focus of this formulation was violence to staff and peers, as this behaviour prompted Patient x's admission. There was one incident of aggression whilst in his current setting, triggered by a desire not go out on a walk when asked to do so (demand avoidance) and not understanding the term 'Low Stimulation Room' when he was requested to use it following his refusal.

Predisposing

Patient x has a number of predisposing factors or vulnerabilities that increase his risk of violence. The environment in which he grew up included a physically and emotionally abusive father. Patient x reports that his father was violent towards all of the family. Alcohol was associated with his father's violence. His father may have provided a 'model' of behaviour that Patient x has used throughout his life. As well as an adverse childhood environment, Patient x appears to have suffered a

number of childhood illnesses, which may have adversely affected neurological development. Whether illnesses were the cause of subsequent issues for Patient x is unclear. However it is clear that Patient x was identified as having an ID from a young age. There also appears to have been a diagnosis of Autism and disturbed behaviour from a young age.

The current assessments indicate that his autistic traits are significant in relation to social interaction, social communication and limited cognitive flexibility. In particular he shows very little understanding of social reciprocity. Relationships are viewed in relation to his needs, with the affection for his family being important but only because of what they do for him and what they can give him. His victim empathy also appears limited as he shows little remorse, understanding only the effects of incidents on himself. He shows a limited self-concept, which indicates he is highly suggestible. This can make him easy to engage, but whilst working with staff he has experienced difficulties which he has expressed via complaints about staff rather than expressing his views. His social communication is limited, and he finds it difficult to read the facial expressions of others. While in interviews he may respond by smiling, it is unclear if this is an example of mirroring behaviours or a genuine expression of an emotion. He appears to experience varied emotions, but

this can at times be difficult for staff to perceive due to his flat emotional expression.

Precipitating Factors/Function of Problem Behaviour

From interviews with Patient x a series of precipitating factors for violence ('triggers') were identified, see the formulation diagram (Figure 1). Triggers have included being refused a cigarette (index offence) and wanting to visit the vending machine, being asked to tidy his room, and having his possessions removed from his room. An incident in the current context was precipitated by a feeling of frustration at a move to a future placement not occurring at the rapid pace Patient x was expecting. It is likely that the restraint by a 5 man team during his index offence affected Patient x's behaviour. He did say within interviews that he finds it painful being restrained. These triggers cause Patient x to experience a range of negative emotions, which include anger, frustration and anxiety, which he seeks to alleviate or discharge by violent behaviour towards both staff and peers. This appears to be a primary gain. An additional function of the behaviour appears to be demand avoidance. He also reports a lack of stimulation and consequent feelings of boredom which sometimes triggers violence. Thus the function of violence can be to gain tangible reinforcers, for example attention from or the company of staff.

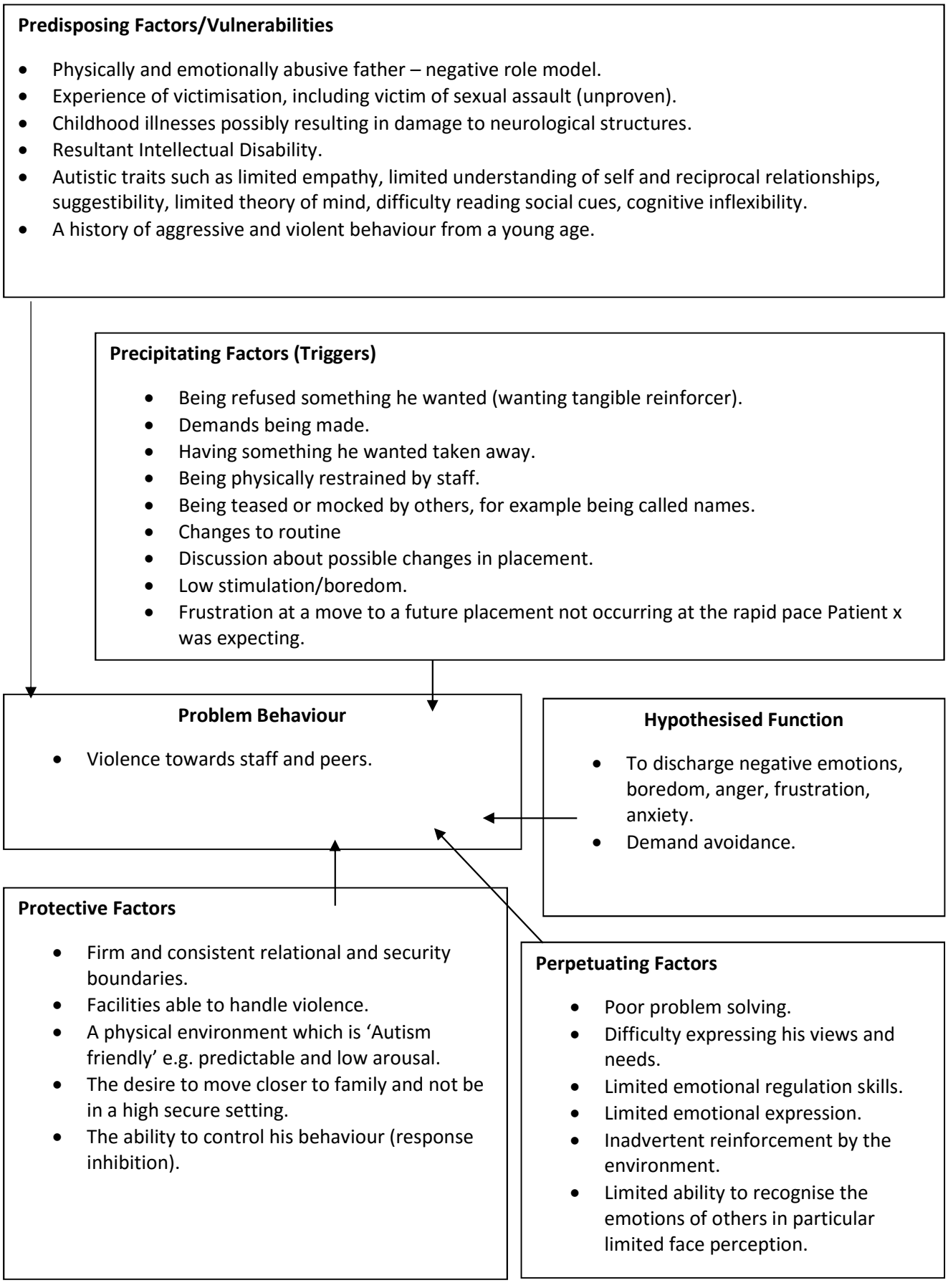
Protective Factors

There are protective factors that ameliorate Patient x's difficulties. He can be motivated to behave pro-socially. His family are important to him, and he would like to move to be closer to them. He understands that if he behaves appropriately this is likely, and he has been able to control his behaviour within a structured environment. Within the current placement there has been one incident of aggression which was de-escalated by staff and caused no injuries to staff or other patients. The environment may be appropriate for his needs, having adequate staffing levels, experienced staff, and predictable and structured routines. The ward environment also has strong relational boundaries.

Perpetuating Factors

He appeared to have poor face perception skills which contributed to emotional regulation skills which will have affected his problem solving abilities. The neuropsychological assessment investigating Dysexecutive Syndrome and ASD indicated he has difficulty recognising the emotions of others from facial expressions and expressing his feelings and needs. He has a flat facial expression, so others are unable to interpret his cognitions or emotions. He has a tendency to solve problems using the same perseverative strategy, even when this is not successful. He does not think flexibly and seek to create a new solution.

Figure 1: Preliminary Formulation for Patient x.



2.4. Intervention

2.4.1 Description of intervention

During the admission assessment it was noted that Patient x's recognition of the emotion of others was limited. He appeared to have difficulty recognising negative emotions such as 'scared'. There was a possibility this was linked to his violent behaviour toward others, where social cues were not used as a motivator to modify his behaviour. The recognition of emotions in others, face perception, was therefore identified as a treatment target. It was hypothesised that following treatment Patient x's recognition of the thoughts and feelings of others (interpreted from their facial expressions) would improve. This would in turn improve his interpersonal interaction and emotional problem solving. Four basic emotions: happy, angry, scared, and sad were focussed on.

The intervention was based on pictures of faces of adult males and females depicting these emotions, initially with one emotion discussed per session. Patient x was supported to identify the sections of a face, and what happened to each portion during each emotion. During subsequent sessions he was asked to describe this independently. Following this, he was given pictures of faces depicting the four core emotions with each emotion presented in a random sequence during sessions, asked to identify the emotion and what was happening to each section of the face. He was offered support to correct misunderstandings. The resources were

then used to play 'emotion bingo' where he matched up faces, identified the emotion and described what was happening to each part of the face.

Patient x was offered 10 sessions of half an hour per session to support him to maintain concentration and attention. The intervention was based on the principles used by Golan et al., (2009) that people with ASD need to establish rules to help them interpret the social world (Baron-Cohen, 2006). Also they are resistant to change which means they require repetition to establish those new rules (Kanner, 1943). The review of a limited number of emotions helped to support repetitions and the discussion of what different parts of the face were doing during different emotions was designed to establish rules of emotion recognition. Golan et al., (2009) used a video based intervention although this could not be used in the context due to security concerns. Consequently stills and the author's face were used instead.

2.4.2.Responsivity and Engagement

In terms of responsivity, the results of the WAIS-IV (Wechsler, 2008c) and the CEFA (Ball et al., 2008) were suggestive of ways in which Patient x should be approached. He should be allowed sufficient time to complete activities due to slow processing speed, and given fewer pieces of new information due to limited working memory. To address this the pace of the work was slowed to a pace he appeared comfortable with during sessions and information was repeated rather than consistently

introducing new material. Patient x needed information presented numerous times in a concrete way. He also benefited from visual rather than verbal information. To address this information was repeated and pictures of facial expressions were used as well as the author using their own face to provide examples of expressions. Adaptions for his ASD related needs were made. When working with him he needed consistent boundaries such as turning up on time for pre agreed appointments and low sensory stimulation to prevent him from getting distracted (Howlin, 1997). To address this regular bookings for sessions were made at the same time each week and these were added to a visual timetable with staff support to recall bookings. The times for these appointments were adhered to strictly by the author. A separate room was used for sessions which was away from a main thoroughfare through the ward.

2.4.3. Engagement

Patient x had a history of refusing treatment and being difficult to engage. He refused sessions but would then choose to engage if given some thinking time, or encouraged by staff. Refusing a session did not always seem to be due to a desire to cease therapy so much as arising from other issues. In particular, he cited the frustration of not being able to move placements as quickly as he would like. Other difficulties with his attendance included his tendency to forget planned sessions even when he had agreed to them, and prioritising other sessions rather than

therapy, e.g. gardening. These were overcome partly by the support of nursing staff but also by being resilient, not leaving when requested and waiting for him to change his mind about refusing a session.

2.5.Results

Two sets of assessments were administered pre-intervention and post-intervention. These were the 'core assessments' and Reading the Mind in the Eyes task – Child Version (Baron-Cohen et al., 2001). The term 'core assessments' refers to the Emotional Problem Scales (Prout & Strohmer, 1991) and the Interpersonal Circle (Blackburn & Glasgow, 2006).

2.5.1. Emotional Problem Scales (EPS)

This assessment comprises both a carer feedback and a self-assessment scale which assesses how well an individual is able to cope with their feelings. This assessment is designed for individuals with an ID and has narmalised scores for high secure offenders with an ID in a high secure hospital setting.

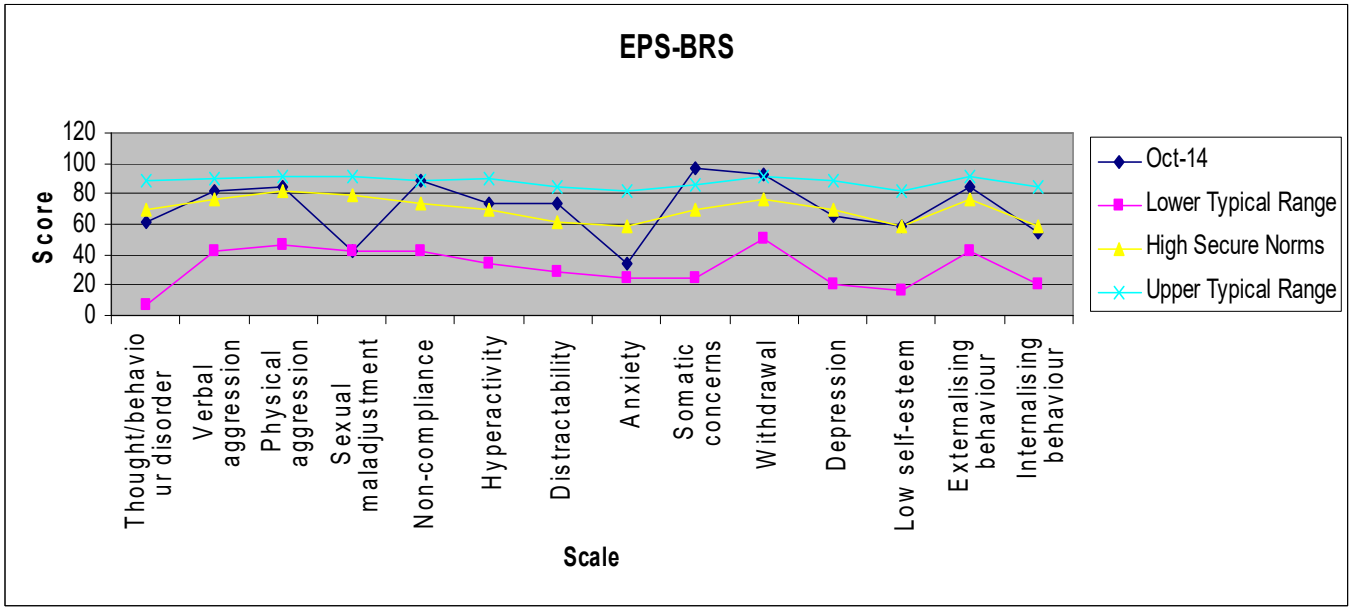
Emotion Problem Scale - Behaviour Rating Scale (EPS-BRS)

This is a carer rating form and assesses how staff perceive the individual has been coping. This is measured over a period of one month and is usually completed by the patient's Named Nurse. On this occasion it was completed by his Associate Nurse.

Table 4: Patient x's scores on scales of the EPS-BRS pre and post treatment and the norms for high secure patients with ID

EPS-Behaviour Rating Scales	**Patient x's scores pre treatment**	**Patient x's scores post treatment**	**Mean Scores in High Secure Sample (SD)**	**z score pre-treatment**	**Z score post treatment**
Thought/Behaviour Disorder	13	12	13.88 (9.7)	-0.09	-0.19
Verbal Aggression	15	12	9.54 (7.3)	0.74	0.33
Physical Aggression	9	11	9.03 (7.8)	-0.00	0.25
Sexual Maladjustment	0	0	4.39 (6.39)	-0.68	-0.68
Non-Compliance	31	30	19.0 (12.16)	0.98	0.90
Hyperactivity	5	13	11.58 (8.12)	-0.81	0.17
Distractibility	6	16	11.88 (8.33)	-0.71	0.49
Anxiety	10	5	10.07 (7.62)	-0.01	-0.67
Somatic Concerns	22	31	7.63 (8.45)	1.70	2.77
Withdrawal	24	24	13.76 (9.19)	1.11	1.11
Depression	6	9	9.71 (7.38)	-0.50	-0.10
Low Self Esteem	5	13	13.12 (11.12)	-0.73	-0.01
Externalising Behaviour Problems	60	66	48.97 (32.06)	0.34	0.53
Internalising Behaviour Problems	21	27	32.08 (23.25)	-0.48	-0.22

Chart 1: Patient x's scores on the EPS-BRS post treatment compared to the norms for high secure patients with ID.



The scores for the EPS-BRS indicate that Patient x's emotional problem solving is similar pre – intervention and post - intervention. Particular difficulties occurred in the areas of somatic concerns and withdrawal, which meant he expressed frequent health concerns and appeared aloof and disinterested from others. He also had low scores on sexual maladjustment and anxiety. Using the z-scores, somatic concerns appear to have increased by one standard deviation, while low self-esteem has decreased markedly. This indicates a difference pre–intervention and post–intervention on these measures but is not in line with the aims of the treatment, so it was unclear why these have altered.

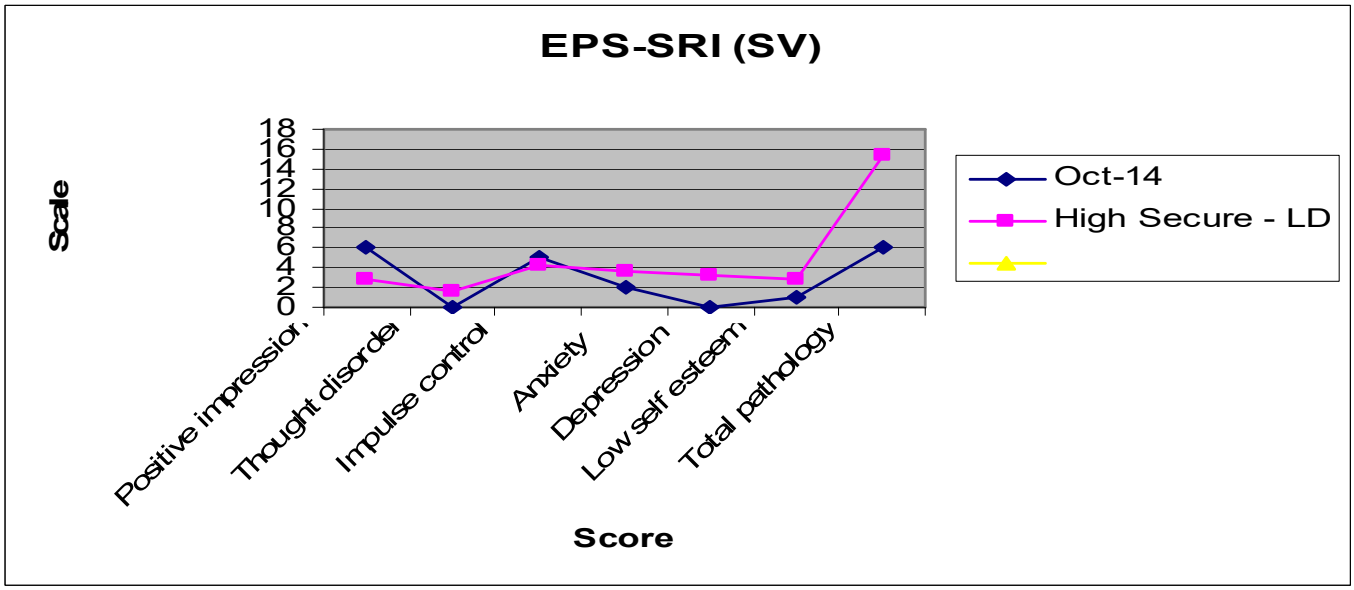
Emotion Problem Scale - Self Report Inventory (Short-Version) (EPS-SRI (SV)) (Prout & Strohmer, 1991)

This is a self-report assessment that looks at how the patient feels they have been coping over a period of a month. This is completed by the patient with support from psychology staff.

Table 5: Patient x's EPS-SRI (SV) percentile scores pre and post treatment and the norms for high secure patients with ID.

Self Report Inventory Scales	Patient x's scores pre treatment	Patient x's scores post treatment	Mean Scores in High Secure Sample (SD)	Z scores pre treatment	Z scores post treatment
Anxiety	1	2	3.69 (2.19)	-1.28	-0.77
Depression	0	0	3.23 (1.88)	-1.72	-1.72
Self esteem	3	1	2.92 (2.43)	0.03	-0.79
Thought disorder	1	0	1.62 (1.38)	-0.45	-1.17
Impulse control	3	5	4.19 (2.21)	-0.54	0.37
Positive impression	12	6	2.92 (1.83)	4.96	1.68
Total pathology	20	6	15.31 (8.62)	0.54	-1.08

Chart 2: Patient x's scores on the EPS-SRI (SV) post intervention in comparison to the norms for high secure patients with ID.



There was a reduction in Patient x's overall score for total pathology, suggesting improvement in self-reported difficulties. However, the score for his attempt to create a positive impression remained higher than other patients with an ID in a high secure setting. The z scores would support this as there is a degree of movement in scores between pre and post treatment, in particular for positive impression. This indicates that he may not convey his true thoughts and emotions to others, and that the self-report scores may lack validity. Alternatively, he may not understand the concepts within the self-report. One hypothesis is that he studies 'models' or people within the ward setting who exhibit appropriate behaviour. The

scores indicate that he has low levels of thought disorder, anxiety, depression, self-esteem and total pathology.

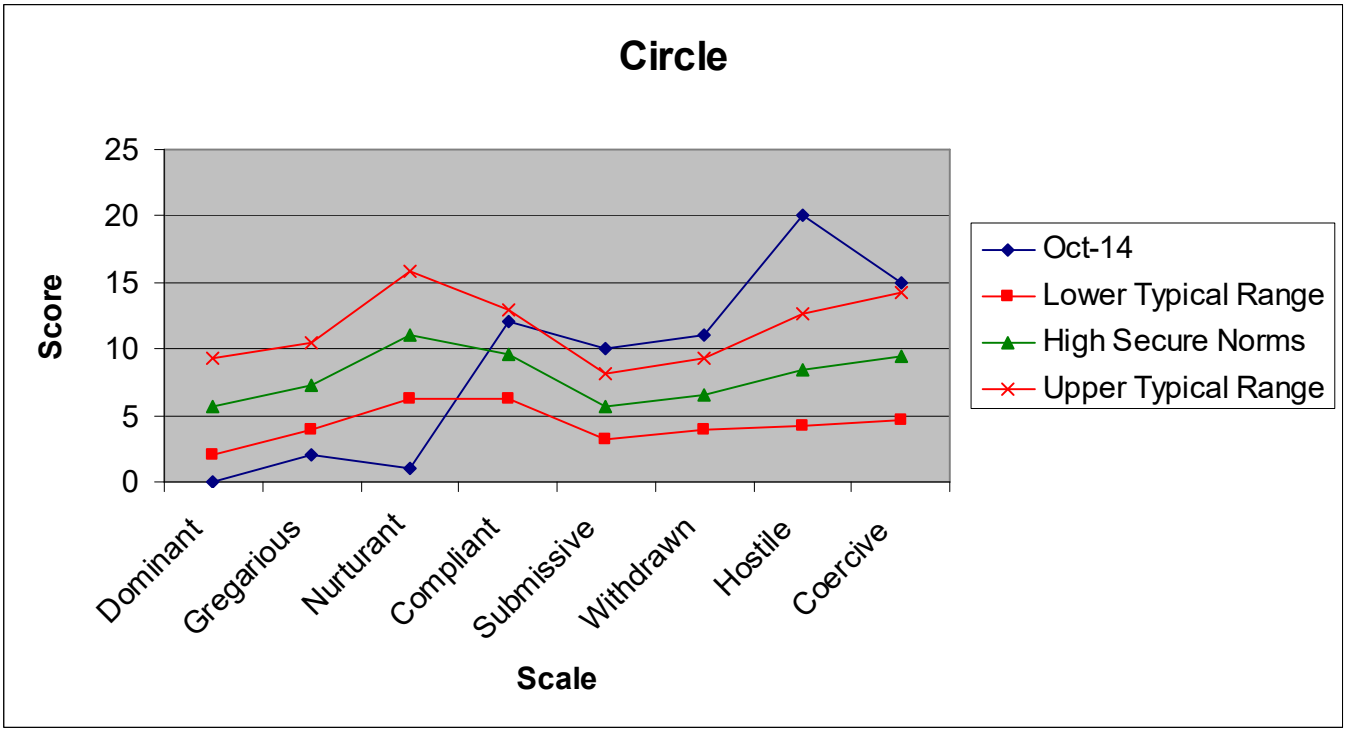
2.5.2. Interpersonal Circle (CIRCLE)

The CIRCLE (Chart for Interpersonal Relationships in a Closed Living Environment) (Blackburn & Glasgow, 2006) is a framework within which interpersonal functioning can be described. This measure is scored by the patient's Named Nurse and reflects their presentation in the ward environment when compared to other patients in a similar setting. This was again completed by his Associate Nurse. Although not developed specifically for an ID population there was normed data for offenders with an ID in a high secure hospital setting.

Table 6: Patient x's scores on the CIRCLE for pre and post intervention compared to the norms for high secure patients with ID.

Interpersonal Styles	Patient x's scores pre intervention	Patient x's scores post intervention	Mean scores in High Secure Sample (n=57) (SD)	Z scores pre treatment	Z scores post treatment
Dominant	9	0	5.7 (3.6)	0.43	-1.58
Submissive	5	10	5.7 (2.5)	-0.28	1.72
Hostile	8	20	8.4 (4.2)	-0.10	2.76
Nurturant	1	1	11.0 (4.8)	-2.08	-2.08
Coercive	16	15	9.5 (4.8)	1.35	1.15
Compliant	7	12	9.6 (3.3)	-0.18	0.73
Withdrawn	10	11	6.6 (2.7)	1.26	1.63
Gregarious	9	2	7.2 (3.3)	0.55	-1.58

Chart 3: Patient x's CIRCLE scores post treatment in comparison to the norms for high secure patients with ID.



Please note, the CIRCLE sub-scales have not been weighted, hence the graph lines will vary according to the number of questions per scale. This means that line length cannot be compared across subscales and that valid comparison can only be made across time, on individual sub-scales.

Patient x scored highly for coercive characteristics, which suggested he can be arrogant, argumentative, demanding, rebellious and aggressive. This remained high between the two administrations. He also scored highly for withdrawn characteristics, which meant he felt isolated, inactive and withdrawn. He scored highly for being submissive and hostile, both of which are higher scores than found during the previous administration. This means he has a tendency to appear meek, passive, unassertive, avoidant and unreliable. He also has a tendency to be suspicious, sullen, unfriendly, uncooperative and unreliable. He had low scores for being dominant, nurturant and gregarious. This means Patient x has a tendency to be less assertive, forceful or opinionated. He is less likely to be friendly or approachable and he is less likely to be sociable, talkative and cheerful.

The z scores indicated reductions between standard deviations on dominance, and gregariousness. A reduction in dominance is a positive but a reduction in gregariousness is not. Increases between standard deviations occurred for being submissive, hostile and compliant. The positive change is an increase in compliance and is perhaps in line with an

increase in submissiveness although the increase in hostility will have a negative impact on Patient x and those around him.

2.5.3. Reading the Mind in the Eyes Assessment

Reading the Mind in the Eyes (Child Version) Baron-Cohen et al., (2001)

Patient x identified 9 photos of emotions and cognitions correctly before treatment, and 8 of the same photos correctly post treatment which indicated a continued limitation in this area and no objective change. His score was similar to the score obtained by children with Asperger's syndrome, and males and females of between 6 and 8 years old. Before treatment his incorrect responses indicated difficulties with interpreting negative emotions such as 'scared', 'worried' and 'sad'. However, after treatment the incorrect scores were for a mixture of both negative and positive emotions. The stability of his skills is consistent with his having an ASD, associated with a neurobiological underpinning to his difficulties with emotion, which are unlikely to be amenable to significant change (McGregor et al., 2008).

2.6.Discussion

Summary

The purpose of this case study was to identify the causal factors for Patient x's violence, to compile a formulation using case history and the results of assessments, develop an appropriate intervention to meet his treatment needs, and evaluate that intervention. To address this, the hypothesis that Patient x had Dysexecutive Syndrome or ASD was investigated. This was examined using the WAIS-IV (Wechsler, 2008c) and the CEFA (Ball et al., 2008). There was evidence for an ID as his FSIQ was 51 (95% confidence interval= 48 – 56) although there was a statistically significant difference between perceptual reasoning and working memory and processing speed meaning the figure for the FSIQ should be treated with caution. There was little evidence for a Dysexecutive Syndrome, as no localised deficit in executive function was measured by either the WAIS-IV or the CEFA.

The diagnosis of ASD was assessed using the ADOS-2 (Lord et al., 2012), the PDD-MRS (Kraijer, 1997) and the Reading the Mind in the Eyes, Child Version (Baron-Cohen et al., 2001). The results suggested that ASD was a useful framework for understanding some of Patient x's difficulties although a family interview was not possible and this was a limitation. Information was also gathered via interviews with the patient, a review of his case file and an HCR-20 V3 (Douglas et al., 2013). This indicated that

Patient x had experienced physical and psychological abuse during childhood from his father, as had his siblings and mother.

The formulation included information about developmental disabilities and environmental factors. This indicated his violent challenging behaviour could have been due to difficulties with the recognition of emotions, specifically face perception, a skill usually based in the occipital areas of the brain which means it has a neurological basis (Atkinson & Adolphs, 2011). To address deficits in face perception the intervention used visual material depicting different parts of a face during different emotions aimed at developing Patient x's competence in perceiving the expressed emotions in others.

The outcome of intervention was measured using the 'Reading the Mind in the Eyes' assessment (Baron-Cohen et al., 2001), the Emotional Problem Scale (Blackburn & Glasgow, 2006) and the interpersonal CIRCLE (Prout & Strohmer, 1991). The results for the 'Reading the Mind in the Eyes' assessment were similar after treatment (8), as compared to before treatment (9). The results of the EPS – BRS (Prout & Strohmer, 1991) indicate similar difficulties before and after treatment in the areas of somatic concerns and withdrawal, with low levels of sexual maladjustment and anxiety. Similarly the EPS-SRI (Prout & Strohmer, 1991) indicated a reduction in overall pathology but high levels of positive impression,

which suggest Patient x was not conveying his true thoughts and feelings. Using the CIRCLE (Blackburn & Glasgow, 2006) Patient x's scores indicated improvements in some areas, but an increase in some interpersonal difficulties. Thus there were no consistent improvements following treatment. Therefore, this intervention applied for this length of time did not achieve positive results for this patient in this setting.

Effectiveness of Assessment Measures

An in depth critique of the assessments used is beyond the scope of this case study and would be a valuable area for future research. However, assessments were found to have both strengths and weaknesses. The Technical Manual of the WAIS-IV outlines some excellent figures for reliability. The test-retest reliability was found to be .96 for FSIQ with this being measured using a sample of 298 over an interval of 22 days (Wechsler, 2008b). However, these figures do not represent long term reliability over a number of years. The internal consistency of the WAIS-IV was found to be high at .98 (Wechsler, 2008b). This was confirmed by Benson et al., (2010) when they independently assessed the WAIS-IV. However, they suggested that the Cattel-Horn-Carroll theory (McGrew, 2009) was a more useful way of interpreting results.

Whitaker (2012) also had some concerns, as the WAIS-IV does not measure low scores accurately. Furthermore Whitaker, (2008b; 2010)

states that norms have not been established for people with a low IQ as tests of reliability were conducted on people with an average IQ. It may also be that the distribution of IQ for individuals with a below average score does not follow normal distribution. This contrasts with figures published by the WAIS-IV manual (Wechsler, 2008b) which includes results of factor analytic studies that found the test to be good at measuring *'g',* the general factor of intelligence. There were also positive results where the WAIS-IV was found to have a high correlation with other tests of general intelligence, Wechsler Adult Intelligence Scale, version 3 (WAIS-III) (r=.94) and Wechsler Intelligence Scale for Children, version 4 (WISC-IV) (Wechsler, 2003) (r=.91). However, these were also normalised using people with average intelligence (Wechsler, 2008b) and may not reflect content or convergent validity when tested with individuals with a lower IQ.

Patient x had both a lower IQ and ASD, the effects of the ASD on the results of the WAIS-IV were unclear. The manual for the WAIS-IV (Wechsler, 2008b) provides an example of WAIS-IV results for only 16 individuals with Autistic Disorder and 40 individuals with Asperger's syndrome. There was evidence of low scores for the coding subtest, a test of processing speed, in both groups. Other areas of difficulty appeared to be cancellation, another test of processing speed, and similarities, which is a test of verbal comprehension but requires abstract thinking.

Holdnack, Goldstein and Drozdick (2011) found that people with Asperger's syndrome and Autism had difficulties with social perception, auditory working memory and processing speed. These will all interfere with the individual's ability to complete the test, as it relies on social interaction and support to enable completion. Therefore people with ASD might score lower than their ability when completing a WAIS-IV.

It was also noteworthy that norms are based on people who are not admitted to psychiatric units. Patient x did not match the normed sample as he has an ID and ASD and was contained within a secure unit. In some individuals these factors could compromise the validity of the results and this required examination. Due to the issues as outlined a critique of the validity and reliability of the WAIS-IV applied to people with an ID and ASD is the subject of chapter 3 of this thesis.

There were shortcomings to both the CEFA and the ADOS–2. The CEFA was designed for individuals with an ID (which was a strength) but its utility for people with ASD was unclear (Ball et al., 2008). There was a paucity of research examining its validity and reliability with no literature identified during a literature search. Similarly the ADOS-2 was designed to contribute to a diagnosis of ASD but made inadequate adaptions for people with an ID. The subtests that were used were designed for the level of understanding of a child, similar to someone with an ID, but some

of the materials were age inappropriate when used with an adult. The nature of the assessment where two examiners rate an individual's completion of a number of tasks could compromise the reliability as this relied on a high degree of inter-rater reliability. Differences in scores should be discussed and a compromise agreed. However, a compromise would not necessarily indicate an accurate result.

A literature search also highlighted a paucity of research evaluating the validity and reliability of the assessment for adults with an ID as well as test-retest reliability. The available literature does also indicate some issues with use of the measure with children who are lower functioning (Oosterling et al., 2010). Positively, there are indications that the format of the ADOS-2 does converge with the Autism Diagnostic Interview – Revised (Le Couteur, Haden, Hammual & McConachie 2008) and work has been conducted to improve predictive validity by collecting data that has contributed to the revision of diagnostic algorithms (Gotham et al., 2008). However, this research was conducted with children with no reference to the validity of the assessments for adults with an ID.

Similarly the norms for the "Reading the Mind in the Eyes" test were for children and it was unclear how well Patient x understood the abstract terms used in the assessment (for example, ashamed, serious and daydreaming). However, the assessment was simple to administer

making it suitable for people with an ID (Baron-Cohen et al., 2001). In contrast to this, the PDD–MRS was designed for people with an ID and to identify ASD, although the assessment uses the terms Mental Retardation and PDD. It uses an observer to rate the presence of PDD which means it can be used across levels of ID and across ages from 2-55. Kraijer and de Bildt (2005) found a good sensitivity for the normative sample, 92.4%. However, there were no norms for a high secure sample.

One paper was identified that examined convergent validity (deBildt et al., 2003). The agreement between the Autism Behaviour Checklist and the PDD-MRS was Kappa= .24 which was termed 'fair'. Both of these tools were observer rated although the Autism Behaviour Checklist was completed by parents and the PDD-MRS was completed by someone familiar with the individual which may have introduced a variable affecting outcomes. The same paper also reviewed the Autism Diagnostic Interview – Revised and Generic versions. They found that all instruments measured an incidence of ASD at a rate higher than chance but the individuals identified as having ASD by each tool differed. This indicated positive results for concurrent validity and difficulties with convergent validity for all measures.

A literature search did not identify a body of literature on the validity and reliability of the EPS and CIRCLE. However, the context in which this case

study took place had gathered a set of norms within a high secure setting over a period of around 10 years. The number of cases on which the norms were based were unavailable but could be as much as 1,000 based on a twice yearly application and the number of patients within the service being around 50 at any one time. In summary, the assessment tools used in this case study were selected due to their ability to measure global deficits in intellectual functioning and ASD. The ASD assessment tools were also selected to be suitable for a population with an ID and to measure changes within interpersonal functioning and emotional problem solving. However, a review of the literature indicates that there are aspects of these tools that require further research such as their applicability to an adult population with an ID or ASD. There were also omissions in the literature as aspects of validity and reliability do not appear to have been examined. This indicates that further research is required to address these gaps.

Formulation

The structure of the formulation was based on the work of Dudley and Kuyken (2006) due to the recommendation that this format was used with multidisciplinary teams. An addition was made to this with the use of the behavioural approach (Cipani & Schock, 2010). An identification of the function of behaviour was made with the patient during interviews. Formulations can be compiled in a variety of formats depending on the

theory being used, the clinician and the individual. Some theories encourage more of a flexible approach than others, however the purpose of a formulation is to present a summary of information gathered during assessments (Persons, 1989). This formulation fulfilled this aim and the mixed approach to the format complies with the concept of eclectic formulations discussed by Johnstone and Dallos (2014)

The approach used in this case may not have been suitable to all cases or teams. In this instance this formulation was designed to explain violence and support the team to gain an overall understanding of patient x's needs. Links were not made between the antecedent (A), behaviour (B) and consequences (C), the usual approach associated with behavioural theory, even though the consequences or functions of behaviour were mentioned. The application of the ABC model to this case and the method of behavioural analysis (Cipani & Schock, 2010) could have provided an in depth understanding of this patient's behaviour. However, this was difficult to apply as there was a lack of CB being exhibited by the patient. To fully utilise this approach regular incidents are needed to be able to make observations and interview those involved with information being used to effectively apply behaviour modification approaches such as positive reinforcement. Despite the difficulties using this approach with this case in this context it could be utilised in the future to support Patient x should more frequent CB be exhibited.

There were shortcomings to the sources of data used. Reports from previous placements were used, interviews were conducted with the patient with informal interviews conducted with staff such as the Named Nurse as well as file reviews and informal observations made of behaviour. Family could have been interviewed not only for the ASD diagnosis but also for the formulation in general to gain an understanding of patient x's history and experiences and to assess the family. Families are only regarded as one source of information (Johnstone & Dallos, 2014) however there is a wealth of data to be gained from visiting family, how they live their life, their own skills set, their nurturing capabilities, their abilities to meet an individual's needs and their ideas of the individual's difficulties. Observations of families during visits could help build an understanding of the nature of the attachment between members (Bowlby, 1980) and the socialisation or modelling (Bandura, 1973) offered within the family for skills such as emotional regulation (Morris, Silk, Steinberg, Myers & Robinson, 2007) and problem solving (Dubow, Tisak, Causey, Hyrshko & Reid, 1991). Family were not visited in this case due to the significant distance from the placement and ill-health of Patient x's mother and absence of the father. This has been a learning point for the author and visits to family have been built into all case work and formulations within the author's current role.

The approach used for the formulation was based on the biopsychosocial model (Pilgrim, 2002). All elements of the formulation were useful to influence the data being gathered and the information being contained within the formulation. This was also a useful approach when identifying developmental disabilities such as ID and ASD and the characteristics associated with these combined with social factors and the affect these have on psychological processes. However, the formulation could be more in depth, for example examining incidents of CB in more detail.

Factors Affecting Violence

The explanations of Patient x's violence concurs with previous research. Patient x's past experiences appear to influence his current behaviour. The client was brought up in a household where his father, a punitive role model (Attwood, 2007) was physically and psychologically abusive, and patient x having experienced victimisation and having witnessed domestic violence. Margolin (1998) indicated that witnessing domestic violence is affected by the fact that the perpetrator and victim are two people who the victim is emotionally close to and the violence often occurs within a home context usually associated with safety and protection. As a result a child can experience emotions such as fear, anxiety and anger. As one parent is seeking to control the home context and the other is seeking to survive they may not receive the nurturing they require. They can also come to identify with the perpetrator (Kolbo, Blakely & Engelman, 1996;

Kitzmann, Gaylford, Holt & Kenny, 2003). This and an individual's experience of being a victim is likely to be associated with insecure attachments and a likelihood that they use violence to solve conflict (Styron & Jannoff-Bulman, 1997). In some cases abuse can result in a disorganised attachment (Alexander, 1992)

It may also be that these violent and/or abusive experiences are more significant for someone with ASD, as they may use 'models' within the environment as behavioural templates (Attwood, 2007). The use of models can then be further complicated by cognitive inflexibility which is a feature of ASD (WHO, 2010). This inflexibility in thinking leads to perseveration which means an individual is less likely to consider alternative behaviours and resorts to the same problem solving strategy (Howlin, 1997). This was supported by the results of the CEFA, where Patient x used the same problem solving strategies a number of times. In addition his case history indicated he has used violence repeatedly as a way of achieving tangible reinforcers, or to avoid demands. Thus for Patient x violence is a way of achieving goals learned from role models, which does not change over time due to an inflexible and formulaic approach to problem solving.

As well as the experience of a father who was violent as a model and an abuser, patient x alleged that he had been the victim of a sexual assault

whilst in a park. During interviews he was unable to name the alleged perpetrator and the nature of the assault was not discussed as it was referred to another clinician for assessment, yet an experience of this nature could be a trauma with long lasting effects. Research indicates that sexual assault is associated with a wide range of mental disorders such as psychiatric illnesses which can lead to hospitalisation and be associated with violence and further victimisation (Jacobson & Richardson, 1987; Cloitre, Tardiff, Marzuk, Leon & Portera, 2006).

Other factors that may influence violence included characteristics of the patient associated with ASD or ID. However, the influence of these diagnosis related characteristics may be person specific as the literature does not support a diagnosis of ASD or ID being associated with a significantly higher rate of offending (Simpson & Hogg, 2001). The work of Scragg and Shah (1994) and Mouridsen, Rich, Isager and Nedergaard, (2008) found the prevalence of offending for people with ID did not appear to be much more than the normal population and there was also little support of higher offending rates being associated with ASD than a comparative population. However, arson and sex offending may occur at a higher rate in both populations (Simpson & Hogg, 2001; Mouridsen, Rich, Isager & Nedergaard, 2008, Siponmaa, Kristiansson & Jonsson, 2001). These findings do have limitations as research includes the use of

people with IQ rates higher than 70 as participants and juveniles or young adults which may have influenced the data.

Face Perception

One limitation that may have affected this individual was face perception. This contributes to theory of mind and emotional recognition and influences an individual's ability to perceive social feedback, or the emotions experienced by others and modify their behaviour accordingly (Matson & Sturmey, 2011). Development of the skill appears to occur early with babies being found to recognise faces (Nelson, 2001). In addition children can recognise when anger is directed at them rather than at someone else (Hoehl & Striano, 2008). Evidence suggests that the ability to recognise facial expressions requires normal brain development and that an individual's experience can affect this ability (Grossmann & Striano, 2006). This may be affected by developmental disorders such as ASD or ID, or environmental factors such as abuse. For Patient x all of these factors were present.

This was targeted during intervention but the skills remained largely unchanged suggesting that individuals with developmental disorders can be difficult to support to change. This may mean the length or types of treatment need to be tailored to each individual, which makes treatment targets and expectations of outcome problematic. There is a need to

explore the benefits of using psychotherapeutic intervention with someone with ASD as there is a paucity of research in this area, making this a difficult topic to review systematically and suggesting research is required. A discussion is also needed of the ways in which psychotherapeutic interventions can be tailored for this population and the skills required. There is a body of evidence which examines the effectiveness of psychotherapeutic interventions for people with ID and this will be discussed within the systematic review included in this thesis. As there was little change following the psychotherapeutic intervention and violence had reduced since admission it was concluded at the end of the case study that the environment may have been the main factor influencing behavioural change with recommendations for elements to be matched in a future placement.

One of the features identified as helpful to patient x was the approach used by staff with patients which utilised firm boundaries. It is understood that staff working with people with an ID can be considered as part of a system or whole and where their proactive and reactive behaviour can either increase or reduce CB (Hastings & Remington, 1994). The response of staff to each patient, in particular those exhibiting CB has been considered by Weiner's (1985, 1993) Model of Achievement, Motivation and Emotion which suggested that attributions and emotions of staff, experienced when an individual exhibits CB will affect their desire to help

or neglect a patient. Understanding the mechanisms by which staff respond helpfully and intervene to reduce CB could be a significant element and improve the outcomes for all patients and for patient x. This will be examined further within the research component of this thesis.

2.7.Conclusion

The case study reviews the case of Patient x who exhibited frequent and seemingly unprovoked violence. Three diagnoses were investigated ID, ASD and Dysexecutive syndrome with ID and ASD being supported. In addition to the presence of developmental disabilities the case history indicated environmental factors being present during the early years with a punitive male role model being abusive to both the individual, his siblings and mother. This could have affected development and also provided a role model for problem solving. An assessment was conducted with deficits in face perception being identified as one explanation for Patient x's limited recognition of the emotions of others. This was targeted to little effect. One explanation for this was that deficits were 'hard wired' into neurological structures and would therefore be difficult to alter through a short term therapy. A different approach might draw on a rule based approach and perhaps go beyond face perception to target social problem solving more generally. More research is needed to analyse the effectiveness of psychotherapeutic interventions for people with ASD and the effectiveness of psychotherapeutic interventions for

people with ID also needs to be understood. This was the topic of the systematic review in this thesis although due to the paucity of research relating to people with ASD only psychotherapeutic interventions for people with ID are reviewed.

The discussion highlighted limitations and strengths to the formulation used with the recommendation being that the behavioural approach be used should behaviour deteriorate. Research indicated the assessments used have both a value and a number of shortcomings with further research being recommended to address these limitations. The effectiveness of psychometric measures is a topic discussed by the next chapter which is a critique of the Wechsler Adult Intelligence Scale, version 4 (WAIS-IV) (Wechsler, 2008a, 2008b, 2008c), an assessment widely used by Psychologists to identify levels of intelligence.

3.Psychometric Measure

3.1.Introduction and Overview of the Tool

The Wechsler Adult Intelligence Scale (WAIS) was reviewed in this paper. The measure was developed by David Wechsler and is now in its fourth edition (WAIS-IV; Wechsler, 2008c). The principles on which the scale has been based are experimental techniques and psychometrics or quantitative assessments of psychological phenomena. Wechsler's initial use of assessments was with soldiers being considered for discharge. It was during this work that he considered a psychometric measure of intelligence, capturing verbal and non-verbal factors. In 1939, whilst working as the Chief Psychologist at Bellevue Hospital, he produced the first Wechsler-Bellvue Scale. This was followed by the WAIS, first edition in 1955, which was revised in 1981 (Wechsler, 1981). The aim of the WAIS is to provide an assessment of, and score for, intelligence for adults between the ages of 16 and 90. The underlying premise is that there is a single construct of intelligence, or an ability which affects performance in all mental tasks and was termed the *g*-factor by Spearman in 1904.

The WAIS-IV consists of 15 subtests, of which 10 are core, and 5 are optional. The scores from core subtests contribute to four indexes the Verbal Comprehension Index (VCI), Perceptual Reasoning Index (PRI), Working Memory Index (WMI) and Processing Speed Index (PSI). Table 7 details the subtests which are used (Wechsler, 2008b).

Table 7: WAIS-IV subtests and indexes.

Verbal Comprehension Index (VCI)
Similarities (SI) Describing the similarities between two verbally presented words representing common objects or concepts. It tests verbal concept formation and reasoning and requires crystallised intelligence.
Vocabulary (VO) Defining words presented visually or orally. This measures word knowledge and verbal concept formation and requires crystallised intelligence.
Information (IN) Responding to questions regarding a range of general knowledge topics. It measures the ability to acquire, retain and retrieve general factual knowledge and requires crystallised intelligence.
Comprehension (CO) (optional) Questions about general principles and social situations. It measures verbal reasoning and conceptualisation, verbal comprehension and expression, the ability to evaluate and use past experience and the ability to demonstrate practical knowledge and judgement. It also involves crystallised intelligence

Perceptual Reasoning Index (PRI)
Block Design (BD) Using a model, picture and red and white blocks to create a design within a specified time limit. It measures the ability to analyse and synthesise abstract visual stimuli. It also involves fluid intelligence.
Matrix Reasoning (MR) Completing an incomplete matrix or series by selecting a response option. It involves fluid intelligence.
Visual Puzzles (VP) Reconstructing a puzzle in a set time limit by selecting three responses. It measures nonverbal reasoning and the ability to analyse and synthesise abstract visual stimuli. It also involves fluid intelligence.
Figure Weights (FW) (optional, 16-69 only) Selecting a response to keep a scale balanced in a specified time limit. This measures quantitative and analogical reasoning.
Picture Completion (PC) (optional) The examinee views pictures which have an important part missing and identifies which part is missing within a given time limit. It measures visual perception and organisation, concentration and visual recognition of essential objects.

Working Memory Index (WMI)
Digit Span (DS) Listening to a sequence of numbers and recalling them in order forwards. This involves rote learning, memory, attention, encoding and auditory processing. **Digit span backwards** requires the recall of a sequence of numbers backwards. This measures working memory, transformation of information, mental manipulation and visuo-spatial imaging. **Digit span sequencing** requires examinees to recall a sequence of numbers in ascending order. It measures working memory and mental manipulation.
Arithmetic (AR) Solving a number of arithmetic problems in a time limit. It involves mental manipulation, concentration, attention, short and long term memory, numerical reasoning ability, mental alertness.
Letter-Number Sequencing (LN) (optional, 16 – 69 only) Listening to a sequence of numbers and letters and recalling the numbers and letters in ascending order. The task measures sequential processing, mental manipulation, attention, concentration, cognitive flexibility and fluid intelligence.

Processing Speed Index (PSI)
Symbol Search (SS) Scanning a search group and indicating whether one of the symbols in the target group matches within a specified time limit. This measures processing speed this measures short-term visual memory, visual motor co-ordination, cognitive flexibility, visual discrimination, psychomotor speed, speed of mental operation, attention, and concentration.
Coding (CD) Copying symbols paired with numbers within a specified time limit. This measures processing speed, short-term visual memory, learning ability, psychomotor speed, visual perception, visual-motor co-ordination, visual scanning ability, cognitive flexibility, attention, concentration and motivation.
Cancellation (CA) (optional, 16-69 only) Scanning a structured arrangement of shapes and marking target shapes within a time limit. It measures processing speed, visual selective attention, vigilance, perceptual speed and visual-motor ability.

The four indexes (VCI, PRI, WMI and PSI) are used to calculate the Full Scale Intelligence Quotient (FSIQ). Previous to the WAIS-IV, the focus was on verbal and performance indexes to calculate FSIQ. However, the VCI and PRI can still be used as indicators of these skills. An FSIQ can also be calculated when some of the 10 core subtests are not available using pro-rating or substitution. This may be due to; incorrect test

administration or a participant refusing to comply, recent exposure to test items, physical limitations, or sensory deficits. Scores from optional subtests can be substituted for core subtests, although the number of substitutions allowed within each index and the FSIQ is limited.

Proration can also be used as a way of calculating the FSIQ from less than 10 subtests. Again there are restrictions on the number of subtests used, if too few scores are available the test is invalid. A further way of using scores is the General Ability Index which is calculated from the VCI and PRI omitting the scores for the WMI and PSI. This is recommended for individuals with a memory or learning disorder, although the figure obtained is regarded as a less sensitive test of *'g'* or generalised intelligence (Wechsler, 2008a). The versions of the WAIS referred to in this critique are version III and IV. There are 12 shared subtests between the two versions with 3 new subtests being created for the current version four of which are visual puzzles, figure weights and cancellation (Wechsler, 2008b).

The WAIS is an assessment that can be applied widely, for example identifying an Intellectual Disability (ID), giftedness or intellectual strengths or weaknesses. An ID is identified when an individual has an IQ below 70, they have difficulty with two or more adaptive functions and these issues have been present from before the age of 18 (APA, 1994: APA 2013). The British Psychological Society (2015) published guidance

on the assessment and diagnosis of ID which endorsed this definition although recommendations were made to improve the diagnostic process. Once allocated, the implications of the WAIS to an individual can be significant. For example, identifying someone as having an ID can affect their treatment within a court setting, or enable them to be sent to a service that caters for people with an ID.

In addition to these applications, the WAIS-IV also allows for differences between nationalities as there is a US and UK version; this is a factor discussed in more depth in section 3.2.8. However, there are limitations to the test due to difficulties in administration, for example when testing someone who is hard of hearing, deaf or has a motor dysfunction. Adaptions can be made for deafness but the mode of communication can still affect validity. The test can also take a long time to administer and a rapport between an examiner and examinee is important to enable individuals to perform well. WAIS-IV assessments should also be conducted in a comfortable, well-lit environment free from distractions due to the number of subtests.

The test materials support test administrators. Each examiner is guided by an Administration and Scoring Manual. There is also a record form to record subtest scores. Further to this there is a separate booklet for the symbol search and cancellation subtests, a stopwatch and scoring guidelines (Wechsler, 2008a; Wechsler, 2008b).

3.2.Evaluation of the Tool

3.2.1 Content and Construct Validity

Content validity refers to the effectiveness of a psychometric tool to test all facets of a given construct (Haynes, Richard & Kubany, 1995). Construct validity refers to the effectiveness of a psychometric tool to measure the construct being tested (Peter, 1981). The WAIS-IV is used to produce an FSIQ or a '*g*' score. The concept of the '*g*' score was first elucidated in 1904 by Charles Spearman following his testing of schoolchildren on a range of academic areas. He found the scores were positively correlated and concluded this was evidence for general mental ability or '*g'* (Spearman, 1904). Wechsler based his understanding of '*g'* on the work of Spearman (1904) providing a firm definition of '*g*' as the 'capacity of the individual to act purposefully, to think rationally, and to deal effectively with their environment' (p.3, Wechsler, 2008b).

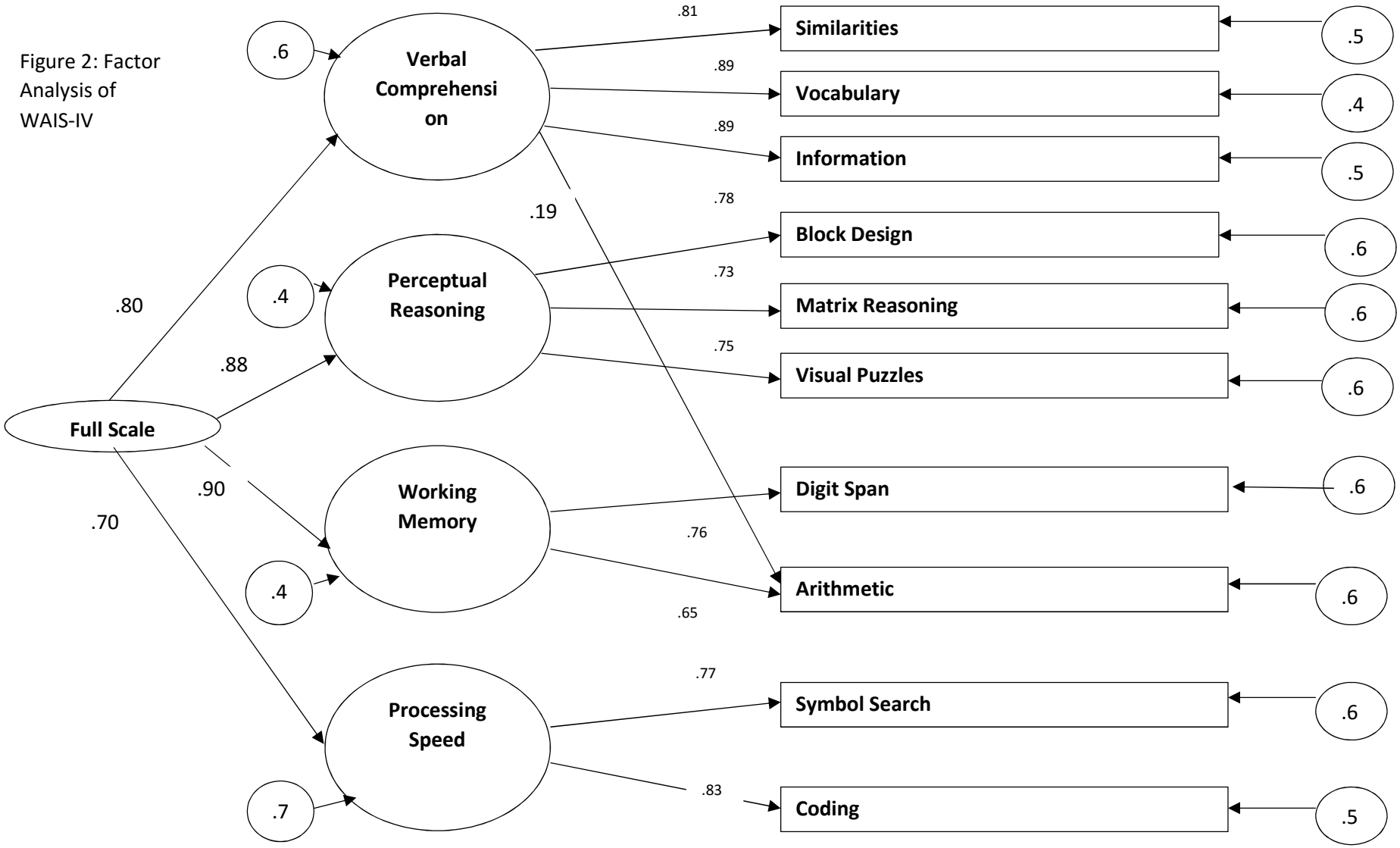
The nature of '*g*' has been debated. One perspective of '*g'* was from Gardner (1983) who proposed that intelligence was the culmination of linguistic, logical-mathematics, spatial, musical, body-kinesthetics, interpersonal and intrapersonal dimensions. He regarded types of intelligence as separate, although they have been found to be positively correlated (Gardner, 1999). However, his theory has limited applicability to a psychometric assessment as some of these abilities do not possess a cognitive basis, for example body kinesthetics (Levitin, 2002).

Kinesthetics refers to learning through the senses and physical tasks, such as making a model (Coffield, Moseley, Hall & Ecclestone, 2004). One influence on Gardner's work may be his interest in education with his theory of multiple intelligences perhaps better understood as a framework for measuring and understanding a child's ability in scholastic subjects (Gardner, 1995).

An alternative view of '*g'* came from Carroll (1993). He analysed over 400 data sets from previous research and found that '*g*' could be subdivided into eight global abilities, broad visual perception, auditory perception, retrieval ability, cognitive speediness, processing speed, general memory and learning, crystallised intelligence and fluid intelligence with these abilities being positively correlated. Carroll (1997); Cattell (1943); Cattell and Horn (1978) and Sternberg (1995) emphasised the importance of fluid reasoning. Fluid reasoning is the process of 'manipulating abstractions, rules, generalisations and logical relationships' (Carroll, 1993, p.583). This is a facet of '*g*' that the WAIS-IV has aimed to measure by adding a subtest, matrix reasoning. Attempts have been made to reconcile these understandings of '*g'*. For example, to reach an academic agreement (Neisser et al., 1996; Gottfredsen, 1997) and to consolidate different theories (Snyderman & Rothman, 1988).

The WAIS-IV manual (Wechsler, 2008b) detailed studies using a confirmatory factor-analysis which is a way of confirming the construct or model being tested as defined and outlined by Joreskog (1969). Figure 2 depicts the model that best represents the structure of the WAIS-IV. The diagram includes figures for standardised factor loadings (Wechsler, 2008b).

Figure 2: Factor Analysis of WAIS-IV



Wechsler (2008b) argues it is difficult to test each domain of intelligence separately as the domains are interlinked. There are also attributes affecting performance which are not testable in the WAIS, for example planning, goal awareness, independence, and anxiety (Wechsler, 1975). This could explain why the WAIS-IV omits some facets of intelligence, for example emotional intelligence which is the ability to perceive, appraise and regulate the emotions of yourself and others (Derksen, Kramer & Katzko, 2002). The WAIS-IV still aims to measure '*g*' according to Wechsler's 1944 definition (Wechsler, 2008b). However, the evidence indicates that not all facets of '*g*' are being tested and each version of the WAIS tests different facets of '*g*' according to current theory (Wechsler, 2008b), for example an increased emphasis on fluid intelligence in the WAIS-IV. Therefore, there are shortcomings to the content validity of the WAIS. This inevitably has implication for construct validity. If the WAIS only tests one model or understanding of '*g*' with omissions in some areas, then the WAIS can only be understood to provide an understanding of intelligence within specified parameters. Perhaps this also illustrates one of the inherent limitations of psychometric tools, an ability to only test analytic as opposed to creative or practical facets of intelligence (Sternberg, 1995).

The model used has been analysed by other researchers, some confirm this model and some suggest alternatives. For example, Canivez and

Watkins (2010) and Nelson, Canivez and Watkins (2013) support the model as discussed by Wechsler (2008b). It is also supported by Benson et al., (2010) although they indicated there was some variance in results across ages. Futhermore, Reynolds, Ingram, Seeley and Newby (2013) supported the four factor model in a sample with ID. However, Niileksela, Reynolds and Kaufman (2013) suggest that a five factor structure fits their data and Holdnack, Zhou, Larrabee, Millis and Salthouse (2011) suggest that either a five or a seven factor structure would fit the data. Gignac and Watkins (2013) suggested an alternative bi-factor model where each element is both mutually independent and hierarchically organised (Tumminello, Lillo & Mantegna, 2007) which differs from the current hierarchical model. Thus this aspect of the assessment tool is still the subject of debate although researchers suggest refinements to the model rather than a revision. The method of factor analysis may also be a difficulty as the data gathered is determined by the model being tested which in turn is being used to support the model (Tinsley & Tinsley, 1987), this is circular.

3.2.2. Convergent Validity

Convergent validity refers to the correspondence of two constructs and can be analysed by comparing the results of two tests that are based on a similar construct (Campbell & Fisher, 1959).

Research has tested the convergent validity between the WAIS-IV and the Wechsler Individual Achievement Test, version 2 (WIAT-II) (Wechsler, 2005). The Wechsler Adult Intelligence Scale, version 3 (WAIS-III) has also been compared to alternative assessments (Wechsler, 2008b). These include the Luria-Nebraska Neuropsychological Battery, version 3 (LNNB-III) (Golden, Purisch & Hammeke, 1985), Wechsler Abbreviated Scale of Intelligence (WASI; Psychological Corporation, 1999), Wechsler Intelligence Scale for Children, version 4 (WISC-IV) (Wechsler, 2003), the Stanford Binet Intelligence Scale now in its fifth edition (Roid, 2003), Kaufman's Adolescent and Adult Intelligence Tests, version 2 (KAIT-II; Kaufman & Kaufman, 1993) and Standard Progressive Matrices (SPM; Raven, 1976).

There were two tests that yielded positive data for convergent validity. The LNNB-III was considered to test similar skills as the WAIS-III with a strong relationship between the results obtained by each test (Devaraju-Backhus, Espe-Pfeiffer, Mahrou & Golden, 2001). The WAIS-IV technical manual indicates a .88 coefficient between the FSIQ on the WAIS-IV and the total achievement on the WIAT-II (Wechsler, 2008b). This is a tool for teachers to test scholastic related skills such as reading, mathematics, written language and oral language. Despite the correlation the two tests analyse different skills, a general factor for intelligence and scholastic skills.

The WASI is a screening tool used to make a brief assessment of IQ. It is a shortened form of the WAIS-III using 2 verbal and 2 performance subtests. Axelrod (2002) found verbal performance scores to be significantly higher on the WASI than the WAIS-III and performance scores also differed. The use of the WASI as an alternative to the WAIS-III was not recommended. There was also difficulties with the comparison between the WISC-IV and the WAIS-III with the WAIS-III scoring individuals at a significantly higher level (Whitaker, 2008). This difference could be as high as 11.82 points (Gordon, Duff, Davidson & Whitaker, 2010). The implications of this for individuals may be when they move services they may no longer be eligible for ID services. In terms of validity this indicates potential difficulties as the two tests are designed to test the same construct '*g*' yet the results gained differ significantly.

The correlation between the Stanford-Binet Intelligence Test, fourth edition (SB-IV) (Thorndike, Hagen & Sattler, 1986) and the WAIS-III were good or adequate with verbal Intelligence Quotient (IQ) correlating at a rate of .78, performance IQ correlating at a score of .89 and FSIQ at .88 (Wechsler, 1997). However, Silverman et al., (2010) found the WAIS-III FSIQ to be higher than the Stanford-Binet composite score with the mean difference being 16.7 points. The correlation between the KAIT-II and the WAIS-III does not appear to be solid. The correlation published in the KAIT-II manual was .76 and in the WAIS-III manual was .50. The correlations between the SPM (Raven, 1976) and the WAIS-III (Wechsler,

1997), SPM and verbal IQ of the WAIS-III, .49 and SPM and performance IQ, .79 and SPM and FSIQ was .64. These figures may be due to the nature of the SPM which utilises those skills more readily associated with the PRI of the WAIS.

The results indicate some issues with convergent validity with some assessments having a good correlation, for example the LNNB-III and the WIAT-II and some having a weaker convergence, WASI, WISC-IV and KAIT-II. However, some of the tests used for comparison were not testing the same aspects of '*g*' as the WAIS, for example the WASI was a short form of the WAIS and the SPM tested perceptual reasoning only. These as well as the issues highlighted by the differences in score between the WISC-IV and the WAIS-III prompt questions about the convergent validity of the WAIS. Further research is needed to analyse the convergence of the WAIS-IV to alternative tests and to investigate the root cause for differences in scores.

3.2.3.Predictive Validity

Predictive validity refers to the accuracy of the results of a test to predict an individual's performance or score for the criteria being tested (Davidshofer & Murphy, 2005). The WAIS-IV was identified as a tool for predicting performance in other areas. Whitney, Shepard and Davis (2013) tested the correlation between the Digit Span subtest of the WAIS-IV and memory and medical symptoms. They found the WAIS-IV

had low predictive validity and recommended it should not be used in this way. Higginson, Campbell and Gogburn (2000) tested the ability of the WAIS-III to predict inpatient adaptive functioning, the ability of an individual to cope with the demands of everyday living. They found that FSIQ was not correlated with scores on the Vinelands Adaptive Behaviour Scales although individual attention and general knowledge were. They did suggest that psychiatric symptoms within their sample may have contributed to this result and only 14 out of the 23 individuals in the sample had an ID.

In contrast, Drozdick and Cullum (2010) found a high correlation between FSIQ and WMI of the WAIS-IV and results of the Texas Functional Living Scale TFLS. The sample was based on 1,210 normally developing individuals and 212 participants from a clinical sample of which 62 had a mild (n=32) and moderate (n=30) ID, which means the results do not indicate norms for a specific population. These mixed results indicate the application of the WAIS-IV as a predictor of adaptive skills requires further consideration. However, the WAIS was found to be useful in predicting academic achievement. Kranzler, Benson and Floyd (2015) found that '*g*' was one of the most important factors to consider.

Thus the results are mixed. The WAIS can predict educational achievement but the results for predicting adaptive functioning indicate the WAIS is limited and not useful for predicting issues with memory and

medical symptoms. It may be that adaptive functioning requires a different set of cognitive skills than those required for *'g'.* However, this conclusion is based on a small body of research and more evidence is needed for more firm conclusions to be drawn.

3.2.4.Clinical Considerations and Concurrent Validity

Autism Spectrum Disorder

Developmental disabilities can affect the results obtained by the WAIS. Autism Spectrum Disorders (ASD) affects an individual's social communication, interaction and imagination (World Health Organisation [WHO], 2010) with these difficulties being present from an early age. People with a diagnosis of ASD can also experience difficulties with attention, sensory skills and anxiety, these limitations could affect performance. Deficits in social skills may affect literal understanding of language, understanding of facial expressions and body language. Social limitations can affect rapport with professionals (Attwood, 2007). Depending on the individual it may be that these features could affect a clinician's ability to measure IQ accurately.

Rapport is an important factor affecting quality of recall (Vallano & Compo, 2011). If rapport is reduced an individual may score less on a WAIS. Wechsler (2008a) emphasised the importance of rapport for gaining an examinee's full attention and maintaining their interest and cooperation with a higher level of rapport reducing anxiety. In turn,

people with ASD are known to experience higher levels of anxiety which may affect rapport and performance (Kim, Szatmari, Bryson, Streiner & Wilson, 2000). To address this a familiarity with the individual being examined may alleviate anxiety and enable the examiner to allow for or compensate for impairments.

Difficulties in engaging in assessments may be explained by difficulties with attention in ASD populations as noted by Hans Asperger in 1944. This was confirmed by subsequent studies which found that in a majority of cases people with ASD exhibited behaviours commensurate with Attention Deficit Hyperactivity Disorder (Fein, Dixon, Paul & Levin, 2005; Goldstein & Schwebach, 2004; Holtmann Bolte & Poustka, 2005). However, qualitative differences between the two disorders make them distinct (Nyden, Gillberg, Hjelmquist & Heiman, 1999). They found four aspects of attention were impaired for people with ASD. *Sustain* which refers to the duration of response to a stimulus from a task. *Focus-execute* which refers to selecting or paying attention to a critical stimulus. *Shift* which refers to the ability to focus in an adaptive way. *Encode* which refers to the contribution made by working memory (Mirsky, 1987). As a result people with ASD may have difficulties in sustaining attention during a task, understanding what critical tasks to attend to as well as shifting between one task and another as the perception is that a task could be incomplete. This indicates that a clinician should make adaptions for someone with ASD taking part in a WAIS.

Difficulties with sensory integration are also associated with ASD. This may be because people with ASD are more likely to perceive the world as a collection of individual elements that have no pattern or meaning rather than an integrated whole (Joliffe, Lansdowne & Robinson, 1992). This will affect an individual's ability to perceive and respond to stimuli and integrate the sensory world. This includes awareness of visual, auditory, tactile, taste and olfactory stimuli as well as an awareness of balance (vestibular) and proprioception or an awareness of one's position in space (Miller, Anzalone, Lane, Cermak & Osten, 2007). The effect of a lack of sensory integration may be reduced scores in subtests such as Block Design where visual-auditory and sensory-motor integration are required.

Research indicates that ASD can affect performance and the profile of results. Wechsler (2008b) analysed the pattern of results for people with Autistic Disorder and Asperger's Disorder. People with Autistic Disorder were found to have higher scores on perceptual tasks such as Block Design and Object Assembly as compared to their performance on other subtests. For those with Asperger's Syndrome (AS) verbal skills matched a control group although a lower score was found for working memory and processing speed. The results of other research did not match this, instead an individual with ASD will have a profile characterised by marked deficits or strengths in a particular index or indexes.

Kanai et al., (2011) found that FSIQ and Verbal Intelligence Quotient scores were higher for individuals with AS than Higher Functioning Autism (HFA) and Pervasive Developmental Disorder – not otherwise specified (PDD-NOS). Individuals with HFA had a lower score for Digit-Symbol Coding and Symbol Search. Ghaziuddin and Mountain-Kimchi (2004) found that individuals with AS had a higher score for verbal IQ, information and vocabulary subtests than those with HFA although the profile of individuals was mixed indicating profiles were not stable for each diagnosis. Holdnack et al., (2011) also found a difference for tasks based on auditory working memory and perceptual reasoning as well as differences between verbal comprehension skills between individuals with AS and Autism. Spek, Scholte and van-Berckelaer-Onnes (2008) found little difference between VIQ and PIQ although they recommended the use of subtests as a more helpful way of analysing differences between people with HFA and AS. This research does not provide a coherent understanding of what is to be expected from someone with ASD.

Joseph, Tager-Flusberg and Lord (2002) made relevant comments as they suggested that individuals with ASD have uneven cognitive development which will affect their cognitive profile, with higher VCI associated with individuals who are higher functioning. This has implications for concurrent validity, which refers to the extent to which a test can be used to discriminate between populations (Morisky, Green & Levine, 1986). Without a profile associated with a diagnostic category the WAIS cannot

be used to identify individuals who should be allocated an ASD diagnosis such as HFA. One further explanation for differences in scores is the requirement of tasks for theory of mind skills. Theory of mind is the ability to understand other viewpoints such as emotions and thoughts in response to contextual changes (Attwood, 2007). Happe (1994) suggested that theory of mind is required for the comprehension subtest but not for the block design. The explanation for the differences in scores is not clear and requires research.

Intellectual Disabilities

There are concerns regarding the use of the WAIS when testing individuals with an ID. One of these concerns was the stability of results. Whitaker (2008) conducted a meta-analysis finding that 14% of the sample had scores that varied by 10 points although the majority of participants had scores that only varied by up to 6 points. A limitation of this is the sample in Whitaker's review which included individuals between 70 and 80 which does not adhere to IQ levels required by the current definition of an ID, as outlined in the Introduction and Overview. There are further issues for people with low IQ scores due to the allocation of a scaled score of 1 being allocated in cases where the raw score is 0 which artificially elevates an individual's score. Also at very low levels there is no normal distribution (Whitaker, 2005, 2008a, 2010; Whitaker & Wood, 2008) causing difficulties with the interpretation of scores at these levels. However, improvements have been made to the language and

instructions within the WAIS-IV manual following comments made about the WAIS-III (McKenzie & Murray, 2004; Whitaker, 2012) which will improve the validity of this version. Clinical Psychologists would often have to alter the language and instructions to ensure that individuals with an ID understood what was being asked of them.

Substance Misuse

One further area where research has been used to discriminate between groups is substance misuse with mixed results. No difference was found between controls and individuals with a substance abuse disorder using the WAIS-III (Ryan, Arb, Paul & Kreiner, 2000). However, Brown and Ryan (2004) did find differences between controls and individuals with a substance misuse disorder with the scores in the clinical group being higher on the VCI and POI. This means no firm conclusion can be drawn on the use of the WAIS to identify individuals with a substance misuse or abuse disorder.

3.2.5. Test-Retest Reliability

Test-retest reliability refers to the consistency of results from one test administration to another (Gasser, Bacher & Steinberg, 1985). The Technical Manual for the WAIS-IV (Wechsler, 2008b) suggests that the WAIS-IV results are stable across time. Table 8 shows the correlation coefficients between the initial test and re-test with .9 or above being excellent, .8 or above being good, and .7 or above being adequate. The

correlation coefficients indicate the WAIS-IV has average to excellent reliability with the majority of subtests being good.

Table 8: Correlation coefficients for test-retest reliability of the WAIS-IV assessment.

Correlation Coefficients for Test-Retest Reliability	
Block Design	.80
Similarities	.87
Digit Span	.83
Matrix Reasoning	.74
Vocabulary	.89
Arithmetic	.83
Symbol Search	.81
Visual Puzzles	.74
Information	.90
Coding	.86
Letter-Number Sequencing	.80
Figure Weights	.77
Comprehension	.86
Cancellation	.78
Picture Completion	.78

However, these results were collected over a relatively short time span, months and weeks rather than years and long term reliability of any assessment is important (Iverson, 2001).

In a clinical context assessments are purchased and used over a period of years, so clinicians need to be confident that the results gained from a test administration are as valid as the date the test was published (Leifker, Patterson, Bowie, Mausbach & Harvey, 2010). This aspect of the WAIS appears to be problematic. The 'Flynn Effect' (Deary, 2001) refers

to a phenomenon identified by Flynn. He analysed historical data collected by the Dutch military draft board and found that IQ scores rose over successive years. If examinees were born in 1934 they scored over 20 points lower than those born in 1964. The Flynn Effect has also been noted within populations in 13 other countries (Flynn, 2007). Teasdale and Owen (2005) found supporting evidence for this although they also found that IQ reached a peak in the mid-90s and then declined. They explained this by citing the decline in post-16 education in the Dutch population. Thus IQ is not only influenced by biological factors, social factors such as improvements in education, nutrition and healthcare have been linked to changes in IQ levels (Neisser, 1998). Neisser suggests that developing countries should also experience IQ increases as these factors improve.

This has been supported by the work of Daley, Whaley, Sigman, Espinosa and Neumann (2003) who identified an increase in IQ over a period of 14 years in Kenya. WAIS scores are also key pieces of evidence when decision making, for example allocating the death penalty according to IQ levels, for example Atkins vs Virginia (Flynn, 2009; Cohen, 2013). Issues with the WAIS's reliability make these decisions difficult for Criminal Justice Systems. To improve accuracy Flynn has suggested a reduction of WAIS-III scores of 0.3 points per year between the date of publishing and its use. Thus a gap of 3 years would result in a reduction of 0.9 points. However, as IQ rates can both rise and fall between administrations and

as a result of contextual factors, applying this rule without research could add further inaccuracies to WAIS scores. Regular research is needed to update WAIS norms and maintain its test-retest reliability. The long term reliability of the current WAIS, the WAIS-IV is currently unknown requiring future research.

3.2.6 Internal Reliability

The validity figures published within the WAIS-IV manual (Wechsler, 2008b) indicate a good internal consistency. There are two types of internal reliability for the WAIS, the correlation between each subtest and FSIQ and within each subtest. Table 9 provides figures for correlations between the indexes, FSIQ and each of the 10 core subtests.

Table 9: Internal consistency figures for the WAIS-IV.

	VCI	PRI	WMI	PSI	FSIQ
BD		.86			.73
SI	.88				.77
DS			.90		.72
MR		.82			.75
VC	.92				.78
AR			.89		.77
SS				.91	.64
VP		.86			.70
IN	.89				.75
CD				.91	.68

The correlations of tests within each index were correlated to either an excellent or good level. The highest correlation was the verbal comprehension subtest and VCI (.92). The lowest correlations were within

the PRI for the MR subtest (.82). The correlations between subtests within the PRI were lower than other indexes and were overall higher within PSI. The correlations of all subtests with the FSIQ were adequate apart from SS and CO where the correlations were (.64) and (.68) respectively.

A review of the internal reliability of the WAIS-IV by Glass, Ryan and Charter (2010) provides a contrasting view of reliability within subtests. The scores for subtest discrepancy ranged from .55 to .88 and they stated that subtest discrepancy scores were not as high as .90 which is the level recommended for clinical decision-making. However, index reliabilities ranged from .80 to .91 with some meeting the .90 standard. This indicates that the rate of internal reliability needs to be improved to meet the standard required for clinical applications.

The WAIS-IV (Wechsler, 2008b) manual details internal consistency results which are good to excellent within each subtest, these are detailed in table 10. There is no independent research of this which indicates this is an area for further investigation.

Table 10: Internal consistency of items within subtests.

Subtest	Reliability Coefficient
BD	.87
SI	.87
DS	.93
MR	.90
VC	.94
AR	.88
SS	.81
VP	.89
IN	.93
CD	.86
LN	.88
FW	.90
CO	.87
CA	.78
PCm	.84

No test order effects were found within the WAIS-III (Zhu & Tulsky, 2000) although this also needs to be analysed for the WAIS-IV. Further research is also needed to independently test the internal reliability for the WAIS-IV identifying areas where interventions could be made.

3.2.7. Inter-rater Reliability

This refers to the level of agreement between raters of scores obtained (Ubersax, 1987). The figures from the WAIS-IV (Wechsler, 2008b) indicate an inter scorer agreement ranging from .98 to .99 based on 60 individual's scores. A shortcoming to this data is that raters were graduate level clinical psychology students with no previous experience of WAIS-IV scoring. A study by Ryan and Schakenberg-Ott (2003) found that a group of Psychologists and graduate students scored the WAIS-III at a similar level for indexes yet the range of results for FSIQ varied by 14 points and errors were made when scoring which reduced the scores overall. Thus, the experience of the examiners will affect results during research and during administration of the WAIS. Testing by a more experienced professional will improve the accuracy of the results obtained and is important to consider when results are reviewed. Intra-rater reliability is not considered by the literature and is an area to be addressed.

3.2.8. Confounding Variables

There are variables which may affect the results of the WAIS even if they are not manipulated by the psychometric test. Variables that have been researched include nationality, gender, age and education/culture (Davidshofer & Murphy, 2005).

Roivainen (2010) found that American WAIS-III norms were not useful when applied to other nationalities. Similarly Roivainen (2013) found cross-national differences between a Finnish and a US sample meaning that US based norms are not useful when used with a Finnish population. A different view came from Wycherley, Lavender, Holtnum, Crawford and Mockler (2005) who found that WAIS-III USA norms can be used with a UK sample. Thus there is no consensus as to the effect of nationality and the usefulness of norms developed in one country used with participants from another country.

Sex differences were found with males scoring higher results for information, arithmetic and symbol search and women scoring higher for processing speed. However, gender was not found to be related to FSIQ scores when using the WAIS-III (Irwing, 2012). Other research confirms the effect of gender as females had a higher digit-symbol and perceptual speed score. Males had a higher score on information, arithmetic, working memory and perceptual organisation (Van der sluis et al., 2006). In contrast to this no support was found for age influencing scores (Juan Espinosa et al., 2002). One paper indicated that education and culture had an influence on test scores (Walker, Batchelor & Shores, 2009) However, this is not an area of research that is well developed and requires consideration.

3.3.Conclusion

The WAIS is an assessment of *'g'* or a general factor for intelligence. The definition of this term has been the topic of debate since its inception. The WAIS aims to measure relevant cognitive facets of *'g'*. However research indicates there were limitations to this as not all facets of intelligence were tested, for example planning or emotional intelligence. In addition, the methods used to analyse the model on which the WAIS-IV were based were flawed. There were some positive results for convergent validity with the LNNB-II and WIAT-II yet there was weaker convergence with the WASI, WISC-IV and KAIT-II. Differences between the WISC-IV and the WAIS-III tests suggested further research was required to ensure these converge and individuals moving between children's to adult services do not become ineligible for support they should be provided with.

Other types of validity and reliability were also reviewed. The use of the WAIS for predictive validity applied to memory, medical symptoms and adaptive functioning appeared problematic although there was a good correlation between the results of the WAIS and academic achievement. Test re-test reliability figures published by the WAIS-IV indicated a good test re-test reliability in the short term although longer term reliability requires research and for this to be conducted regularly to measure accuracy and whether any adjustments need to be made to allow for changes to IQ within the whole population. The published results for internal reliability between subtest and FSIQ are positive. Results within

subtests were good to excellent, however independent research indicated that the consistency between subtests and FSIQ required improvement. The reviews of inter-rater reliability are limited with only one paper analyzing the WAIS-III independently of the WAIS technical manual. This indicated that an increased level of experience is associated with more accurate test scores. More research is needed to assess whether the reliability of the WAIS-IV matches those published in the manual (Wechsler, 2008b). Research also analysed the effect of variables such as nationality and gender on scores. However, again the evidence is limited and requires further development.

In terms of developmental disabilities a WAIS profile for someone with ASD was found to be uneven and consideration needs to be made due to problems that affect rapport, attention and sensory integration when administering the test to ensure performance is optimised. There were some difficulties with scores at a lower level of IQ and some instability in scores. A clinician will therefore need to use clinical judgement when interpreting the scores they obtain and be aware of personal characteristics that may affect results such as anxiety. Despite these difficulties 'the WAIS is ...by far the most popular test of adult intelligence' used by professional psychologists (p. 20, Lichtenberger & Kaufman, 2013).

4.Research Project

4.1.Article Title

An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder.

4.2. Abstract

The current research tested Weiner's (1985, 1993) theory of achievement, motivation and emotion as a framework for understanding responses of unqualified nursing staff to Challenging Behaviour (CB) exhibited by clients with an Autism Spectrum Disorder (ASD). One hundred and twenty seven unqualified nursing staff responded to an Attributional Style Questionnaire (ASQ) (Dagnan & Cairns, 2004) and questions based on a vignette. Demographic information was also supplied. The results found limited evidence for Weiner's theory. There was a positive correlation between attributions of controllability and responsibility, and negative correlations between controllability and the emotion of pity which matched the model. However, no correlation was found between controllability and anger and controllability and helping behaviour. The type of client (ASD) or Intellectually Disabled (ID) and the types of service (ASD specific or ID/Mental Health [MH]) did not affect the outcome. There was also limited evidence for the effect of demographic variables. Associations were found but too few to justify a regression model being applied. Qualitative data suggested that decision making was

influenced by a combination of client, staff and contextual variables. These constructs were not considered by Weiner's (1985, 1993) theory. The study questioned the value of Weiner's theory and recommended a contemporary exploration of the topic. Understanding this may help professionals improve practice and reduce CB in the future. Recommendations were also made to improve the questionnaire.

4.3.Introduction

The aim of this study is to examine whether Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion is a useful framework for understanding the cognitive, emotional and behavioural response of unqualified nursing staff when Challenging Behaviour (CB) is exhibited by clients with an Autism Spectrum Disorder (ASD).

Autism Spectrum Disorder and Intellectual Disability

ASD is a neuro-developmental disorder which can be diagnosed from an early age that continues to affect an individual throughout their lifespan. People with this disorder have difficulties with social interaction, social communication and social imagination (World Health Organisation [WHO], 1992; American Psychiatric Association [APA], 1994; WHO, 2013). The diagnostic term for these symptoms is debated with Autism, Asperger's Syndrome and Pervasive Developmental Disorders – not otherwise specified being used (WHO, 1992, APA; 1994; WHO, 2013). The APA have opted for ASD (APA, 2013). As well as a debate on terminology, a further

debate is the prevalence of ASD. A composite figure for prevalence is 1 in 160 (WHO, 2013) which equates to approximately 400,000 people in the UK (Office of National Statistics, 2012).

People with ASD also may have difficulties which include limited theory of mind (Attwood, 2007), which means persons with the disorder have difficulty understanding the perspectives of others. This lack of meta-cognition means they have difficulty comprehending their social environment. Sensory issues have also been associated with some clients who have ASD. This has been attributed to impairments in sensory processing (Kern et al., 2007).

This study examines staff responses towards clients with an ASD using responses to clients with an ID as controls. There are two reasons for this, the first being the diagnostic difference between ID and ASD (Kim et al., 2000; Hastings & Brown, 2002; McClintock, Hall & Oliver, 2003), the other is services are provided that are diagnosis specific for people with ASD or ID/MH. The term ID refers to a phenomenon that used to be termed a Learning Disability (APA, 1994; APA, 2013) where an individual has an Intelligence Quotient (IQ) below 70, they have difficulty with two or more adaptive functions and the problems have been present from before 18. ID is also expected to be used within the updated version of the International Classification of Diseases – Version 11 (ICD-11) (Salvador-Carulla et al., 2011) in place of Learning Disability. The British

Psychological Society (2015) published guidance on the assessment and diagnosis of ID which endorsed this definition although recommendations were made to improve the diagnostic process.

Despite the diagnostic distinction there are overlaps in symptomology. Matson and Shoemaker (2009) highlight the high rate of covariance between ID and ASD with individuals with both diagnoses having difficulties understanding abstract concepts, thinking rigidly and inflexibly, exhibiting stereotyped behaviour (Bhaumik et al., 1997; Matson & Shoemaker, 2009) and impaired adaptive behaviour (Bolte & Poustka, 2002; Boucher, Bigham, Mayes & Muskett, 2008). It is beneficial to consider this in more depth as there may be a qualitative difference between the two categories. People with an ID are understood to have difficulties with learning requiring education tailored to their needs, repetition and ongoing support to learn perhaps beyond school age (Flores et al., 2004), this indicates they can learn new skills and need to be offered that opportunity. People with ASD may find processing information as a whole problematic, instead they perceive the social world in distinct sections. This was suggested by the empathising-systemising theory (Baron-Cohen, 2009) and the theory of weak central coherence (Frith & Happe, 1994). This seeming overlap requires more research to clarify similarities and differences between the two categories as recommended by Matson and Shoemaker (2009).

The second reason for using people with ID as a comparison to ASD is the separation of the two client groups within services, which suggest a specialist service for each client group. Services such as these have come under increased scrutiny with recent catalysts being incidents of abuse such as The Winterbourne Unit (UK Care Quality Commission [CQC], 2011). The UK Department of Health (DoH) has made recommendations for improved care in both client groups. People with ASD are understood to need specialist services that feature relational and environmental stability and routines (DoH, 2010), whereas people with an ID require person-centred care taking account of individual needs (DoH, 2001). However, research does not indicate how the distinction or overlap between people with ASD and ID should be reflected in such services. In addition an individual could be placed within a service for ASD and have no ID or have an ID. Similarly an individual placed within an ID service may or may not have ASD. This may mean there is a potential for co-morbidity.

Challenging Behaviour

Both ID and ASD populations can exhibit CB. Banks et al., (2007) provide a definition of CB as behaviour "of such intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion" (p. 14). This definition emphasises the qualitative nature of CB and its consequences, and embraces the variety

of behaviours regarded as challenging (McVilly, Webber, Paris & Sharp, 2012). These include behaviours such as kicking, choking, throttling, aggression, biting, punching, slapping and use of a weapon (Emerson & Einfeld, 2011).

CB is inherently forensic behaviour as it would be very likely to attract police attention should it be exhibited in the community, and often involves expressive violence. The overlap between CB and forensic behaviour was discussed by Doyle (2004), who suggested an analysis of the function or goal of behaviour would indicate if criminal intent was present. Criminal intent is an intent to commit a crime, injure or deprive another (Agbonna, Jekayinfa, Yusuf & Mustapha, 2011). Research indicates that an ID affects a person's capacity to make decisions (Willner, Bailey, Parry, & Dymand, 2010), and arguably this could include criminal intent. However, issues with capacity do not preclude a person's behaviour from being identified as criminal (Lindsay, 2013) with violent and sexually aggressive crimes also being committed by people with an ID (Wheeler, Clare & Holland, 2013). The consequences of a crime such as a stay within a hospital provide an opportunity for rehabilitation in persons with an ID or ASD or someone with both diagnoses.

Simpson and Hogg (2001) found similar rates of offending in a population with ID as compared to a normal population, and some suggest offending rates within the ASD population are less than the normal population

(Woodbury-Smith et al., 2005). However, if ASD is co-morbid with another psychiatric disorder, for example drug misuse, offending rates increase (Langstrom, Grann, Ruchkin, Sjostedt & Fazel, 2009). There is also evidence that some types of offences can be linked to ASD symptomology. For example, violence and arson may be linked to the need to control the environment to allay anxiety, which is linked to difficulties with social imagination or being able to adapt to the environment (Mouridsen, 2012). Mouridsen also observed that sexual offences may be linked to difficulties with social interaction and forming healthy sexual relationships. If CB is associated with harm to the individual and others, it is a risk with forensic implications, and it is appropriate to seek to manage and/or reduce the behaviour.

In practice, many challenging behaviours that occur on a hospital ward or in a day-centre are managed by the staff who are most likely to be on the ward more of the time: Healthcare Assistants, Care Workers and Support Workers. These unqualified nursing staff are primary care givers who often outnumber members of trained nursing staff (Spore, Smyer & Cohn, 1991). The support untrained staff offer is defined loosely, but includes meeting the physical, social, and emotional needs of clients (Cowan, Brunero, Lamont & Joyce, 2013; Boerner, Burack, Jopp & Hock, 2014). This staff group also influences the behaviour of service users (Barton, Baltes & Orzech, 1980). Safran (1990) suggested that this influence arises from the schemas (cognitive structures) of the staff that shape

behaviour, these schemas are in turn affected by interactions with the environment.

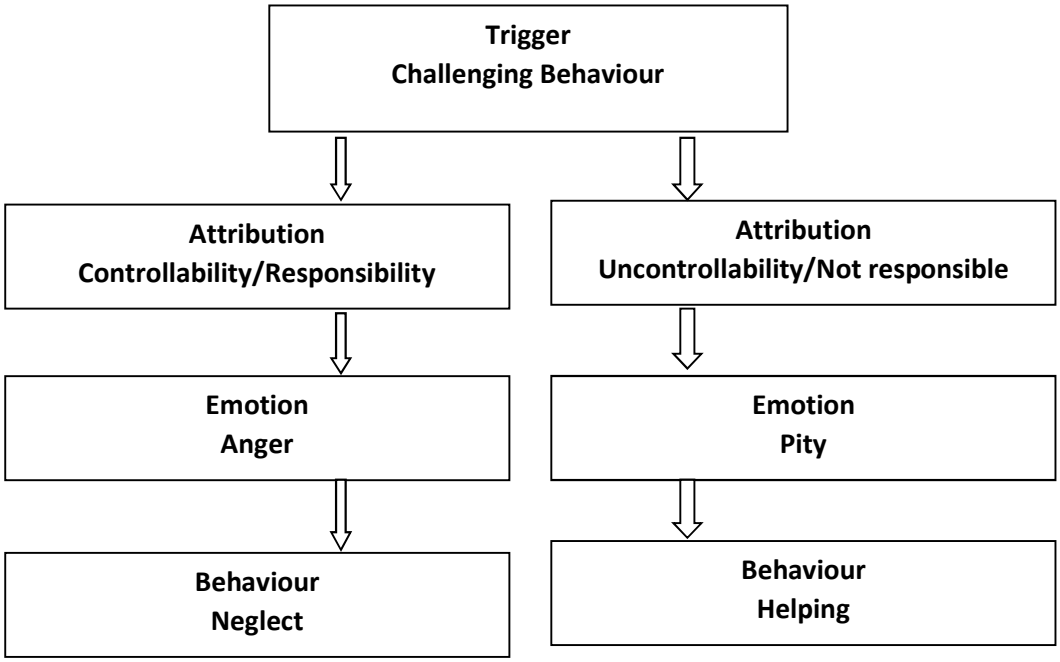
Bowen (1974) suggested that all the people in the institutional environment form a system or family shaping the emergence of an issue. It could therefore be argued that an in-patient or care setting could be understood as a system that exists as a pseudo-family. Thus the attachment relationships, interaction and culture of a system will have an influence on the service user (Rothbaum, Rosen, Ujie & Uchida, 2002). While individual differences in people with an ID or an ASD may limit the specific effect of the environment on the client (Pincus & Gurtman, 2006), unqualified nursing staff have been found to reinforce forensic or CB by spending little time with clients and responding inconsistently to CB (Hastings & Remington, 1994). Thus this is an important process to be understood and to enable practice to be improved.

Weiner's Theory of Achievement, Motivation and Emotion

One way of understanding the interaction between a patient and a member of staff is Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion. Weiner (1985) suggested that two pathways emerge when staff respond to CB. Within one pathway the attribution that the client cannot control his or her behaviour is made, and uncontrollability is associated with the carer feeling pity for the client, which results in helpful behaviour towards them. In the second pathway

an attribution of controllability is associated with emotions of anger towards the client, resulting in the client being neglected. This model was extended in Weiner's 1993 paper, where he suggests an association between the attribution of uncontrollability and the client lacking responsibility for his or her actions (see Figure 3 for a summary).

Figure 3: Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion



Previous research found supporting evidence for the model (Dagnan, Trower & Smith, 1998; Dagnan & Cairns, 2004). Stanley and Standen (2010) also found a link between challenging behaviour, attributions, emotions and helping behaviour. However, the results are contradictory: Jones and Hastings (2003) found little evidence of attributions being linked to positive or negative affect and suggested that the emphasis should be on emotions as opposed to attributions. Other researchers

found that staff optimism rather than affective judgements influenced the behavioural responses of staff (Sharrock, Day, Qazi & Brewin, 1990). Cudre – Mauroux (2010) suggested that Weiner's model fails to acknowledge temporal and contextual effects on behaviour. Thus the factors affecting responses to CB could be more complex than Weiner's (1985, 1993) dichotomous model suggests. Weiner's model has been used to analyse staff responses to the CB of individuals with an ID (Zijlmans, Embregts & Bosman, 2013). However, no research appears to have examined the applicability of the model to understanding staff responses to the CB of individuals with an ASD, or compared responses to clients with an ASD and an ID or a diagnosis related care context.

Staff Demographics

A number of studies have collected data on staff demographics as a way of providing a profile of their sample, for example Noone, Jones and Hastings, (2006). Yet no apparent analysis has been made of the relationship between attributions, emotions and intended behaviours of staff to CB and staff training and demographics, despite evidence suggesting that these factors may affect the interaction a member of staff has with a patient. Rose, Gallivan, Wright and Blake (2014) found that training influenced the attributions of staff, so they regarded the CB of clients as less under the individual's control. This meant they were more able to offer support. Campbell (2007) suggested that staff training was beneficial to those managing CB. Gandi, Wai, Karick and Dagona (2011)

found a relationship between higher levels of burnout and lower levels of job performance. Stress can affect empathy and the quality of interactions with patients. Rose, Horne, Rose and Hastings (2004) noted that under-resourced services can lead to burnout and negative emotional reactions to CB. A literature search found a paucity of research analysing the interaction between staff demographics and the variables discussed in Weiner's (1985, 1993) theory.

To determine the hypotheses, research on staff's response to stress, or burnout has been used. Brewer and Shapard (2004) found a relationship between higher age, more experience, and reduced levels of burnout in staff. It is unclear how gender affects an individual's ability to manage CB. Greenglass, Burke and Ondrach (2008) suggest that males experience a higher level of work-related stress. This finding was supported by Rupert and Kent (2007), who found less emotional exhaustion in female psychologists. However Erickson and Ritter (2001) and Whitehead (1989) found no differences in burnout between genders. Thus the association between gender and resilience to burnout is unclear. However, for the studies that found an association, males appear to be more vulnerable to burnout and are perhaps less resilient when faced with emotionally demanding situations such as CB.

Summary

This study was designed to determine whether Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion was a useful framework for understanding the process by which staff respond to CB exhibited by clients with an ASD as compared to clients with an ID. Types of contexts were also compared as well as the effects of staff demographics. In order to achieve this Part 1 of the hypotheses refers to Weiner's model overall. Part 2 and 3 refer to the type of service and type of client. The clients being compared were clients with ASD and ID, and an ASD-specific context or an ID/MH context. The final Part, 4, analysed whether staff demographics could be used to predict the attributions, emotions and intended behaviour of participants.

Hypotheses

Part 1

1.1. The attribution of uncontrollability is likely to be associated with the attribution of a lack of responsibility, the emotion of pity and a desire to respond helpfully towards a patient exhibiting CB.

1.2 The attribution of controllability is likely be associated with the attribution of responsibility, the emotion of anger and the intention to neglect a patient exhibiting CB.

Part 2

2.1. Staff in ASD-specific services are more likely to claim that clients cannot control their behaviour than if they work in an ID/MH context.

2.2. Staff in ASD-specific services are more likely to claim that clients are not responsible for their behaviour than if they work in an ID/MH context.

2.3. Staff in ASD-specific services are more likely to feel pity for clients than if they work in an ID/MH context.

2.4 Staff in ASD-specific services are less likely to feel anger for clients than if they work in an ID/MH context.

2.5. Staff in ASD-specific services are more likely to exhibit helping behaviour towards clients than if they work in an ID/MH context

Part 3

3.1. Staff are more likely to state clients with an ASD cannot control their behaviour compared to clients with an ID.

3.2. Staff are more likely to state clients with an ASD are not responsible for their behaviour compared to clients with an ID.

3.3. Staff members are more likely to feel pity towards clients with an ASD rather than clients with an ID.

2.4 Staff members are less likely to feel anger towards clients with an ASD rather than clients with an ID.

2.5. Staff are more likely to exhibit helping behaviours towards clients with an ASD compared to clients with an ID.

Part 4

4.1 Attributions of uncontrollability, lack of responsibility, pity and helping behaviour offered to a client with ASD will be correlated with a higher number of training days, a higher number of years of experience with ASD patients, a higher age, being female, working less hours per week, having higher qualifications and a higher staff grade.

4.4. Method

4.4.1 Participants

The study sought unqualified nursing staff. This population usually have the most daily contact with clients within hospitals and care homes, and they are also often the staff members first on the scene when CB occurs. Within each organisation unqualified nursing staff from two different contexts were recruited; ASD-specific and ID/MH-specific sites or wards. Two private organisations agreed to take part in this research. Both offer residential and secure services to people with an ASD and an ID/MH who exhibit CB.

The majority of participants were male (61%) and Care Workers (75%), with 39% being female and 25% Senior Care Workers. The mean years of work experience was approximately 5 years (SD = 4.81) with a range of 1 to 8 years. The mean age was approximately 39 years and most persons were between 30 and 50 years old. The mean hours worked per week was 39.07, between approximately 30 and 50 hours per week. The mean qualification was 3 (2.98) and between level 2 and level 4 qualifications. A

level 2 qualification includes NVQ 2 and GCSE/O'levels, whilst a level 3 qualification includes NVQ 3 and A' Levels. Thus the majority of participants did not have a higher degree.

Table 11: Demographic profile of the sample (n = 127).

Characteristics	Minimum	Maximum	Mean	Std. Deviation
Training days to manage CB	0	1200	33.08	112.91
Abridged training days to manage CB	0	50	17.75	15.10
Years working with ASD	1	20	4.81	3.47
Age	20	67	38.62	10.88
Hours worked per week	11	70	39.07	9.27

4.4.2 Design

Data on attributions, emotions and intended behaviours were collected via a questionnaire (see Appendix 4). The questionnaire was divided into four sections. Section 1 consisting of demographic questions, such as age, gender, and length of experience in current post. Section 2 comprised the ASQ used by Dagnan and Cairns (2004). This measured the attributions, emotions and behaviours employed when responding to CB of a client. The validity of this questionnaire is unclear as there appears to be no validity studies based on the ASQ used in this research. However, research has examined the validity of a range of questionnaires based on

the concept of attributions. Some studies found low reliability (Lewis, Waschbusch, Sellers, LeBlanc & Kelley, 2014), low predictive validity (Arntz, Gerlsma & Albersnagel, 1985), and a wide variability in attributions made (Higgins & Morrison, 1998) but this was contrasted by Dagnan, Hull and McDonnell (2013) who found good internal reliability and test-retest reliability. Thus there is a mixed picture with some explanation perhaps being that other variables affect responses to questionnaires similar to the ASQ, for example valence of an event (Arntz et al., 1985) or race (Thompson, Kaslow, Weiss & Nolen-Koeksema, 1998).

Section 3 of the questionnaire was used but the data was omitted from the analysis, as data from other sections of the questionnaire were sufficient to address the hypotheses (see Appendix 5). Section 4 included two vignettes based on Dagnan (2012), with associated follow-up questions based on the variables identified by Weiner's (1985, 1993) model. The vignettes were identical apart from one being attributed to a client with an ASD and the other being attributed to a client with an ID. The questions that follow the vignettes aimed to measure staff members' attributions, emotions and behaviours. The study was designed such that section 2 generated data for hypothesis 1. Section 1 and 2 generated data for hypotheses 2 and 4. Section 4 generated data for hypotheses 3. The study design was within groups for Part 1 of the hypotheses, between

participants for Part 2 and 3 and involved quasi-allocation to groups for Part 4, allocation being dependent on demographic characteristics.

It was hypothesised that there would be a statistically significant association between the staff variables and the independent variables. Thus a power calculation was conducted for a logistic regression. The number of participants required for the study was estimated using 'GPower' (Faul, Erdfelder Buchner & Lang, 2009). Assuming a medium effect and seeking a power of 0.8 and a significance of $p<.05$, it was estimated that the study would need 123 participants; in fact 127 participants were recruited.

4.4.3. Ethical Considerations

Ethical approval for this project was granted by the Institute of Work Health and Organisations Ethics Committee (2013) at the University of Nottingham. Before data collection each potential participant was provided with an invitation and information. They were then given the opportunity to ask questions. On some occasions staff were concerned that what they were saying would be passed onto management. They were reassured that all responses would remain confidential. Responses outside of the remit of the study were not recorded such as comments made about management, colleagues or patients. Following data collection all questionnaires and consent forms were allocated a code and then stored separately in two locked filing cabinets in a locked room to which only the Lead Psychologist and the researcher had access. This

ensured participant's confidentiality. Following the interview participants were provided with a de-briefing sheet and recommended to contact the counselling service attached to their organisation if they felt distressed by the questions asked. In both organisations this was offered free of charge and could be accessed via a telephone number. Participants were also encouraged to contact the researcher via their email address should they have any further questions about the project. Data files were password protected and the anonymised data will be retained by the University of Nottingham in a secure archive for seven years.

4.4.4. Data Collection

Initial contact for permission was gained via the Medical or Clinical Director within each organisation, The Huntercombe Group, and St Andrew's Hospital, Nottinghamshire. Once this permission was gained, an invitation letter was sent to each Ward Manager and multi-disciplinary team (see Appendix 6). Potential participants each received a separate Letter of Invitation (see Appendix 7). The sampling method was opportunistic, as the researcher booked a date for data collection and then interviewed staff who were available on the day and agreed to take part. Three participants declined to take part at this stage. At the point of interview each participant was given an information sheet (see appendix 8), given the opportunity to ask questions and signed a consent form (see appendix 9). Two participants declined to take part at this stage. Participants were asked to complete the questionnaire and then given a de-briefing sheet (appendix 10). Interviews

took place in a room on the ward e.g. an office or meeting room. The interviews were undisturbed by patients or other members of staff. Qualitative data collected from the first 17 participants was used as a pilot.

Data Analysis

To address Part 1 of the hypotheses, data was analysed using a Spearman's correlation coefficient as a non-parametric measure of statistical correlation between two ordinal variables. Part 2 was analysed using a t-test as a test of difference between two continuous independent measures, the context in which staff worked acting as two conditions. Part 3 was analysed using a chi-square as a test of differences in frequency between categorical variables. Part 4 was analysed using a non-parametric Spearman's correlation coefficient as a test of the correlation between two continuous variables, and t-tests. All quantitative data was analysed using the Statistical Package for the Social Sciences, version 22 (SPSS-22). Qualitative data was analysed using a thematic analysis (Braun & Clarke, 2006) and coded according to Boyatzis (1998).

4.5.Results

4.5.1.Hypothesis - Part 1

This experiment analysed the association between attributions, emotions and helping behaviours within the whole sample.

Table 12: The item or construct, range, mean and standard deviation of attribution, emotion and helping behaviours (n=127).

Item	Range	Mean	Std. Deviation
1. Individual in control of their behaviour	2.1–5.24	3.67	1.57
2. Individual responsible for their behaviour	2.56–5.52	4.04	1.48
3. Behaviour made me feel angry	0.98-3.46	2.22	1.24
4. Behaviour made me feel pity	2.14-5.44	3.79	1.65
5. I can always find a positive solution	4.45-6.85	4.75	1.35

The mean for each item or construct differed with 4.75 for item 5 being the highest and 2.22 for item 3 being the lowest. There was also evidence from the range that the response for item 5 and 3 were clustered around the lower and higher ends of the responses available on the Likert scale, which were 1-7. The means for question 1, 2 and 4 were 3.67, 4.04 and 3.79 respectively.

Table 13: Spearman's Correlation (Spearman's r) between attributions of control and responsibility (n = 127).

	Individual responsible for their behaviour	Behaviour makes me feel angry	Behaviour makes me feel pity	I can always find a positive solution
Individual in control of their behaviour	.58	.21	-.24	.07
Sig. (1.tailed)	.001	.01	.007	.21

There was a significant positive correlation between attributed controllability and responsibility: r (125) = .58, p = .001. There was also a statistically significant negative correlation between controllability and pity r (125) = -.24, p = .007 indicating that an increase in attributed controllability was associated with a decrease in pity. There was a statistically significant association between attributed controllability and anger r (125) = .21, p = .01 but the correlation between control and helping behaviour fell to non-significance: r (125) = .07, p = .21.

4.5.2.Hypothesis - Part 2

This experiment analysed the association between attributions, emotions and helping behaviour and the type of service participants work in.

Table 14: Results of the t-test comparing attributions of control for staff working with ID/MH and ASD cohorts (n=127)

	ASD (n = 65)		ID/MH (n = 62)			
Item	mean	SD	Mean	SD	t	P<
Controllability	3.46	1.60	3.89	1.53	-1.53	0.66
Responsibility	3.97	1.46	4.11	1.52	-.54	0.35
Pity	3.83	1.69	3.74	1.61	0.30	0.97
Anger	2.05	1.24	2.40	1.22	-1.63	0.26
Intended behaviour	4.65	1.39	4.85	1.30	-1.87	0.70

There was no significant difference in attributed controllability, responsibility, emotions of pity and anger and intended behaviour for staff working in ASD or an ID/MH service. This indicates that the nature of the service in which the participant works had no effect.

4.5.3. Hypothesis - Part 3

This part of the experiment analysed the frequency of attributions, emotions and helping behaviour and the type of client.

Table 15: The frequency of responses according to the type of client (n=127)

Item	ASD client (n = 64)		ID/MH client (n = 63)			
	Yes	No	Yes	No	Chi square value	P<
Controllability	24	40	22	39	.03	-.87
Responsibility	30	33	36	26	1.37	-.24
Intended behaviour	63	1	62	1	.001	.99
Anger/pity	Anger	Pity	Anger	Pity		
	13	44	21	40	1.94	-.16

The results of table 15 indicate that frequencies of attributions of controllability and responsibility, the emotion of anger and pity, and the intended behaviour did not differ according to the type of client seen by staff. The questionnaire contained two options "yes or no for most questions but for emotions the options were anger or pity.

4.5.4 Hypothesis – Part 4

This part of the study examined the association between staff demographics and attributions, emotions and intended behaviours. A multiple regression was proposed, but was not conducted as the level of statistical significance within the results was very low.

Table 16: Spearman's Correlation (Spearman's r) between attributions, emotions, intended behaviour and demographic characteristics (n=127).

	Individual in Control of Their behaviour	Individual responsible for their Behaviour	Behaviour made me feel anger	Behaviour made me feel pity	I can alwaysfind a positive solution
Abridged Training days To manage CB	.10	-.03	-.02	-.01	.15*
Sig. (1-tailed)	.13	.37	.40	.48	.05
Years working With people With ASD	-.10	-.20**	-.07	.02	.12
Sig (1-tailed)	.13	.01	.29	.42	.08
Age	-.15*	-.13	-.10	.08	.10
Sig (1-tailed)	.05	.07	.13	.18	.14
Hours worked Per week	.01	-.09	-.19**	-.10	-.02
Sig (1-tailed)	.47	.16	.01	.13	.41
Highest Qualification	-.03	.01	.06	.11	.10
Sig (1-tailed)	.38	.47	.25	.11	.14

(*=p<.05, **=p<.01)

There was a significant but small positive correlation between training days and helping behaviour r (122) = .15, p= .05. There is a negative correlation between age and controllability r (125) = -.15, p=.05.There is a negative correlation between attributed responsibility and years working with people with ASD r (125) = .20, p = .01. There is also a negative correlation between anger and hours worked per week r (125) = -.19, p =

.01. There are no further statistically significant associations for training days, age or qualification. These results show an association between demographic variables and the experimental variables inconsistent with Weiner's model.

Table 17: Results of the t-test for hypothesis 4 – staff grade (n=127).

Item	Care Worker (n = 95)		Senior Care Worker (n = 32)			
	mean	SD	mean	SD	T	P<
Controllability	3.71	1.58	3.56	1.56	0.44	.66
Responsibility	4.22	1.48	3.5	1.39	2.43	.02
Pity	3.80	1.62	3.75	1.74	0.15	.88
Anger	2.32	1.25	1.94	1.19	1.5	.14
Intended behaviour	4.73	1.32	4.81	1.45	-.31	.76

There was a significant effect for staff grade, t (124) = 2.43, p = .02 whereby senior care workers made lower attributions of responsibility regarding clients than less experienced staff.

Table 18: Results of the t-test for hypothesis 4 – gender (127).

Item	Female (n = 50)		Male (n = 77)			
	mean	SD	mean	SD	t	P<
Controllability	3.64	1.54	3.60	1.61	-.17	.87
Responsibility	3.78	1.52	4.21	1.45	-1.61	.11
Pity	3.72	1.70	3.83	1.61	-.37	.71
Anger	2.16	1.25	2.26	1.24	-.44	.66
Intended behaviour	4.84	1.45	4.69	1.28	.62	.54

There were no significant effects of gender on attributions, emotions and intended helping behaviours.

4.5.5.Qualitative Data

Qualitative data was gathered from 110 participant, detailed in Appendix 11. A pilot was conducted with the first 17 participants. A thematic analysis (Braun & Clarke, 2006) identified three themes or sets of factors that influence decision making when responding to CB; patient, staff and context. Sub-themes were also identified. These were coded and frequencies identified according to Boyatzis (1998).

Table 19: Themes and the frequency of subthemes

Theme and Subtheme	Frequency
Theme – Patient	
Person centred (the person is an individual)	23
Function	5
Diagnosis	6
Frustration tolerance	8
Theme – Staff	
Feel emotion	10
Feel no emotion	5
Professional	13
Protector	2
Develop skills in context	5
Knowledge of patient	9
Heuristics	1
Theme – Context	
Transaction	1
Context altered over time	1
Teamwork	5
Triggers	4
Section	1

The most frequent features of the qualitative data were that the patient is an individual (23) and the focus on being professional (13). The least frequent sub-themes occurred within the context theme, transaction, context altered over time and sections, once per sub-theme. Overall patient and staff factors were mentioned at a similar rate, 42 and 45 respectively. Contextual factors were mentioned less frequently (12).

4.6.Discussion

Summary of Results

This study systematically tested Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion in four ways. Part 1 of the hypothesis suggested that attributions, emotions and intended behaviour would be associated in accordance with Weiner's model. Results indicated a positive correlation between attributions of controllability and responsibility that matched the model as does the positive correlation between controllability and anger. The negative correlation between controllability and pity does uphold the model and the lack of correlation between controllability and helping behaviour does not support the model. Part 2 predicted an association between type of service (Part 2) and type of client (Part 3) and the variables identified by Weiner's model. No significant effect or difference was found, supporting the null hypothesis.

Part 4 suggested that generic staff variables would act as predictors of attributions, emotions and helping behaviours. The results indicated that the more years worked, the less likely there would be attributions of responsibility. As age increases controllability reduces and as training days increase helping behaviour increases. These matched the hypothesis. Contrary to the hypothesis, the more hours worked per week meant the less likely the emotion of anger was attributed or felt. No other correlations or associations were found. The qualitative results indicated three factors influencing decision making when responding to CB: patient, staff and contextual factors. The most frequently occurring factors were being person-centred (patient factor) and professional (staff factor). The least frequently occurring were contextual factors of transaction, context altering over time, and sections.

Whether general, secure or forensic, the job of unqualified nursing staff is to meet each client's physical, social or emotional needs (Cowan et al., 2013; Boerner et al., 2014). Their level of interaction with a client means unqualified nursing staff spend a high proportion of their working day with each client, and are in a position to have a significant impact on the quality of care and the achievement of treatment goals. This interaction is as influential as a forensic setting is, like most clinical settings, a system or pseudo-family. The figures in this system can influence the emergence of an issue or an individual's behaviour (Bowen, 1974). This is perhaps

why unqualified nursing staff have been thought to sometimes reinforce CB (Grey, Pollard, McClean & Barnes-Holmes, 2002). Reinforcing CB is undesirable if it is related to the individual's forensic history, reflects offence-paralleling behaviour, or constitutes an offence.

Part 2 and 3

The results of Part 2 and 3 of the study indicated that unqualified nursing staff did not alter their attributions, emotions or intended response according to the type of service they worked in or type of client they worked with. The diagnostic distinction between client groups would suggest some difference in responses to service and client should be evident. However, the needs of each client group may not be as distinct as the diagnostic labels suggest. The diagnosis of an ID is a difficulty in two or more areas of adaptive functioning, occurring before 18 and an IQ of 70 or under (APA, 1994). Whereas the diagnosis of an ASD relates to difficulties in social interaction, communication and imagination (World Health Organisation [WHO], 2013). However, this distinction becomes blurred given that people with an ID may also have high incidents of stereotypy, rigidity of thought and a tendency towards concrete thinking as opposed to abstract thinking, and are thus similar to an individual with ASD (Bhaumik et al., 1997). It is at present unclear how much overlap there is in the symptoms between the two groups; Matson and Shoemaker (2009) finding a high level of covariance. One explanation for

the results is that the overlap in symptomology means both services and client groups require a similar approach. This is highlighted by the observation that when completing the questionnaire, participants noted a difficulty distinguishing one group of clients from another. Alternatively, further research is needed to understand the interaction between forensic/CB, a diagnosis and the influence of staff in a forensic setting. Weiner's (1985, 1993) model may require revision, and the question may need a model with a wider remit.

Part 1

The findings of Part 1 support Weiner's (1985, 1993) model in part, reporting a positive correlation between attributions of controllability and responsibility and a negative correlation between controllability and pity, which matches the model. There was a positive correlation between attributions and anger which matches the model. However, the results for attributions and help did not match the proposed model. This mixed result reflects previous findings where there was only partial support for the model. Research supporting Weiner's model includes the work of Dagnan et al., (1998), Dagnan and Cairns (2004) and Stanley and Standen (2010). However, Jones and Hastings (2003) found little evidence of attributions having an influence. Sharrock et al. (1990) regarded staff optimism as important, and Cudre-Mauroux (2010) recommended analysing temporal and contextual effects. The work of Willner and Smith (2008) may be a helpful way of understanding these results. They

conducted a systematic review of research using Weiner's model, and found that studies based on staff who worked with people with ID were less likely to support Weiner's model. The evidence supporting the model therefore varies. Difficulties that may have contributed included the lack of definition of "helping behaviour" and the use of a vignette. The model was better when applied to behaviour that was infrequently exhibited within a population with a normal IQ.

Part 4

Part four of the hypothesis predicted that attributions of uncontrollability, lack of responsibility, pity and helping behaviour offered to a client with ASD will be correlated with a higher number of training days, a higher number of years of experience with ASD patients, a higher age, being female, working less hours per week, having higher qualifications and a higher staff grade. The results found no consistent association between staff demographics and the variables derived from Weiner's model. The results related to the work of Brewer and Shapard (2004) were mixed with no correlation found for staff grade, and modest correlations with years of experience, and age. The results found no correlation with gender which supported the work of Erickson and Ritter (2001) but contrasted to the work of Greenglass et al., (2008) and Rupert and Kent (2007) which indicated that males will experience higher burnout. The results indicated that higher hours worked per week were correlated with lower levels of anger, which was in contrast to the hypothesis. There was

also no correlation between qualifications and variables associated with Weiner's model.

Limitations

There were weaknesses to the assessment method. When completing Part one staff had difficulty recalling the precise number of training days they had. Also, their understanding of the term 'training' differed, with some counting only formal training and some counting days at work, work being considered as a forum for learning. When completing Part four, some participants had difficulty choosing either option or felt that no option applied, in particular the emotion of pity or anger. They also felt that the vignette did not provide enough information about the patient for them to select either option. Comments made by the first 17 participants during completion of the questionnaire were indicative of themes. Saturation did not occur at this point and comments were recorded as qualitative data (see Appendix 11) for the remaining 110 participants.

There is a possibility that the results may have been affected by the proportions of persons with particular qualifications. Most staff had qualifications at level 2 and 3, with only a few with more or less than this, although this may be explained by the recruitment criteria for the nursing posts. The contexts in which this research took place were two private organisations who were commissioned to care for National Health Service (NHS) patients. It is likely the training process would have been different

between each organisation and from the NHS and it is possible that these contextual variables may have affected the results.

Within the Introduction the diagnosis of ASD (WHO, 1992; 2013) and ID (APA, 1994; 2013) were outlined. There was also a reference made regarding the potential co-morbidity whereby people with ASD may or may not have an ID, and people with ID may or may not have ASD. Staff from two types of service were interviewed; staff from ASD only services and ID/MH services. However, the homogeneity of patients within each service was not assessed as part of this study. Therefore within each service there could have been some degree of co-morbidity and this could have affected the approach staff used when supporting individuals within each service. The effect of co-morbidity on the approach taken by staff could have introduced a confounding variable.

Further issues included the questionnaire; it has been used successfully in previous research (Dagnan & Cairns, 2004) but was not a psychometric tool validated on a large sample, using several questions to test one concept. Despite these difficulties one test was possible which was a test for construct validity, which refers to the effectiveness of a psychometric tool to measure the construct being tested (Peter, 1981). To test this the mean and the range for each construct were compared. The results outlined in section 4.5.1 showed that these differed, suggesting that the

ASQ was testing different constructs. It was concluded that there was a value in its use as a tool although the questionnaire requires development and testing.

There are a number of ways in which the validity and reliability of this tool could be improved. Content validity, the effectiveness of a psychometric tool to test all facets of a given construct (Haynes et al., 1995) could have been problematic due to there being one question per construct. This is different to assessments such as the Wechsler Adult Intelligence Scale, version 4 (Wechsler, 2008a; Wechsler, 2008b, Wechsler, 2008c) where different aspects of intelligence are tested, such as verbal comprehension and perceptual reasoning. Also each subtest includes a number of tasks or questions designed to test the same construct. Improving this is recommended and the use of multiple questions analysing one construct would then make a test for internal reliability possible. Internal reliability within a subscale or construct refers to an analysis of the effectiveness of each question to test the same construct (Wechsler, 2008c).

A further flaw was a lack of data regarding test-retest reliability, the consistency of results from one test administration to another (Gasser et al., 1985; Wechsler, 2008b). The evidence suggests a lack of consistency. The ASQ has been used to analyse the attributions of unqualified nursing staff, for example Dagnan and Cairns (2004) who found support for

Weiner's (1985, 1993) model and this differed to Jones and Hastings (2003) who found little supporting evidence. It is currently unclear if this lack of consistency can be attributed to the questionnaire or other variables such as context. This indicates that this aspect of reliability needs testing.

A flaw in the design of this research was the lack of a test-retest analysis which limited confidence in reliability. This type of reliability depends on the repeated use of a measure and an analysis of the consistency of the results (Davidshofer & Murphy, 2005). To support future research work it is recommended to analyse this, either during a study or perhaps following an improvement of the questionnaire. A further weakness was a lack of concurrent validity within the research. This refers to the use of two tests measuring the same construct (Davidshofer & Murphy, 2005), results can be used to analyse for convergence or divergence of results with perhaps more than one questionnaire being used to test the same phenomenon. This should be considered when designing future research.

The resources available for the research meant that no inter-rater reliability tests were performed and no intra-rater reliability tests were conducted. This refers to a comparison of the data when more than one researcher collects results (inter-rater) and a comparison of the data collected by one researcher (intra-rater) to analyse the consistency of

results (Davidshofer & Murphy, 2005). This is a weakness in the design of this research and should be considered when conducting future research in this area. Similarly, no data was available for predictive validity which is the accuracy of the results of a questionnaire to predict a phenomenon or behaviour such as management of CB (Davidshofer & Murphy, 2005) by unqualified nursing staff. Carrying out an analysis of this type of validity could support clinicians to apply the ASQ to assessing staff to enable effective support and training. The results of an ASQ could influence the modelling of good practice by professionals and educating staff, which may improve the rate of positive outcomes for patients.

Summary

Despite these shortcomings the data yielded valuable results. The quantitative data was also accompanied by qualitative data. The qualitative results indicated that factors affecting responses to CB were more varied than Weiner (1985, 1993) acknowledged. The results of the thematic analysis indicated three themes; the patient, the staff member, and the context. The most frequent construct was a person-centred understanding of the patient as an individual. There were also a number of other factors that were commensurate with this, such as the staff member's knowledge of the patient, triggers, a patient's section or diagnosis, and understanding differences in frustration tolerance which vary over time and context. The second most frequently occurring factor

was a need to be professional, and adhering to their professional role. This is an area that requires further research using a qualitative approach to enable the variables that affect staff interaction with patients to be identified.

Participants also made comments about the quality and length of induction and formal training, teamwork as well as modelling, and discourse as a means by which unqualified nursing staff learn their role. Unqualified nursing staff sought more integrated teamwork where other professionals such as Psychologists and Psychiatrists should be present in patient areas more often, engaging with unqualified nursing staff in discourse about patients. As well as discourses it may be that more integrated teamwork might provide the opportunity for modelling good practice and encouraging an in-vivo example for unqualified nursing staff to help them manage CB behaviour more effectively. The content and quality of training and its effect on practice requires investigation. Schemas develop via our experiences of the environment and become behavioural templates or scripts to use when triggers occur (Young, Klosko & Weishaar, 2003). Schemas may also be a useful psychological concept to implement here, as they appear to be used when people combine their knowledge of the patient with their understanding of their professional role. The role of schemas requires investigation.

The results indicate it may be time to rethink our understanding of the cognitive and affective influences underlying helping behaviours in clinical and forensic settings. It is possible that using schemas and discourse as psychological concepts may be useful to help understand the process by which unqualified nursing staff respond to CB. There are other contextual occupational factors that could be considered such as teamwork, modelling, the induction process and training. The context in which care of patients with ASD takes place may also have been influenced by government advice (DoH, 2001; DoH, 2010) published after Weiner's (1985, 1993) model. This suggests that the care environment has altered significantly. The qualitative results support this view, as they indicate that person-centred care, or knowing the individual needs of the patient is of paramount concern to the staff sampled. The staff's perception of their job role and their profession was also not an area addressed by Weiner's (1985, 1993) model. Thus further contemporary research is needed to identify the cognitive and emotional processes underlying helpful or neglectful behaviours towards clients with CB, possibly using a qualitative approach to identify variables.

4.7.Conclusion

The aim of the research was to test Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion as a framework for understanding the cognitive and emotional responses of unqualified nursing staff to forensic/CB exhibited by clients with ASD, and the effect these have on

behaviours. The results found limited evidence for Weiner's theory, a positive correlation between attributions of controllability and responsibility and controllability and anger, and negative correlations between controllability and the emotion of pity. No correlation was found between controllability and helping behaviour. The evidence supporting Weiner's model for understanding CB is limited. No effect was found between variables and type of client ASD or ID, or for type of service, ASD specific or ID/MH. There was very limited evidence for the effect of demographic variables on attributions, emotions and helping behaviours.

The qualitative data was more suggestive of decision making being influenced by three sets of factors, client, staff and context. There was also a sub-theme of a response to the client on a person-centred basis and being professional which was frequently expressed. The value of Weiner's (1985, 1993) model was questioned as it precedes the promotion of person-centred planning (DoH, 2001). It is recommended that there is contemporary explorative research to explain the response of staff to CB. Areas for future research were recommended, which should include a qualitative exploration of the area to identify the variables that affect staff interaction with patients, followed by the development of robust and thoroughly tested measures to support further quantitative research. Research analysing the role of schemas and staff training was also recommended. With a better understanding, the process could be

improved to enable staff to intervene more effectively to reduce CB and an individual's risk.

The organisations supporting the research were both organisations that provide rehabilitation, low and medium secure services and care homes for people with ASD and an ID. Weiner's model provided a limited understanding of staff interaction with CB behaviour and was therefore also of limited value in understanding how to reduce CB behaviour within these settings. An alternative method of addressing CB is reviewed in the next chapter, psychotherapeutic intervention.

5.Systematic review

A systematic review of the effectiveness of psychotherapeutic interventions on challenging behaviour among adults with intellectual disabilities.

5.1. Abstract

The aim of this review was to analyse whether psychotherapeutic interventions affect Challenging Behaviour (CB) in people with an Intellectual Disability (ID). Five databases were searched for papers dated between 2001 and 2015 resulting in 5,062 hits. There were eight papers that met the inclusion criteria and these were analysed qualitatively. The findings indicated that two interventions were effective at reducing CB; "Soles of the Feet" meditation and Solution Focussed Brief Therapy. The findings were mixed for Cognitive Behavioural Therapy. The review also identified issues with the evidence. The areas for improvement included the need to employ random allocation to groups and blinding to conditions. Consideration of possible confounding variables, such as level of intelligence, should also be made and an analysis conducted of the effect of intelligence. The measures used should be considered in relation to the same standardised outcome measures across studies. Also, defining CB more consistently may make research in this field more comparable.

5.2. Introduction

This review focusses on three concepts, Challenging Behaviour (CB), Intellectual Disabilities (ID) and psychotherapeutic interventions applied to reduce CB.

Challenging Behaviour

Banks et al., (2007) provide a definition of CB as behaviour "of such intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion" (p. 14). This definition is broad and could refer to a diverse range of behaviours and consequences, and does not convey the extent or nature of the problem. Emerson et al's 2001 review of British and US research identified the most common CB to be aggression, destructive behaviour and self-injury with prevalence rates being 10-15%. They also found that CB is more likely to be associated with adolescents or young adults, living with family, being a male, with low adaptive functioning and limited expressive and receptive communication.

Other research and reviews relate to the work of Emerson et al., (2001). Emerson and Einfeld (2011) indicated that behaviours such as kicking, choking, throttling, aggression, biting, punching, slapping and the use of a weapon could also be defined as CB. In addition to this the types of behaviour identified as CB by Tenneij and Koot (2008) included

oppositional behaviour, substance use, difficulties with impulse control and inappropriate sexual behaviour. An alternative is provided by Alborz, et al., (1994) who categorised challenging behaviour into 4 categories; aggression, destructive behaviour, self-injurious behaviour and other challenging behaviour. Sexualised behaviour could also be added as suggested by Heyvaert et al., (2010). Thus the behaviours identified as challenging are diverse with differing views regarding categorisation.

The prevalence rates identified for CB also differ, and could be as high as 45% (Grey, Pollard, McClean, MacAuley & Hastings, 2010) as opposed to the 10-15% suggested by Emerson et al., (2001). However, the study by Grey et al., (2010) did study severe CB associated with symptoms of psychiatric disorder. The findings of Tyrer et al's., (2006) were more in line with Emerson et al., (2001). They suggested a lower rate of 14% indicating CB was affected by carers' ability to cope. Thus prevalence rates across studies differ and other variables may influence CB. Grey et al., (2010) found that severe CB was associated with psychiatric disorders. This was challenged by Allen (2008) who found no link between CB and mental ill-health. Yet Hurley (2008) did find an association between types of psychiatric disorder and types of CB. Mental health is not the only factor influencing CB. McClintock et al., (2003) reviewed research and identified that CB was affected by gender, males being more likely to exhibit CB. CB was also affected by levels of intellectual impairment, co-morbidity, for example Autism and receptive and

expressive communication. Therefore, the types of behaviour regarded as examples of CB, the prevalence rates and variables affecting CB vary.

Reducing CB is important due to the likelihood that such behaviours will cause harm to the individual, for example self-injury or cause harm to others, if, for example, aggression or damage to property is exhibited. These behaviours constitute a risk which is the same as a forensic risk because a number of the behaviours deemed to be 'challenging' would be regarded as forensic if exhibited within a community setting. Forensic/CB could include choking, slapping and punching other people. However, even though CB behaviour occurs, people with an ID are often not arrested for this behaviour as they are already being cared for by a service designed to manage CB and meet their individual needs (Alderman, 2001). Therefore reconviction rates cannot be used to analyse the prevalence of CB or to measure changes in an individual's risk.

Commissioned services will also frequently use risk assessments such as the Historical Clinical and Risk assessment (HCR-20) (Lindsay, Hogue, Taylor, Steptoe & Smith, 2008) designed to assess for risk of future violence which takes into account CB exhibited currently and in the past. It should be noted that Boer, Frize, Pappas, Morrissey and Lindsay (2010) did identify the need to adapt the HCR-20 for offenders with an ID. The HCR-20 is also used to assess the forensic risk of offenders (Douglas & Webster, 1999) and in association with this assessment professionals will

seek to review treatment needs to reduce an individual's risk (Szymanski & King, 1999).

Intellectual Disability

The term ID refers to a phenomenon that used to be termed a Learning Disability (LD) (American Psychiatric Association [APA], 1994; APA, 2013) where an individual has an Intelligence Quotient (IQ) below 70, they have difficulty with two or more adaptive functions and the problems have been present from before the age of 18. ID is also expected to be used within the updated version of the International Classification of Diseases – Version 11 (ICD-11) (Salvador-Carulla et al., 2011) in place of LD. The British Psychological Society (2015) published guidance on the assessment and diagnosis of ID which endorsed this definition although recommendations were made to improve the diagnostic process. Within research ID and LD should be understood as interchangeable concepts. Other related terms include developmental disabilities and mental retardation. Mental retardation was the term used previous to LD (Soenen, Van Berckelaer-Onnes & Scholte, 2009).

An ID is an example of a developmental disorder characterised by functional and intellectual deficits (Skotarczak & Lee, 2015) with examples of other developmental disorders being, Autism Spectrum Disorder (ASD), Down's Syndrome and Cerebral Palsy. However, the category is problematic as not all developmental disorders are

characterised by low levels of IQ according to the Diagnostic and Statistical Manual, version 5 (DSM-V) (APA, 2013). This thesis has so far discussed issues related to two developmental disorders, ID and ASD. There is a paucity of research relating to psychotherapeutic interventions for people with ASD making it difficult to include studies of people with ASD within this systematic review.

Psychotherapeutic Interventions

There are a number of types of intervention which are designed to reduce CB. Heyvaert et al., (2010) suggested three categories for these; biological, psychotherapeutic and contextual. This review is concerned with psychotherapeutic interventions which are based on psychological theory, but aim to build skills and empower the individual (Bhaumik, Gangadhardan, Hiremath & Russell, 2011). These are distinct from interventions based on psychological theory, such as the behavioural approach, which aims to analyse and alter the environment enabling the individual to get their needs met without having to resort to CB (Schalock et al., 2007). There are also difficulties with this approach as behavioural treatments do not support the development of self-regulation skills (Burns, Bird, Leach & Higgins, 2003).

A psychotherapeutic intervention has been defined as a therapy where a client discusses areas of difficulty or need to consider developing skills or

making changes to improve the situation in which they find themselves. These are often described as 'talking therapies' (Feltham, 1995) and include approaches such as Cognitive Behavioural Therapy (CBT) (Serfarty et al., 2009) and Psychodynamic Therapy (Marks & Gelder, 2011). Therapies can be conducted on a 1:1 basis where the intervention can be personalised or within a group setting where skills can be taught and discussed (McRoberts, Burlingame & Hoag, 1998).

Previous Reviews

Interventions research has been reviewed with two being particularly useful to this review. The first being Heyvaert et al., (2010) which analysed the effect of three types of intervention, psychotherapeutic, biological (pharmacological) and contextual, on the CB of individuals with an ID. They found that all types of treatment had an effect on CB with no one treatment being more effective than another. Features of this paper prompted a fresh review. The analysis within this paper was conducted quantitatively which necessitated a reduction of papers meeting the inclusion criteria from 80 to 30. They include 13 papers using a psychotherapeutic approach, although only 5 papers used psychotherapy alone. The other 8 papers combined a psychotherapeutic intervention with biological and/or contextual interventions. A review analysing research using a psychotherapeutic approach as the only intervention appeared

useful. The papers included in Heyvaert et al., (2010) were also dated up to 2008 and an update appeared timely.

The second paper on which this review is based was a review of psychological interventions designed to target CB in which the authors discussed the existing evidence and its quality. Their findings were that there was a paucity of evidence of a higher quality such as Randomised Control Trials. The authors recommended an improvement to this (Campbell, Robertson & Jahoda, 2014). However, the remit of this paper did not include an analysis of the results of studies. A discussion of findings appeared to be an important addition to current understanding.

As well as these two reviews a literature search identified 17 other reviews, although none matched the remit of this review. 6 reviews analysed the effect of the behavioural approach on CB. Petscher, Rey and Bailey (2009) found that differential reinforcement of alternative behaviour was effective at reducing CB. Denis, Van den Noortgate and Maes (2011) found that Behavioural interventions were effective at reducing self-injurious behaviour in people with ID. Brosnan and Healy (2011) found that Applied Behavioural Analysis was an effective intervention to reduce aggression. Prangnell (2010), in contrast, found the efficacy of behavioural interventions to be variable. Harper, Webb and

Rayner (2013) approached the topic differently and reviewed evidence rather than pooling findings.

Two reviews analysed behavioural interventions and the effect of CBT. Hassiotis and Hall (2004) and Gustafsson et al., (2009) found that interventions were effective but there were some shortcomings to the amount of evidence available. There was also a review of CBT used to target anger (Nicoll, Beail & Saxon, 2013), finding a large effect size although low sample sizes were a difficulty. Three papers reviewed the support for mindfulness, Blair-Kennedy and Resnick (2015), Chapman et al., (2013) and Hwang and Kearney (2013). Heyvaert, Maes, Van den Noortgate, Kuppens and Onghena (2012) reviewed intervention. Other reviews include an analysis of the interaction between communication and CB (Walker & Snell, 2013) and psychosocial intervention and vocal CB (Vanderkerken, Heyvaert, Maes & Onghena, 2013).

There was also a review of the effect of interventions on seclusions and restraints (Gaskin, McVilly & McGillivray, 2014). Taylor (2002) analysed the assessment tools used to measure the effectiveness of treatment for anger and aggression in people with an ID, finding that the evidence was sparse and more was needed. He identified that the evidence base for psychotropic medication was lacking. Behavioural interventions appeared effective with the evidence base again requiring further work. He also

analysed the evidence for CBT with promising results but identified the characteristics of CBT that cause change needed identifying. Vereenoogh and Langdon (2013) also found CBT to be effective but questioned the effect of other psychological interventions.

Summary and Question

In summary, there are indications that psychological and other interventions have an effect on CB exhibited by people with an ID. There is a need for an updated review of psychotherapeutic interventions with a discussion of the results. To address this, the following question has been asked:

How do psychotherapeutic interventions affect Challenging Behaviour in people with an Intellectual Disability?

5.3. Method

PICO

The review is based on the following PICO:

Table 20: PICO for the review

Population	Adults with an ID
Intervention	Psychotherapeutic interventions
Comparison	Different types of psychotherapeutic interventions
Outcome	Improvements in CB

Search Strategy

In accordance with the protocol a database search was performed on 2nd January 2015 using the following databases and gaining the following number of hits; Psychinfo (500), Web of science (3012), Medline (465), Elsevier Science Direct (508) and ASSIA (577), see figure 4. The following terms were used:

(intellectual disabilit* OR developmental disabilit* OR learning disabilit* OR mental retardation OR complex need OR high support need) AND (challenging behaviour OR problem behaviour OR aggression OR self-injury OR self-injurious behaviour) AND (intervention OR treatment).

This search produced 5,062 hits of which 51 were duplicates with the remainder being screened using the titles and abstracts. Nineteen were selected for assessment using the inclusion/exclusion criteria. One expert, Peter Sturmey, was contacted before the completion of the review. No new papers were found using this method. On 10th January 2015 13 journals were searched electronically via the University of Nottingham UNLOC facility and 4 were hand searched, see table 21 for details. This identified 1 new paper bringing the total to 20. The purpose of electronic and hand searching in addition to database searching was to ensure a robust search method. Once the inclusion/exclusion criteria were applied 12 papers were excluded for the following reasons; a lack of data on effect size (4), the study not measuring change using a pre and post

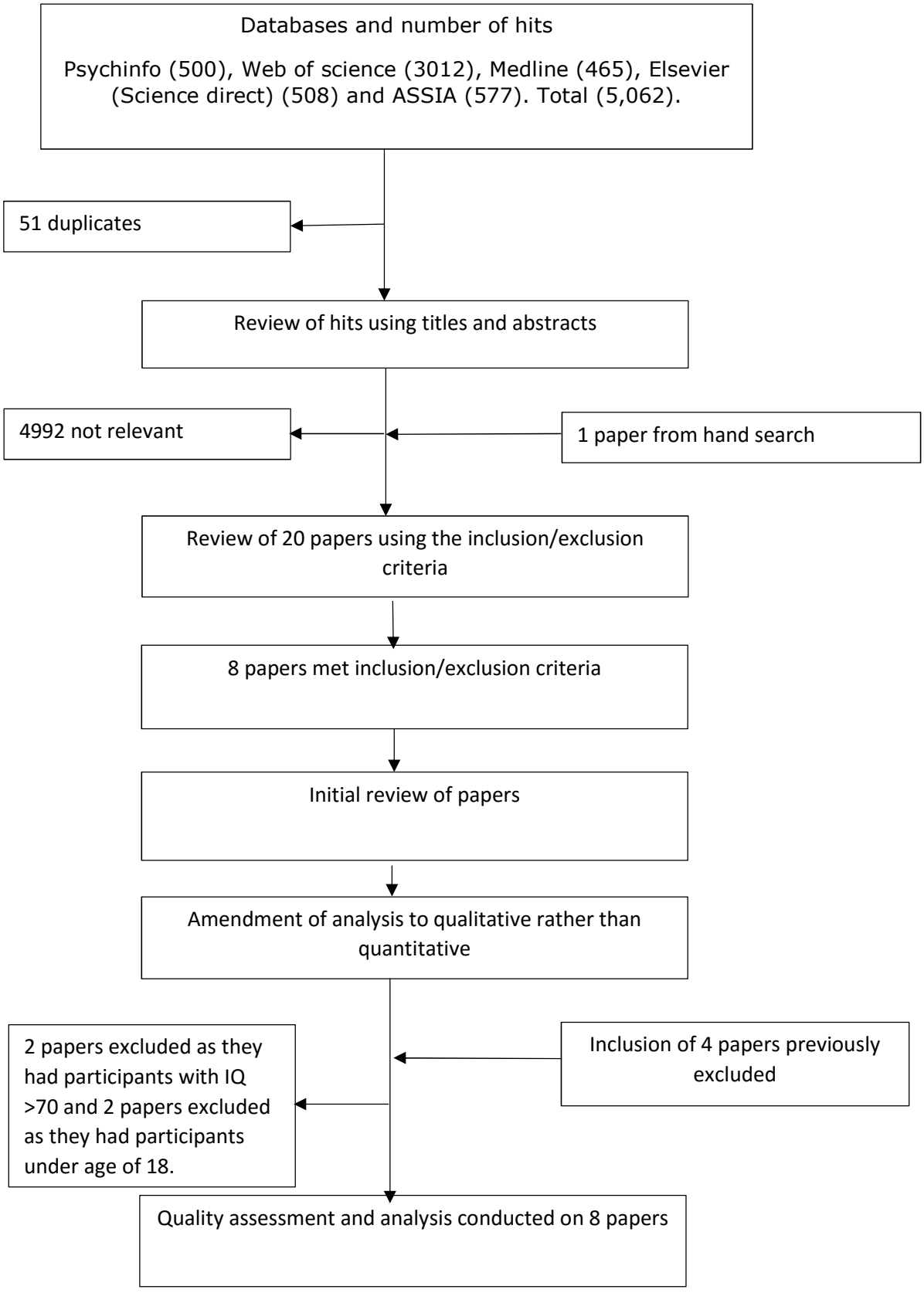
treatment measure (5), an unobtainable dissertation (1), not all participants needing support to decrease challenging behaviour, for example depression being a treatment target (1) and being written in 2000 (1).

Eight papers met the inclusion criteria. However, during the initial assessment it became evident that a quantitative analysis of the results would not be possible. There were three reasons for this; some papers did not include the figures required for a quantitative analysis such as means and standard deviations. The time frame for the review did not allow for authors to be contacted asking for the required data. The outcome measures tested conceptually different variables, for example anger, aggression and arson related attitudes. This made the use of a statistical test such as *Cohen's d* difficult. However, this amendment meant that 4 papers that had previously been excluded due to their lack of empirical data were now included. Out of the 12 papers now included two were then excluded as they included individuals with an IQ >70 which does not meet one of the criteria for ID as defined in the introduction. Also, two papers were excluded as they included individuals under the age of 18 which does not match the PICO, table 20.

Table 21: Names of journals searched on 10th January and type of search.

Journal Title	Type of search (electronic, E or hand, H)
International Journal of Developmental Disabilities	E
Advances in Mental Health	E
American Journal of Intellectual Disabilities	E
Developmental Disabilities Research Reviews	E
Journal of Intellectual Disabilities	H
Journal of Policy and Practice in Learning Disabilities	E
Journal of Learning Disabilities	H
Journal of Applied Research in Intellectual Disabilities	E
Journal of Intellectual and Developmental Disabilities	E
Focus on Autism and other Developmental Disabilities	E
British Journal of Learning Disabilities	E
British Journal of Developmental Disabilities	E
Journal of Developmental and Physical Disabilities	E
American Journal of Mental Retardation	H
Research in Developmental Disabilities	E
Journal of Applied Research in Intellectual Disabilities	H
Analysis and Intervention in Developmental Disabilities	E
Applied Research in Mental Retardation	E

Figure 4: Flowchart of literature search



Types of Study Design

In accordance with the protocol quantitative studies of any experimental design were included. Reviewed studies were primary studies, thus systematic reviews, meta-analyses or similar work were excluded. The studies included needed to aim to reduce CB. The definition of CB as set out in the introduction section was used with CB understood to incorporate anger with a behavioural or externalised component, aggression, arson and maladaptive behaviour. The papers selected for the review dated from 2001 to January 2015 as this followed the publication of Valuing People – a new strategy for Learning Disability for the 21st century (Department of Health [DoH], 2001). This government White Paper was the prompt for a number of changes to the care of people with ID such as an emphasis on person centred care. These changes to care may be a confounding variable.

Types of Participants

The participants were adults with an ID with each study having less than a 50% drop out rate for participants.

Types of Interventions

Psychotherapeutic interventions were the focus of this review.

Types of Outcome Measures

An inclusion criteria was that a pre and post measure were used to

evaluate the treatment for effectiveness. The change from a quantitative to a qualitative analysis meant there was no longer a requirement to extract figures such as the mean, standard deviation and effect size as required by the protocol. However, relevant figures were still extracted as evidence of the findings for each study. Please see appendix 12 and appendix 13 for a copy of the inclusion/exclusion criteria and the data extraction tool.

Analysis

The analysis was qualitative using an inductive approach with evidence being collected in its available form rather than extracting required figures such as the mean and standard deviation.

Quality Assessment

The quality assessment was based on the tools published by the Critical Appraisal Skills Programme [CASP] (2010). The types of quality assessment tools used were the Randomised Control Trial and the Case Control Study. The form for the Case Control Study was amended following the initial assessment of papers to include further information on confounding variables, see appendix 14 for a copy of the forms used.

5.4. Results

The papers that met the inclusion criteria are listed below, for detailed results of these papers please see table 22.

- Lindsay, Allan, MacLeod, Smart and Smith (2003)
- Burns et al., (2003)
- Hagiliassis, Gulbenkoglu, Di Marco, Young and Hudson (2005)
- Taylor, Novaco, Gillmer, Robertson and Thorne (2005)
- Singh et al., (2008)
- Rose (2010)
- Willner et al., (2013)
- Roeden, Maaskant and Curfs (2014)

Types of intervention

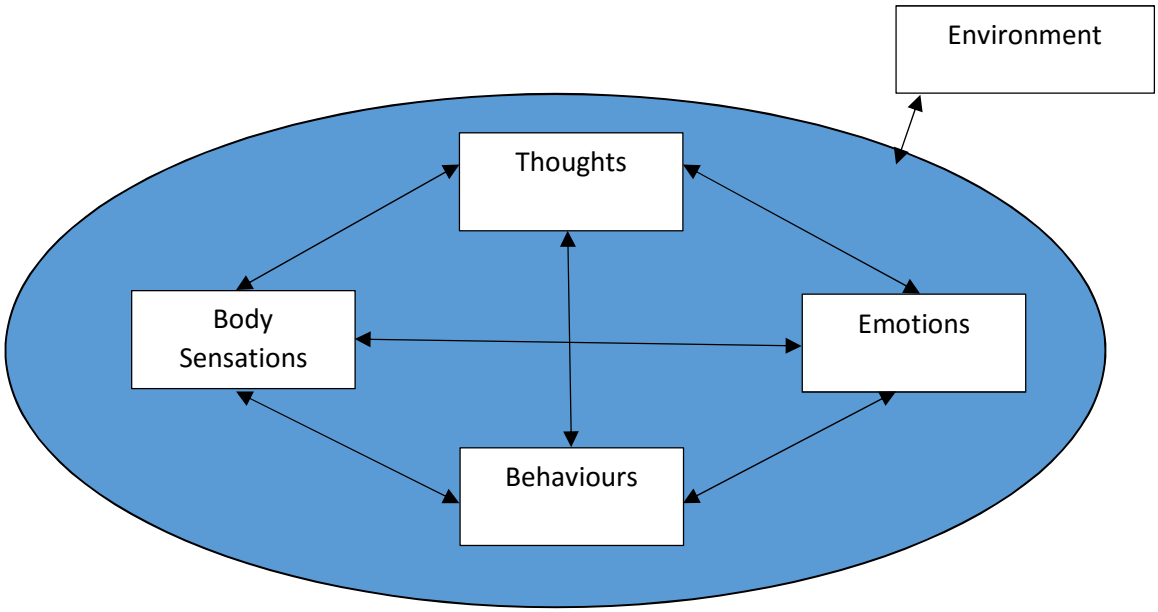
The types of psychotherapeutic intervention referred to in included papers were CBT, Soles of the Feet Meditation (SoF) and Solution Focussed Brief Therapy (SFBT).

Cognitive Behavioural Therapy (CBT)

The CBT model is concerned with cognitions or appraisals of situations (Hagiliassis et al., 2005) and how they affect behaviours. However, it does also consider emotions and body sensations and how all four interact and affect each other (Grant, Townend, Mulhern & Short, 2010), figure 5 provides an overview of the model. The therapy is based on the work of Beck (1963 & 1964) and Ellis (1957) and is now widely used for

conditions such as depression and anxiety (Clark, 2011). The results of this systematic review indicate that it has been used to target anger (Burns et al., 2003; Taylor et al., 2005; Lindsay et al., 2003; Willner et al., 2013; Rose, 2010, Hagiliassis et al., 2005), aggressive behaviour (Rose, 2010) and abberant behaviour (Willner, et al., 2013).

Figure 5: CBT model of the person



"Soles of the Feet" (SoF)

This intervention was used by Singh et al., (2008). The paper outlines the SoF meditation as a mindfulness technique designed to shift an individual's attention from the cognitive, physical and emotional sensations of anger to a neutral focus, the SoF. This reduces aggression. The paper claimed that SoF is a CBT based intervention. However, it is also based on Buddhist philosophy, with the meditation technique being the factor for change rather than recognition and alteration of automatic

thoughts as used by Beck (1963 &1964) and Ellis (1957). Thus it has been separated from standard CBT.

Solution Focussed Brief Therapy (SFBT)

This intervention was used by Roeden et al., (2014). It is described as a non-directive talking therapy where the client identifies goals and the steps by which they will achieve those goals. The therapist supports and facilitates this process. Individuals can be referred by others or refer themselves with the route for referral affecting the approach taken by the therapist.

Pre and Post Treatment Results

The results of table 22 indicate that the results for CBT were mixed. A reduction in anger was found for the emotion of anger, reaction to role plays and on self ratings of anger (Lindsay et al., 2003). Scores for anger increased (Hagiliassis et al., 2005) which they stated indicated increased skills in coping with anger. Anger reduced as well as the emotional element of aggressive behaviour (Rose, 2010). Burns et al., (2003) found no significant difference for anger and aggression (Burns et al., 2003) for two participants and a reduction for one participant. Taylor et al., (2005) found a reduction in anger using psychometric assessments and carer ratings of anger. Willner et al., (2013) found no reduction in anger and a reduction in aberrant behaviour (Willner et al., 2013). The other interventions did not have mixed results. The paper using SoF found a

reduction in aggression (Singh et al., 2008). When SFBT was employed a statistically significant reduction was found for maladaptive behaviour (Roeden et al., 2014).

Types of Outcome Measures

The outcome measures differed between studies, 5 studies used unvalidated measures such as the frequencies of behaviours and anger (Singh et al., 2008; Lindsay et al., 2003). The measures used by other papers included Aberrant Behaviour Checklist (ABC) used by Willner et al., (2013). The ABC is an informant based assessment with 58 items grouped into 5 scales; irritability, lethargy, stereotypy, hyperactivity/noncompliance and inappropriate speech (Aman, Singh, Stewart & Field, 1985). The Provocation Inventory (PI) was used by Willner et al., (2013) and Taylor et al., (2005). The PI is a 25 item test based on self-report measuring the triggers for anger being disrespectful treatment, unfairness, frustrations, annoying traits of others and irritations (Hornsveld, Muris & Kraaimaat, 2011).

The Modified Overt Aggression Scale (MOAS) was used by Willner et al., (2013) and Burns et al., (2003). The MOAS measures the frequencies of four categories of aggression by an observer; verbal aggression, aggression against objects, aggression to self and others. Additionally the aggressive behaviour that the interventions offered are recorded (Alderman, Knight & Morgan, 1997). The Novaco Anger Scale (NAS) was

used by Burns et al., (2003) Taylor et al., (2005) and Hagiliassis et al., (2005). The NAS is a 60 item test based on self-report measuring an individual's experience of anger. The outcomes are divided into cognitive, arousal and behavioural elements and anger regulation (Hornsveld et al., 2011). The Ward Anger Rating Scale (WARS) was used by Taylor et al., (2005). The tool is used by an informant to measure verbal and physical aggression to the property of others as well as affective-behavioural attributes such as being irritable or annoyed (Haddock et al., 2009). The Challenging Behaviour Attributions Scale (CHABA) was used by Rose (2010). The CHABA measures the application of a causal model by staff where they rate the causes for CB. There are four categories of causes; learned behaviour, medical/biological, emotional, physical environment and self-stimulation (Hastings, 1997).

The Reiss Screen for Maladaptive Behaviour (RSMB) was used by Roeden et al., (2014). The RSMB is a 38 item assessment completed by an observer of behaviours that may be indicative of further issues; aggressive behaviour, Autism, psychosis, paranoia, depression (behavioural signs), depression (physical signs), dependent personality disorder and avoidant personality disorder (Sturmey, Burcham & Perkins, 1995). The Spielberger State-Trait Anger Expression Inventory, version 2 (STAXI-2) was used by Taylor et al., (2005) and Burns et al., (2003). The STAXI-2 was a 57 item self-report measuring angry state and angry trait or disposition (Spielberger, 1999). A carer Inventory was used by Rose

(2010) who adapted a self-report measure to an inventory used by carers as a judgement of how each individual would respond in a given situation. They cite Benson and Ivins (1992). The Anger Inventory used by Lindsay et al., (2003) did not appear to be a validated scale but was a self-report based on a number of statements.

Profile of Studies

The numbers of participants within studies ranged from 3 to 91, the mean being 21.4. Most studies provided demographic data for participants. Of those studies that provided relevant information the environment for the studies included 3 community placements of which 3 noted a reduction in outcomes. In the 1 forensic mental health facility there was a reduction in outcomes, in the medium secure psychiatric hospital there was a reduction for 1 participant and not for 2 participants. In the forensic mental health facility for people with ID there was an overall reduction in CB. In the day care services a reduction in two outcomes were found but no reduction in one outcome. In terms of ID it was difficult to pool figures for the IQ. The range of those included was 55-71.6 and the terms severe, moderate, mild and borderline were used. Ages of participants ranged from 18 to 66. Some studies used a mixture of men and women (3) and some used men only (3). The range of length of treatment was between 12 sessions and 27 months.

Table 22: Characteristics and results of studies included in the systematic review

Author	Participants	Intervention group or individual	Type of intervention	Relevant measures	Did the intervention reduce CB?	Quality Score
Studies including adults only						
Lindsay et al., (2003)	**Number**, 6 **Setting**, Community **ID**, mean 67.33 (range=64 – 70) **Age**, mean 28.33 (range = 18 – 42) **Gender**, male	Group	CBT – circa 40 sessions	Anger inventory, self-reports of anger experienced in a day, responses to anger role plays	Anger inventory a reduction in emotion from a mean of 34.8 pre-treatment to 11.5 post treatment and for action a mean of 18.1 at baseline and 7.5 at post treatment. For the role plays a reduction in means from 10.1 pre-treatment to 2.3 post treatment. For weekly self ratings of anger a mean of 12.5 pre-treatment reduced to 7.7 post treatment.	13 CC
Burns et al., (2003)	**Number**, 3 **Setting**, Medium secure forensic psychiatric hospital, detained under the Mental Health Act (1983) **ID**, mild/borderline **Age**, mean 35yrs 5 months (33 - 37)	Group	CBT – 12 sessions	NAS, MOAS, STAXI-2	NAS – No significant difference before and after the intervention for two participants and a significant difference before and after the intervention for 1 participant, C= 0.431, $p<0.05$. MOAS and STAXI-2 – No significant difference between	11 CC

	Gender, male.				figures before and after treatment.	
Hagiliassis et al., (2005)	**Number**, 14 **ID**, mild/borderline – 6, moderate – 4, severe – 4 **Age**, mean 44.93 (SD=13.04) **Gender**, 7 male and 7 female	Group	CBT – 12 sessions	NAS	NAS – Increase in scores on NAS (pre intervention mean – 80.79, SD 18.04 and post intervention mean 97.38, SD 21.27). Statistically significant difference $t(13) = 3.34$, $p<.01$.	18 CC
Taylor, et al., (2005)	**Number**, 16 **Setting**, In-patients detained under the Mental Health Act 1983 **ID**, mean 67.1 (SD 4.5) **Age**, mean 29.4 (SD=7.6) **Gender**, male.	Group	CBT – 18 sessions	NAS, STAXI-2, PI, WARS	NAS – a significant reduction was measures between scores pre and post treatment. The mean and (standard deviation) was 104.37 (12.33) pre-treatment and 95.69 (12.69) post treatment. The figures for the STAXI were for AX the mean pre-treatment was 42.37 (SD=10.38) and post, mean 32.87 (SD=12.75). For anger control was pre-treatment mean 16.31 (SD=4.21) and post treatment mean 18.37 (SD=5.55). The data for the PI was pre-treatment mean 73.19 (SD=12.15) and post treatment the mean was 62.00 (SD=15.92). For the WARS the figures altered from mean 7.94 (SD=6.74) to mean 4.69 (SD=4.05). There was a reduction all measures apart	17 RCT

					from the anger control where there was an increase.	
Singh et al., (2008)	**Number**, 6 **Setting**, Forensic mental health facility for individuals with an ID **ID**, 1 mild, 1 incompetent to stand trial, 4 no detailed information provided. **Age**, mean 28.5 (23 - 36) **Gender**, male.	27 months – to be practiced daily and when required to reduce aggression.	Soles of the feet (Mindfulness)	Frequency of physical and verbal aggression per month.	Physical aggression was measured during the baseline period at a mean of 2.33 (range=1-3) (1 case), mean 2.3 (range=2-3) (1 case), mean 2.60 (range=0.4) (1 case), mean 2.00 (range=0-3) (for 1 case), mean 1.29 (range=0-2), mean 1.00 (range=0-2). The frequency reduced to 0 post treatment. The reduction of physical aggression reduced by mean 16% (range=4% to 38.5%) between the baseline and treatment and mean 11% (range=8.6% to 14.3%) for verbal aggression.	12 CC
Rose (2010)	**Number**, 19 **Setting**, Community **ID**, mild/borderline **Age**, 38 (18 – 66) **Gender**, 10 male, 9 female.	Group	CBT – 16	Carer Anger Inventory and CHABA	Carer Anger Inventory – the pre-treatment figures for the mean and (standard deviation) were 94.51 (13.69) and post treatment 85.32 (14.11). The data was not compared between pre and post treatment but between the treatment and control group. CHABA – The reported figures were for a significant difference between the emotional element	18 RCT

					of aggressive behaviour between the experimental and control groups. No data was available indicating the change pre and post treatment.	
Willner et al., (2013)	**Number**, 91 **Setting**, Day care services. **ID**, mean 59 (55 – 64) **Age**, mean 37 (27.5 – 48.5) **M/F**, 71.4% male	Group	CBT – 12 sessions	PI, ABC, MOAS	No significant reduction in anger using the PI, reduction in aberrant behaviour pre=treatment mean 9 (SD=5-17) and post treatment 7.9 (SD=7.7). Irritability the pre-treatment mean was 9 (SD=5-15) and the post treatment mean was 7.5 (SD=7.8 using the ABC. Figures for the MOAS were mean 8 (SD=4-22) pre-treatment and post treatment mean 10 (SD=14.8).	15 RCT
Roeden et al., (2014)	**Number**, 18 **Setting**, Community **ID**, mean 61.3 (SD 6.4) **Age**, mean 43.4 (SD 16.4) **Gender**, not stated	Individual	SFBT	RSMB	RSMB – Before treatment mean 11.6 and post treatment mean 5.9. Mean change -5.7, z=-3.7, p<0.01, r=0.62, large.	18 CC

Note: quality assessment scores are out of 20 for Case Control designs (CC) and 22 for Randomised Controlled Trials (RCT).

Quality Assessment

The quality assessment identified strengths and areas for improvement, quality assessment scores ranged between 11 and 18. Strengths of studies included Burns et al., (2003) who discussed co-morbid issues, offence, length of stay in current setting, the setting, and qualifications of therapists and measured the inter-rater reliability for the MOAS. Roeden et al., (2014) considered and analysed the effect of age, IQ and adaptive functioning on the experimental variable, discussed the training of therapists and support offered outside of therapy. Singh et al., (2008) considered a profile of the participants including age, offending history and history of CB and provided a description of CB pre-treatment.

Hagiliassis et al., (2005) discussed their recruitment process, and the method they used for random allocation, their drop outs were explained, intervention described and they analysed the difference between group participants although they did not analyse the interaction between possible confounding and experimental variables. Rose (2010) used a regression to consider the relationship between confounding and experimental variables and matched their control group on a number of variables. Taylor et al., (2005) modified measures for people with ID, they used a comparison group, random allocation and used groups that were comparable on a number of measures. Confounding variables were considered although the only one analysed was IQ where the effect was not significant. Roeden et al., (2014) considered confounding variables

but there was no analysis. The training of therapists and support offered outside of therapy was discussed. Willner et al., (2013) discussed attrition rates and causes, there was also a discussion of confounding variables but no analysis.

Areas for improvement included Burns et al., (2003) who did not use blinding and there was no analysis of confounding variables. Roeden et al., (2014) used low participant numbers, 3. Singh et al., (2008) did not use a standardised measure, there was no effect size stated, no control group used, no randomised allocation and no p values or confidence intervals given. Rose (2010) did not use blinding or random allocation. Lindsay et al., (2003) did not use a comparison group. Hagiliassis et al., (2005) did not indicate confidence intervals. Taylor et al., (2005) did not use blinding or a control group. Willner et al., (2013) used lay therapists provided only with a brief training period.

5.5. Discussion

The results of this review provide an indication of the benefits of psychotherapeutic interventions for people with an ID who exhibit CB. For two of the interventions, SoF and SFBT the results indicate a reduction in CB. The outcomes from the studies applying CBT were mixed although the majority of studies measured a reduction in CB following treatment. There was an increase in the outcome measured in Hagiliassis et al., (2005) although they stated that this indicated an increase in coping skills. However, the measure used, the NAS, was also used in other studies, for example Taylor et al., (2005) where a reduction in scores was commensurate with a reduction in CB.

As well as the review of results, a quality assessment was conducted. The findings from this reflect the conclusions of Heyvaert et al., (2010), Campbell et al., (2014) and Taylor (2002) where psychotherapeutic interventions were found to be effective, but the heterogeneity of the variables analysed within research, outcomes measured and behaviour targeted made it difficult to draw conclusions without caveats.

Divergence of Challenging Behaviour Measured

The studies reviewed in this paper measured CB in four ways; behaviour that had been exhibited, emotions, triggers and predicted behaviour. Thus not all outcome measures analysed CB as defined in the introduction section. In addition the types of CB measured are conceptually

convergent and divergent which meant that outcomes were difficult to compare.

Each measure that analysed behaviour as exhibited defined the construct in a different way. The ABC measured CB that had been exhibited within 5 scales; irritability, lethargy, stereotypy, hyperactivity/noncompliance and inappropriate speech (Aman et al., 1985). The MOAS differed from this as it measured the frequencies of four categories of verbal aggression: aggression against objects, aggression against self and others (Alderman et al., 1997). The WARS again measured aggression but defined it as aggression to the property of others, affective-behavioural attributes such as being irritable or annoyed (Haddock et al., 2009). The RSMB measured behaviour that may be indicative of further issues; aggressive behaviour, Autism, psychosis, paranoia, depression (behavioural signs), depression (physical signs), dependent personality disorder and avoidant personality disorder (Sturmey et al., 1995).

There were three different measures of the emotion of anger and, again, each measure defined the concept of anger differently. The NAS measured an individual's experience of anger, cognitive, arousal and behavioural and anger regulation (Hornsveld et al., 2011). The STAXI-2 measured characteristics of an individual's angry state and angry trait or disposition (Spielberger, 1999). The Anger Inventory used by Lindsay et al., (2003) did not appear to be a validated scale but was a self-report

based on a number of statements with information about this scale being limited.

Two measures analysed causes or triggers for anger and CB. The PI measured the triggers for anger as, unfairness, frustrations, annoying traits of others and irritations (Hornsveld et al., 2011). The CHABA measured the causes for CB in four categories; learned behaviour, medical/biological, emotional, physical environment and self-stimulation (Hastings, 1997). The final measure analysed predicted behaviour of an individual in a given situation. Rose (2010) developed a Carer Inventory based on a self-report measure.

Outcome Measures

Outcome measures were completed by individuals with differing subjective viewpoints, for example self-report or by an observer. Measures used by an observer included the ABC (Aman et al., 1985), the MOAS (Alderman et al., 1997), the WARS (Haddock et al., 2009), the CHABA (Hastings, 1997) and the RSMB (Sturmey et al., 1995). Measures based on self-report included the PI (Hornsveld et al., 2011), the NAS (Hornsveld et al., 2011), the STAXI-2 (Spielberger, 1999) and a Carer Inventory (Rose, 2010).

The structure of measures differed and this could affect the comparability of results. The ABC had 58 items grouped into 5 scales (Aman et al.,

1985). The PI was a 25 item test measuring the triggers for anger being disrespectful treatment, unfairness, frustrations, annoying traits of others and irritations (Hornsveld et al., 2011). The MOAS measured the frequencies of four categories of aggression (Alderman et al., 1997). The NAS was a 60 item test measuring an individual's experience of anger over four scales (Hornsveld et al., 2011). The WARS measured three categories of aggression and behaviour (Haddock et al., 2009). The CHABA measured four categories of causes; (Hastings, 1997). RSMB was a 38 item assessment measuring 8 categories of behaviour (Sturmey et al., 1995). The STAXI-2 was a 57 item test with results being divided into two categories of anger (Spielberger, 1999). The structure of the Carer Inventory (Rose, 2010) and the Anger Inventory (Lindsay et al., 2003) were not detailed in the papers.

The differences in concepts measured and structure reflect the characteristics of each measure. The ABC (Aman et al., 1985) was used to assess problem behaviours in mentally retarded individuals. The PI (Hornsveld et al., 2011) and NAS (Hornsveld et al., 2011) can be used with people with mental disorder and developmental delay. The adaptions for this client group include reading the items out to the person. It is unclear from the published papers what adaptions were made for use with an ID population. The MOAS (Alderman et al., 1997) was not originally developed for an ID population. The WARS (Haddock et al., 2009) was developed for older adults with mental health problems. The CHABA

(Hastings, 1997) measures staff attributions of challenging behaviour. The RSMB (Sturmey et al., 1995) is a screening tool for mental health problems in persons with mental retardation and the STAXI-2 (Spielberger, 1999) was not developed for people with an ID.

There was one further issue with measures which was that some studies use unvalidated measures such as the frequencies of behaviours and anger (Singh et al., 2008; Lindsay et al., 2003). In particular the Carer's Inventory used by Rose (2010) was adapted from a self-report measure (Benson & Ivins, 1992). Rose (2010) did examine internal consistency (Alpha=.880) but other types of validity and reliability were not discussed. The adaptions were made for the purpose of this paper and the measure was not analysed for psychometric properties before use. The validity and reliability of each measure used has not been examined within this paper as this is not the focus. However, this would be a useful area for future research which could lead to recommendations for use of the measures that possess the most robust psychometric properties when studying CB. A further need is to examine the suitability of each measure for use with an ID population with recommendations for adaptions to maintain consistency between applications.

Interpersonal Variables

As well as difficulties with the heterogeneity of measures and outcome variables there are difficulties with the heterogeneity of participants and intrapersonal factors. The context in which studies were conducted vary with community, day centre and secure facilities being featured. The context in which research takes place or in which participants reside is important as differing contexts have been found to affect CB (Hastings & Remington, 1994).

One element of this context may be the amount and/or type of support offered, for example whether someone lives with their family in the community or in supported living (Mansell, 2006). Participant's characteristics and intrapersonal and contextual factors may be especially important to analyse when conducting research with participants with an ID. Holden and Gitlesen (2006) found social and cultural context to have an influence on CB.

It was difficult to identify the levels of ID within studies as some studies used the terms, severe, mild and borderline with no definitions as to what levels were included within each term and some studies defining IQ by a number. There could be a variability in participants due to IQ, with a significant difference in skills being found between an individual understood to have severe ID and mild ID (Aylward, 2002).

There was also a variety of genders used in the studies. Some used males and females and some used only males. The research conducted by Emerson et al., (2001) suggested that CB was most likely to be exhibited by males. The meaning this has for a mixed gender study is unclear and the effect this has on comparing mixed gender studies with male only studies is also unclear. Despite these issues with heterogeneity the range of ages is good across studies, ranging from 18 to 66. By analysing the effect of confounding variables on results, it may be possible to further define the factors that influence CB. It may also indicate whether the findings have a level of validity. Some studies discussed possible confounding variables and some did not. Thus there was no consistent approach to this issue.

Heterogeneity of Intervention

An additional difficulty is the differences in mode of delivery which provides differences in levels of individualised support. The interventions SoF and SFBT have a personalised element. SoF requires the individual to discover the skill for themselves and to find what is an effective way of inducing a mindful state (Singh et al., 2008) and SFBT is a one-to-one based therapy (Roeden et al., 2014). In contrast CBT intervention appears to have been run in a group context (table 22). The papers do not indicate the use of further individualised support to help individuals personalise skills. The results may suggest mode of delivery is an important element to consider when offering interventions to people with

an ID. CBT was the only intervention run in groups and the only intervention yielding mixed results. A further difficulty with comparing interventions is the length of treatment with SoF being the longest (27 months) and the shortest being CBT with one group being as short as 12 weeks.

Power

One final difficulty is the power of studies. The number of participants used within studies is low with the least being 3 and the most being 91.

Summary

There are a number of areas where improvements could be made standardising the measures and intrapersonal variables between studies so that the intervention would be the only variable altered. If the power of studies was also improved this would provide an improvement in comparability between studies. The review also conducted a quality assessment which identified strengths and areas for improvement. Strengths included the programme being modified for people with an ID and papers describing the intervention and the training of therapists to provide the intervention. Methodological strengths include inter-rater reliabilities for measures, using a firm recruitment process and analysing the reasons for drop outs and attritions. Areas for improvement include the need to use comparison groups and consistently employing randomisation and blinding procedures. The quality assessment again

indicated a disparity in strengths between studies which should be addressed in future research.

5.6. Conclusion

In conclusion the findings indicated that psychotherapeutic interventions affect and reduce CB in individuals with an ID in line with the findings of Heyvaert et al., (2010). There is a caveat to this conclusion in that the body of evidence contained variable methodological quality. There were also improvements that could be made, for example to the power of the evidence by increasing the number of cases sampled. The evidence also did not consistently analyse the effect of variables such as context, support offered, gender and levels of ID on outcomes. There was also a lack of consistency in the definitions of CB measured as outcomes and the measures used.

6.Conclusion

This thesis made contributions to the scientific literature through the results, conclusions drawn and recommendations for future research. The Case Study acted as an introduction to the remainder of the thesis, the individual had both an Intellectual Disability (ID) and an Autism Spectrum Disorder (ASD) and had exhibited Challenging/forensic behaviour (CB),

Chapter 2

This case study was an example of the application of psychological theory to a complex case which demonstrated strengths and limitations of the tools available to Psychologists and the difficulties of using these tools for a patient with developmental disabilities. Patient x discussed in the case study was an individual exhibiting frequent and seemingly unprovoked violence. It was found that both ID and ASD were useful diagnostic frameworks for understanding Patient x's needs. Other factors included environmental characteristics such as a punitive male role model and physical abuse in childhood which could have affected development and provided examples of limited problem solving strategies. One other factor that may have contributed to violence was deficits in face perception affecting recognition of the emotions of others and this was targeted in treatment to little effect. It was concluded that deficits may have been 'hard wired' into neurological structures and may be difficult to alter through short term therapy.

The discussion within the case study highlighted a number of areas to consider. The sources of data used to compile the formulation was limited, in particular interviews with family were not included. This also limited the usefulness of the assessments. Comments were also made about assessments used with the conclusion being that despite their successful application to this case their shortcomings required further investigation. Improvements to their validity when applied to a population with ID/ASD was recommended. The usefulness of the formulation was discussed with its format being identified as of value in this case. However a more in-depth use of the behavioural approach could have enhanced an understanding of CB. Research investigating the effectiveness of psychotherapeutic interventions for people with ASD was recommended.

Chapter 3

The Wechsler Adult Intelligence Scale, version 4 (WAIS-IV) (Wechsler, 2008a) was reviewed although reference was also made to version 3 (Wechsler, 1997). This assessment was used within the case study and a critique was considered timely following the publication of guidelines for identifying ID by the British Psychological Society (2015). Chapter 3 highlighted the limitations in the body of evidence examining the validity and reliability of the measure. The WAIS was used to assess '*g*', or a general factor for intelligence, and has been a widely used measure. However, the assessment was found to be limited as not all facets of

intelligence are tested, for example planning and emotional intelligence. The methods used to analyse the model on which the WAIS-IV is based was also found to be flawed.

Despite these shortcomings, there were positive results for convergent validity between the WAIS and the Luria-Nebraska Neuropsychological Battery, version 3 (LNNB-III) (Golden et al., 1985) and Wechsler Individual Achievement Test, version 2 (WIAT-II) (Wechsler, 2005). There was weaker convergence between the WAIS and other tests including the Wechsler Abbreviated Scale of Intelligence (WASI) (Psychological Corporation, 1999), Wechsler Intelligence Scale for Children, version 4 (WISC-IV) (Wechsler, 2003) and Kaufman's Adolescent and Adult Intelligence Test, version 2 (KAIT-II) (Kaufman & Kaufman, 1993). Some difficulties were found as tests did not analyse the same aspects of '*g*'. However, the difference between the WISC-IV and the WAIS-III (Wechsler, 1997) requires further research to ensure these converge and individuals moving between children's and adult services do not become ineligible for support. In addition to this, the results for predictive validity differed. The predictive validity for adaptive skills were mixed; poor for memory and medical symptoms, and good for academic achievement.

Test re-test reliability figures published by the WAIS-IV indicate a good test re-test reliability in the short term although research of longer term reliability was required, in particular to monitor changes in Intelligence

Quotient (IQ) in the population as a whole. For internal reliability the results published by the WAIS-IV (Wechsler, 2008b) between subtest and Full Scale Intelligence Quotient (FSIQ) were positive. Also, results within subtests were good to excellent. However, independent research indicated that the consistency between subtests and FSIQ required improvement. There were also limitations to the evidence for inter-rater reliability with only one paper analyzing the WAIS-III independently of the WAIS technical manual and more research is needed to assess this (Wechsler, 2008b). Research also analysed the effect of variables such as nationality and gender on scores. However, again the evidence is limited.

In terms of developmental disabilities research indicates that a WAIS profile for someone with ASD is likely to be uneven and consideration needs to be made of problems that will affect rapport and sensory integration. Difficulties with scores at a lower level of IQ have also been identified with some instability in scores. A clinician using the WAIS-IV must therefore use clinical judgement when interpreting scores and be aware of personal characteristics such as anxiety that may affect results. This critique thus highlights areas where the WAIS-IV requires further research to understand the effect of confounding variables and improve interpretation and accuracy. It also highlights research that it would benefit a clinician working with people with ASD and/or ID to be aware of improving clinical practice, specifically the administration and interpretation of results.

Chapter 4

The research tested Weiner's (1985, 1993) Theory of Achievement, Motivation and Emotion as a framework for understanding the cognitive and emotional responses of unqualified nursing staff to CB exhibited by clients with ASD, and the effect these have on behaviours. Weiner's model appears to have a limited application in understanding staff interaction with CB behaviour and, as a consequence, has limited value in helping to understand how to reduce CB behaviour within these settings. Staff characteristics were also found to have a low level of correlation with intended behaviour. Comments were made about the validity and reliability of the Attributional Style Questionnaire (ASQ). Despite the need to develop the psychometric properties of the ASQ the test of construct validity indicated the questionnaire was testing different concepts, meaning the data collected was valuable.

The qualitative data suggested decision making was influenced by three sets of factors: client, staff and context. There was also a significant sub-theme of unqualified nursing staff being person-centred and professional. These were valuable findings and suggest future research should be focussed in these areas with the aim of seeking to explain what is occurring during decision making when staff respond to CB.

Chapter 5

The findings of the systematic review indicated that psychotherapeutic interventions affect and reduce CB in individuals with an ID. However there were inconsistencies between studies which require future research. The mode of delivery for interventions differed including the use of self-discovery, 1:1 work and group work as well as length of treatment differing. The definition of CB measured as an outcome also differed. Furthermore, the number of measures used and the structure of these differed, as well as the mode of data collection which was either self-report or observer rated, and measures were not always adapted for a population with ID. Other areas to consider when conducting research in this area are the number of participants as some samples were small reducing the power of the evidence. The effect of intrapersonal variables on outcomes requires further research, for example context, support offered, levels of IQ and gender. This need to improve the quality of evidence is consistent with the conclusion of Campbell et al., (2014) with this paper providing a detailed review of variables that require consideration in future research.

7. Research Exegesis

This section provides an overview of the academic thesis process.

7.1.Psychometric Critique.

The first section of the research thesis was the critique of the psychometric measure. The difficulty with choosing this topic was finding a way of considering this critically. The choice of the Wechsler Adult Intelligence Scale (WAIS) was perhaps not the best, as the assessment is complex but also needed to be considered due to its essential involvement in the diagnosis of a person with an ID, and it being a widely used assessment. ID is a diagnosis that is key to the thesis as a whole. From this review I found that the assessment has many robust elements but there were some overarching debates, for example about the nature of intelligence. I found that there were ways in which the assessment could be critiqued, which was not what I expected. For example, the Flynn effect where intelligence increases over time.

This means that even an assessment that has such a strong reputation and is supported by a range of research data can still be questioned. It was also useful to consider how administration could be affected by ASD characteristics. Thus there are both strengths and weaknesses to this and perhaps all psychometric measures. Taking this further into clinical practice it is wise to continue using a critical or evaluative approach to all assessments even when they are recommended and ask about the validity and reliability of the results gained. It may be

that the assessments used are the best available options despite the shortcomings.

7.2. Research Project

The factors that influenced the research project were both an interest in the topic, and the ability to collect the relevant data. A few research ideas had been mooted, but gaining the support of an organisation where data could be collected was not possible in all cases. Two organisations agreed to support data collection and supported the development of a feasible research project which enabled the research to be advanced. From this I learned that all elements need to be in place for a research project to go ahead. This also enabled me to gather data on a research area that influences patient care and rehabilitation. Unqualified nursing staff are a key part of the interpersonal environment that influences an individual with an ID and can support them to meet their personal goals or can hinder this. In a worst case scenario the relationship can be damaging to an individual with an ID. Therefore understanding this is important. The other elements were a good quality proposal and ethical approval. From observation during placements I noted that proposals could be made for funds to support research. Co-ordinating a research proposal therefore takes a lot of organising. A further lesson was the time needed to collect data from multiple sites. Due to the amount of data being collected this took several months. In the future this timescale needs to be factored into the proposal and research plan. Despite these difficulties I was able to reflect on the value of conducting research in

general but also conducting research within your clinical setting. Questions may occur to you about the work you are doing, the client group or to gain information about the views of the clients themselves and other professionals. To improve practice these questions may need to be investigated to inform what you as a clinician are doing but also to publish research and support the clinical work of others. Published research and papers presented at conferences can support the spread of knowledge and also draw together professionals who would otherwise remain isolated.

7.3. Case Study

The case study and systematic review were written later. The case study provided a useful overview of the assessment and treatment of someone with ASD and ID. This was pertinent, as ID and ASD were diagnoses that were included within the majority of the research thesis. The learning points from this were even the assessments claimed to be the best available still had some shortcomings, for example, applicable norms not being available, and assessments not being tested in the same context in which they were applied (secure context). When writing reports it may be beneficial to acknowledge this. I also learnt about the difficulties of treating individuals with a developmental difficulty. Individuals appeared to be difficult to treat due to the fixed nature of their issues. This matched observations of patients with developmental disabilities, that they either found new skills difficult to learn or they took a long time to learn skills. As a professional, resilience was required to help individuals make

progress over a long period of time. The case study also indicated that there are difficulties particular to someone with a dual diagnosis. The ID may have exacerbated the difficulties experienced by someone with ASD by making it difficult for them to intellectualise their problems. Equally, the difficulties experienced by someone with an ASD could be exaggerated by similar difficulties that could be attributed to an ID. Thus more than one difficulty or co-morbid issue can make adaptive functioning problematic and cause difficulties in improving skills.

7.4. Systematic Review

The final section to be written was the systematic review which appeared to be the easiest to complete in terms of my skills, and also was written in a relatively short time period of 6 weeks. The skills needed to complete this in such a short space of time had been developed during both the practice and research element of the doctorate. These skills included critical reasoning, taking a topic or subject and evaluating or examining it from an academic standpoint. I felt that this was supported by having written several documents to a doctoral standard, which helped me organise this final document and use a clear writing style to a publishable standard. I also learnt from completing the paper that there are ways that systematic reviews have been completed previously that could be transferred to my work. This demonstrated how current work could build on the techniques developed by others and further previous research.

7.5. Conclusions

This thesis examined topics that I have an interest in, and indicates my competencies as a scientist-practitioner. Overall, conducting tasks within the thesis has provided me with an opportunity to conduct academic research for the first time and learning from that experience to develop key academic skills and complete a number of different types of academic papers that are all publishable. This will support me to write proposals in the future, conduct and supervise research, and from this publish the research I conduct.

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Appendix 1 CEFA subtests

Subtests	Description of Test
Cambridge executive functioning assessment: executive function tests (CEFA-M)	
Cats and Dogs	Participants are asked to name pictures of a 'cat' and a 'dog'. They are then asked to say 'cat' when shown a picture of a dog, and vice versa. Points are gained for correct performance in the second phase of the test. *(Involves response inhibition and working memory for rule maintenance.)*
Spatial Reversal	A coin is hidden under one of two boxes. After the participant has learned to choose the correct box, the location is reversed. The reversal phase is scored. In order to score points the participant must detect the changed contingencies and respond accordingly. (*Involves set shifting across spatial location, response inhibition)*
Weigl Sorting Task	Participants first sort coloured shapes into piles 'that go together'. They are then asked to 'make the piles differently'. The shift phase is scored. Prompts are given, and points lost, if the participant is unable to find an alternative sort. *(Involves extra-dimensional set shifting, abstracting common principles.)*
Tower of London	The apparatus consists of three coloured rings on three pegs. The task is to move the rings one at a time to configure them to a pattern demonstrated by the tester. A series of problems is presented graded in difficulty. The task requires a sequence of steps to be planned in advance of the first move. *(Involves planning, working Memory and response inhibition.)*
Scrambled Boxes	A coin is hidden under each of three or six visually distinct boxes. Points are gained for locating the coins. After each coin is found all of the boxes are moved to different

	positions. *(Involves working memory and response inhibition.)*
Cambridge executive functioning assessment: memory tests (CEFA-M)	
Object memory	One of a set of objects, that increases up to a maximum of six, is covered by a box. Points are scored for naming the hidden object. *(Involves cued retrieval and working memory.)*
Prospective memory	About 20 min before the end of the session the tester hides a set of keys. Points are scored for reminding the tester of this, and where they are, when the session ends. *(Involves prospective memory – remembering to do something in the future)*
Memory for sentences	The task is to repeat sentences that increase in length. *(Involves verbal short-term memory)*

Appendix 2 Consent Form

CONSENT FORM FOR USING PATIENT INFORMATION FOR CASE WORK SUBMITTED TO A COURSE/TRAINING PROGRAMME
MENTAL HEALTH & NATIONAL LEARING DISABILITIES DIRECTORATE

Part A: Patient Consent

Staff name	
Patient name	
RC name	
Title of case	
Where case is to be submitted	
What case information is being used for	

Patient Consent

I_____ give permission for _____ to use information about me to write some work as part of their course.

I understand that the information they use will be made anonymous – this means my name will not be in it and no-one will be able to tell that the written information is about me.

I understand that the work will be handed in as part of an academic qualification/training.

I understand that _____'s teachers will need to read the work to say whether it is good enough.

I understand that I can choose to take back my permission to use this information at any time…

AND

…that if I decide not to take part now or later, it will not change the way that I am treated.

I would/would not like a copy of the completed work.

Date_____

Signature_____

Printed name_____

PART B: Student/Trainee declaration

The check list below must be completed and held on the student's file prior to any material being used for academic endeavour.

Check list for use of case material (student/trainee to complete)	
All information has been anonymised and the patient is not recognisable from the description given.	
Patient has capacity	
Patient has given their consent	
RC has given consent for material to be used	
I have made the purpose of the work explicit to the patient and the clinical team	
The consent has been discussed and is recorded in the patient/MDT notes	
I agree to attend a minimum of three MDT meetings where _____ is discussed to feed back my progress and work	
I agree to provide the team with a completed version of the case work	
I am aware of and have read the Trust policy on safe and secure handling of confidential information	

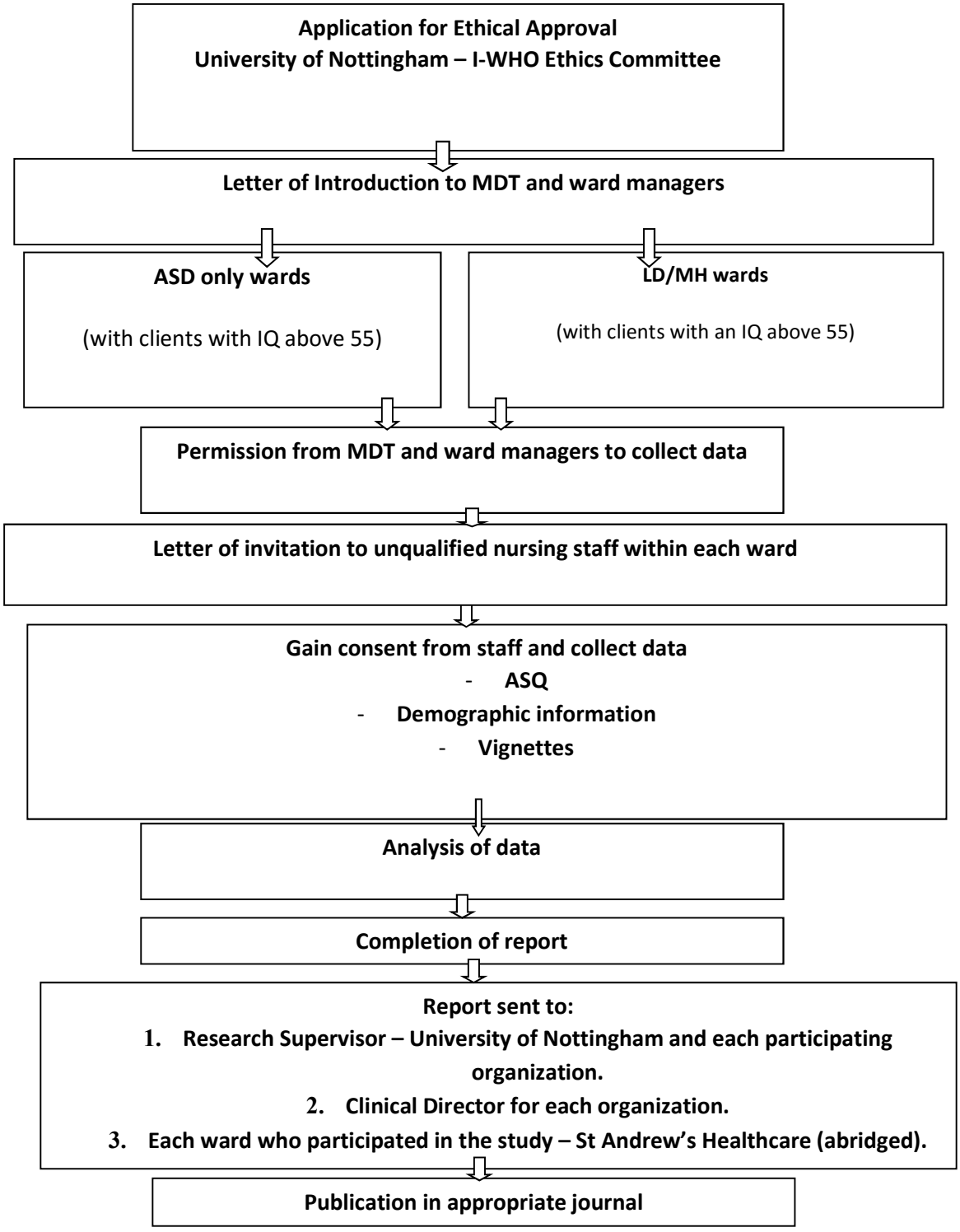
I _____ agree to adhere to all Mental Health & National Learning Disabilities Directorate guidance in relation to use of case material. I agree to provide the MDT with a copy of this work. I have completed the checklist above.

Date: _____

Signature: _____

Printed name:_____

Appendix 3 Protocol



Appendix 4 Questionnaire

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

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An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder.

The following questionnaire is split into four sections. The first section asks for some details about you. The second and third sections asks about your thoughts and reactions to challenging behavior. The fourth section gives you a scenario followed by some questions about what you think was happening in the scenario and what you would have done in that situation. If you have any questions, please do not hesitate to ask the researcher.

Section1: Demographic Information

1. How many days training have you received to help you understand and manage patients' challenging behaviour?

2. How long have you worked with patients with an Autism Spectrum Disorder (rounded up to the nearest year)?

3. What is your current age?

4. What is your gender?



5. How many hours do you usually work per week?



6. What is your highest qualification?

.....

.....

7. Are you a Care Worker or a Senior Care Worker?

.....

8. Do you work in (a) a service for patients with Autistic Spectrum Disorder only, or (b) a service for patients with a Learning Disability or mental health issues which include patients with Autistic Spectrum Disorder?

.....

Version 4 July 2013

Section 2: Thoughts about challenging behaviour and how you manage it when it happens

Please think about challenging behaviour that you have recently experienced from a client with Autistic Spectrum Disorder.

1. Please describe the challenging behaviour:-

2. Please write down the possible reasons for this behaviour:-

3. Do you think the individual is responsible for his or her behaviour? Please circle one number.

Not responsible at all	1	2	3	4	5	6	7	Fully responsible

4. Do you think the individual is in control of his or her behaviour? Please circle one number.

Not in control	1	2	3	4	5	6	7	Fully in control

5. How would this type of behaviour make you feel? Circle one number.

Not angry at all	1	2	3	4	5	6	7	Extremely angry
Not feeling pity	1	2	3	4	5	6	7	Extreme pity
Not feeling Sympathy	1	2	3	4	5	6	7	Extreme sympathy

Given your experience with the behaviour you described how much do you agree with the following statements?

6. All one can do for a person with this behaviour is keep them safe and look after their physical needs.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

7. There is little point in any interventions for a person who behaves like this.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

8. The challenging behaviour of people with ASD is usually so ingrained that the person will not be responsive to treatment or intervention.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

9. I can always find a positive solution to this type of behaviour.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

10. I am confident I could deal effectively with this type of behaviour.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

11. I can deal with this type of behaviour if I invest the necessary effort.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

12. When this type of behaviour happens I can usually think of something to do.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

13. I can remain calm when someone with ASD exhibits challenging behaviour.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

14. I can rely on my natural abilities when someone with ASD exhibits challenging behaviour.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

15. I can rely on my training when someone with ASD exhibits challenging behaviour.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Version 4 July 2013

Section 4: Scenario and follow up questions

Scenario 1 (to be given to participants in Groups 1 and 3)

You encounter a patient with an Autistic Spectrum Disorder in the corridor. He appears to be upset and is talking to himself. You ask him what's wrong and he slaps you around the face.

Scenario 2 (to be given to participants in Groups 2 and 4)

You encounter a patient with a learning disability in the corridor. He appears to be upset and is talking to himself. You ask him what's wrong and he slaps you around the face.

Version 3 May 2013

1. Was the patient in control of his actions? (Please circle Yes or No)

Yes **No**

2. Did you feel anger or pity for the patient? (Please circle Anger or Pity)

Anger **Pity**

3. Was the patient responsible for his behaviour? (Please circle Yes or No)

Yes **No**

4. Would you try to help the patient? (Please circle Yes or No)

Yes **No**

5. Would you leave the patient without intervention? (Please circle Yes or No)

Yes **No**

This is the end of the questionnaire. Thank you for taking the time to complete it.

Researcher: Stella Nugent, Trainee Forensic Psychologist
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JonTaylor@standrew.co.uk
Dr. Vincent Egan of The University of Nottingham
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Version 5 October 2013

Appendix 5 Questionnaire Section 3

Listed below are thoughts that staff may have when dealing with a person with an autistic spectrum disorder and challenging behaviour. Think about challenging behaviour that you have experienced from a client recently. Then, please put a tick in the box that shows how much you agree with each statement below.

	Disagree strongly	Disagree slightly	Unsure	Agree slightly	Agree strongly
1. **They are trying to wind me up**					
2. **They can't help themselves**					
3. **They are doing it deliberately**					
4. **They know what they are doing**					
5. **They have no control over their behaviour**					
6. **They could stop if they wanted**					
7. **They are trying to manipulate the situation**					
8. **They can think through their actions**					
9. **They don't mean to upset people**					
10. **They are in control of their behaviour**					
11. **They mean to make me feel bad**					
12. **They have chosen to behave in this way**					
13. **They are not to blame for what they do**					
14. **They know the best time to challenge**					
15. **They don't realise how it makes me feel**					

Version 3 May 2013

Appendix 6 Letter of Invitation to Ward Management



YANG Fujia Building
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An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder

FAO Ward Manager and Multi Disciplinary Team

We would like to invite you to take part in a research project which will be conducted across St Andrew's Hospital, Nottinghamshire.

The project is designed to examine the attributions and emotions of Healthcare Assistants towards patients with an Autistic Spectrum Disorder who exhibit challenging behaviour and the association between this and the responses of Healthcare Assistants to challenging behaviour. In addition, demographic information will be collected relating to each participant. This will help the researchers identify factors that lead to good working practices and potential training needs.

To help us complete the project we need to ask Healthcare Assistants to complete a questionnaire during working hours. We intend to collect data between April 2014 and June 2014. This should last no longer than an hour per participant including a short de-briefing session. One researcher will support participants and would need a quiet room, away from patients, to enable staff to focus on the questionnaire. The questionnaire will ask questions about staff characteristics, for example gender and years of experience. It will then ask questions about staff attitudes towards patients with an Autistic Spectrum Disorder who exhibit challenging behaviour. Finally, a scenario of challenging behaviour will be presented with follow up questions to capture staff responses to an incident of challenging behaviour.

Your support for this project would be invaluable, as it cannot be completed without your assistance. We hope you will consider taking part in this worthwhile project.

Stella Nugent (lwxsn2@nottingham.ac.uk)
Trainee Forensic Psychologist (Researcher)

This project is being supervised by:
Dr. Vincent Egan
University of Nottingham

Jonathan Taylor
Consultant Forensic Psychologist
St Andrew's, Nottinghamshire

Version 5 October 2013

Appendix 7 Letter of Invitation to Potential Participants

The University of Nottingham
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An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder

FAO Potential Participants

We are inviting you to take part in an exciting research project looking at the way staff work with patients with an Autistic Spectrum Disorder. The findings will help the researchers to know more about the relationships between staff attributions, emotions, attitudes, attributes and their approaches to working with this client group. This will help to identify factors that lead to better working practices beneficial to patient care.

To help us complete the project we need to ask care staff to complete a questionnaire. This should last no longer than an hour. We will be asking questions about staff characteristics, for example gender and years of experience. We will also ask questions about staff opinions of patients with an Autistic Spectrum Disorder and present participants with a scenario with follow up questions.

We hope you will take part in this study. If you wish to participate, please email the researcher: lwxsn2@nottingham.ac.uk.

Thank you for reading this letter of invitation.

Stella Nugent (lwxsn2@nottingham.ac.uk)
Trainee Forensic Psychologist (Researcher)

This project is being supervised by:
Dr. Vincent Egan
University of Nottingham

Jonathan Taylor
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Version 5 October 2013

Appendix 8 Information Sheet

YANG Fujia Building
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An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Participation is voluntary, there are no financial rewards for taking part. The company will not know what each person has said as the results are anonymised and there will be no repercussions from taking part.

Please take the time to read the following information carefully.

The study is running from April 2014 until April 2015. We plan to collect data on attitudes and emotions experienced by staff when patients exhibit challenging behaviours as well as responses made by staff. If you agree to take part, you will be asked to complete a questionnaire.

The questionnaire starts by asking about demographic information, for example age and gender. Questions are then asked about your thoughts about challenging behaviour and how you would manage this when it happens. Then a scenario will be given with follow up questions.

We are interested in the views of Healthcare Assistants as they are the members of staff who have the most contact with patients. We are collecting data from 123 care staff. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. After this you are still free to withdraw from the study at any time and

without giving a reason. If you do choose to withdraw from the study all data relating to you will be shredded and destroyed.

The questionnaire should take no longer than an hour to complete. The final results will help the company understand the attributions, emotions and attributes of care staff and how these contribute to their interactions with patients with an Autistic Spectrum Disorder. From this good practice can be identified, as well as support and training needs. Outside of the company this project will further an understanding of this academic topic and help other organisations to have a better understanding of the support and training needs of Healthcare Assistants.

All information collected will be kept confidential. Responses will be kept in a locked filing cabinet with each individual's responses being identified by a code rather than a name. The raw data will be kept as the property of the University of Nottingham and not released to St Andrew's Healthcare. Data generated by the study will be retained in accordance with the University's policy on academic integrity for seven years after the project is completed. It will then be destroyed. No individuals will be identifiable within the final report or when the results are published in a journal or presented at a conference. A report of the final results will be sent to your Ward Manager for all staff to read.

The research is being conducted as part of the professional Doctorate in Forensic Psychology run by the Institute of Work, Health and Organisations at the University of Nottingham. The project has been approved by the Research Ethics Committee at the University of Nottingham. The final report will be submitted to the course team at the University of Nottingham. A summary of the report will be sent to St Andrew's, Nottinghamshire as well as all wards taking part in this research. The report will also be submitted for publication in a peer reviewed journal.

If you have a concern about any aspect of this study, you should contact the researcher who will answer your questions (lwxsn2@nottingham.ac.uk). If you remain unhappy and wish to complain formally, you can do this by contacting Jonathan Taylor, Consultant Forensic Psychologist (JonTaylor@standrew.co.uk). An alternative contact for support is the free telephone counselling service provided company wide, (St Andrew's Wellbeing Service, 0800 019 3453). The project is also being supervised by the University of Nottingham, Institute of Work,

Health and Organisations. The contact for this organisation is vincent.egan@nottingham.ac.uk.

Thank you for taking the time to read the information sheet.

To participate in this project please complete and sign the consent form.

Stella Nugent

Version 5 October 2013

Appendix 9 Consent Form



YANG Fujia Building
Jubilee Campus
Wollaton Road
Nottingham
NG8 1BB

An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder

	Please Initial Box
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	
2. I understand that the data is being collected as part of a research project. It will not be used to affect my job role or employment status but may be used to understand the training needs of support workers.	
3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason.	
4. I understand that I am being asked to complete a questionnaire.	
5. I understand that all my personal details will be kept confidential and the data anonymised.	

6. I understand that information that makes me identifiable will not be included in any published report.	
7. I agree to take part in the above study.	

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Researcher	Date	Signature

Researcher: Stella Nugent, Trainee Forensic Psychologist
lwxsn2@nottingham.ac.uk
Supervised by: Jonathan Taylor, Consultant Forensic Psychologist
JonTaylor@standrew.co.uk
Dr. Vincent Egan of The University of Nottingham
vincent.egan@nottingham.ac.uk

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Appendix 10 De-briefing

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

YANG Fujia Building
Jubilee Campus

Wollaton Road
Nottingham
NG8 1BB

An Investigation of Staff Attributions, Emotions and Helping Behaviours Associated with Challenging Behaviours of Clients with an Autistic Spectrum Disorder.

Thank you for taking part in this research project.

The responses you have made to the questionnaire will be combined with the responses from all other participants to provide an overview of the way staff view the challenging behaviour exhibited by individuals with an Autistic Spectrum Disorder. The more detailed information you have provided about yourself, for example age and years of experience, will be used to identify a relationship between these characteristics and staff views of challenging behaviour. An example of this is differences in attitude towards patients if you have more experience in the job role or more training to interpret and manage challenging behaviour. The results from the research will be reported to the University of Nottingham by April 2015 as part of a Doctorate in Forensic Psychology with a shortened version of the report being sent to Company representatives in April 2015. This will help the company identify good practice and training and support needs. A copy of the report will also be sent to each participating ward and a peer reviewed journal. Please remember that you will not be identifiable within any reports or publications.

There are no plans to provide individual feedback, but when a report detailing the overall findings of the study is sent to each ward, the researcher's contact details will be included in case any participants wish to ask further questions.

This project was designed to cause the least likelihood of harm to participants. If you do feel distressed in any way please utilise the company wide counselling service, (St Andrew's Wellbeing Service, 0800 019 3453). If you have a concern about any aspect of this study, you

should speak to the researcher who will do her best to answer your questions (stella.nugent@nottingham.ac.uk). If you remain unhappy and wish to complain formally, you can do this by contacting (Jonathan Taylor, JonTaylor@standrew.co.uk).

Do you have any questions or comments you would like to make?

Thank you for your participation. This project could not be completed without your help.

Signed

Stella Nugent

Researcher: Stella Nugent, Trainee Forensic Psychologist
lwxsn2@nottingham.ac.uk
Supervised by: Jonathan Taylor, Consultant Forensic Psychologist
JonTaylor@standrew.co.uk
Dr. Vincent Egan of The University of Nottingham
Vincent.Egan@nottingham.ac.uk

Version 5 October 2013

Appendix 11 Qualitative Data

Theme 1 - Patient

- For one patient it would be one answer, for another. Person Centre (PC)
- It's so different, they're all individuals (patients). They've got different personalities and behave differently. PC
- Some have control and some don't. PC
- Some are responsible and some aren't. PC
- Depends what you're basing it on, how bad their ASD is.Diagnosis
- Some have control and some don't have as much control. PC
- Sometimes they are (in control) and sometimes they aren't. Frustration tolerance
- Some behaviours can be exhibited but the intervention can be different. Function
- It depends on the individual. PC
- It depends on the patient. PC
- Hard to say overall cos everyone's an individual. PC
- Depending on the situation and the person, sometimes they do and sometimes they don't. PC/Frustration tolerance
- Sometime in control and sometimes not. PC
- Some like things and some don't. PC
- One person with Autism is so different to another person with Autism. PC
- Both have similar traits but totally different to each other (working with people with ASD). Diagnosis/PC
- In control yes sometimes, no others. PC
- Doing it deliberately, sometimes it is and sometimes it isn't. Frustration tolerance
- Can control his behavior, not all of the time. Frustration tolerance
- In control to a point and then it's game over. Frustration tolerance
- Too generalized, not looking at a specific person/behavior. PC
- Hard to know when don't know why they're angry. Function
- To a certain degree they have control and when they've reached a certain point they find it difficult to reduce arousal. Frustration tolerance
- Bit generalized, it needs to be person specific.PC
- With autistics patients there's no black or white.PC
- That depends on the individual. PC

- It depends on their point of the spectrum. I've worked with people who are fully autistic and the only way they know how to get something is to act in a challenging way. Function/diagnosis
- Sometimes someone looks for boundaries and the challenging behavior makes staff provide these. Function
- Behaviours can change. PC
- Sometimes doing something to get your time and attention. Function
- It depends who you're talking about. PC
- It depends what they're diagnosed with. Diagnosis
- It depends on the person. PC
- There are different degrees of Autism that affect what people do. Diagnosis
- Basing it on a particular individual as when someone acts when in a particular mood can be different. PC
- Sometimes they can't help themselves but it can be deliberate. PC
- Depends on mood, what's angered him. Frustration tolerance
- It depends on the individual, everyone's different. PC
- It's difficult to separate the behavior of a boystrous young man to someone with an ASD. Diagnosis/PC
- It depends on mental capacity and where they are on the scale. Depends on the individual. High functioning can think things through, low functioning might not be able to think things through.Frustration tolerance

Person Centred	23
Function	5
Diagnosis	6
Frustration tolerance	8

Theme 2 - Staff

- If you know the patient. Ideally know the patient and something about his past, what to do and what not to do. Patient knowledge
- Important to get to know the patient. Patient knowledge
- Not knowing the background of the patient, could be an either or. Patient knowledge
- Knowing the service user. Patient knowledge
- It's hard to answer that as I don't know the patient. Patient knowledge
- I may feel anger but I don't act on it. Feel emotion/professional
- I might feel both anger and pity. Feel emotion
- I might not like them but I'm still here to do my job. professional

- Anger or pity, I don't feel either. No emotion
- A lot of it is knowing our patients, training can only tell you so much. Patient knowledge
- Don't get angry, just manage the behavior. No emotion/professional
- Training provide the theory but you have to develop your own practical skills. Developing skills within the context
- Wouldn't feel anger or pity as it's not a personal thing. No emotion/professional
- Worried about the effects of challenging behavior on other patients. Protector
- Neither anger or pity, water off a duck's back. No emotion/professional
- You can't leave someone without intervention as you're not doing your job properly. Professional
- In position interpretation of behaviours may not necessarily be accurate. Can only go on what we see. Heuristics
- Other patients need reassurance. Protector
- It doesn't always work. I need to be more firm that's my problem. Experience within the context
- It's not a question of anger or pity. No emotion
- It would go, surprise, bewilderment, anger. Emotion
- When you go on the ward you are in at the deep end and you learn as you go along. Developing skills in the context
- Learn something everyday from patients and staff. On the job. Develop skills within a context
- Everyone feels an element of anger but pity seems derogatory. Feel emotion
- Sympathy seems wrong but empathy seems more the emotion. Feel emotion
- It's not anger it's more draining. Feel emotion
- Consistency of responses is important. professional
- Initially the reaction would be anger, down to us to manage that. Emotion/professional
- All behavior can be challenged but it's about doing it in such a way so the patient doesn't feel attacked. Professional
- Knowing the individual. Knowledge of patient
- Knowing where they are on the spectrum. Knowledge of patient
- Could do more to try and understand, as well as look at physical needs. Knowledge of patient/professional role
- Being proactive and anticipating to stop things before they happen. Professional

- Not pity, feel sorry. Initial response anger because of being slapped. This is not a response to they guy. Feel emotion
- None of their behavior makes me feel angry. That's why they're here. No emotion
- Neither anger nor pity. No emotion
- Inside you're not calm but outside you need to look the part. No emotion/professional
- Using knowledge to talk self through situation. Professional
- Wouldn't use pity, but more towards that, empathy rather than pity. Emotion
- You learn most of what you know on the job, from other staff. Develop skills within the context

Feel emotion	10
No emotion	5
Professional	13
Protector	2
Develop skills in context	5
Knowledge of patient	9
Heuristics	1

Theme 3 - Context

- The person centred approach came in in the 90's. When I started in care we just sat them in a line and wiped their faces with the same flannel. Context altered over time
- As a team a positive solution can be found. Teamwork
- Anger or pity, tricky, for example if a patient found out their parents had cancer then you'd be a bit more lenient. Triggers
- It's what's going on around him that makes him do it. Triggers
- When on section 3 you can do more with challenging behavior, when on a CTO they can go anytime they want. Section
- It depends what's triggered the behavior. Triggers
- Don't know what's preceded the event. Triggers
- Having psychology on the ward would get to know the patient in situ. Teamwork
- Healthcare works are the people who know someone's triggers. The psychiatrist or psychologist need to involve them in discussions about patient care. Teamwork
- Depends what the situation is. Triggers
- Flatter organisations where the team works together and Healthcare Assistants have more of a voice within the decision making. Teamwork

- Handover – altering discourse, asking questions to encourage people to reflect on practice.
  Reflective practice – create forums for reflective practice, to give nursing staff opportunity t think through interaction with patients, functions of behaviours to create an internal dialogue and a dialogue between professional groups.
  Therapeutic communities – to build units as therapeutic communities to empower patients to feel confident to challenge the behavior of others whether they are staff or patients and to voice opinion.
  Theoretical understanding – To encourage an understanding of staff and patients as a system where the behavior of one affects the other, e.g. behavior of nursing staff can prompt or be the antecedent or challenging behavior.
  Induction – amount of information given in a short space of time too much. To give smaller amounts of information over a longer period of time. Support to work in a difficult context – shadowing, modelling, mentoring.
  Formal training – nursing staff to be trained in people management skills. Teamwork
- Focus on staff rather than patients, consider your own behavior and the impact this has on the patients. Transaction

Transaction	1
Context altered over time	1
Teamwork	5
Triggers	4
Section	1

Appendix 12 Inclusion/exclusion Criteria

Criteria for exclusion/inclusion	Yes	No
1.Did the study apply an intervention designed to reduce CB?		
2. Was a pre and post-test used to analyse changes in the level of CB?		
4. Was the sample population people with an LD/ID?		
5. Was the sample population adults?		
6. Is the intervention psychotherapeutic?		
7. Is the dropout rate higher than 50%?		
8. Did the study use participants?		

Appendix 13 Data Extraction Tool

1. Names and Dates of researchers		
2. Profile of sample	Numbers, setting, ID, age, gender.	
3. Further information on intervention	Type of intervention, group or 1:1, number of sessions.	
4. Measurement tools used		
5. Results.		
6. Did the intervention reduce challenging behaviour?	Yes	No

Appendix 14 Quality Assessment Tools

Case Control Studies

Initial Screening Criteria	Evidence Present 2	Partial evidence 1	No evidence 0
The study addressed a clearly focussed issue. Was the question focussed in terms of: • The population studied • The risk factors. • Whether the study tried to detect a beneficial or harmful effect?			
The authors used an appropriate method to answer the question. • Is a case control study an appropriate way of answering the question given the circumstances. • Did it address the study question?			
Further screening criteria			
The cases were recruited in an acceptable way. Selection bias that may invalidate the findings: • Are the cases defined precisely? • Are cases representative of defined population? • Was there an established reliable system for selecting the cases? • Was there a sufficient number of cases? • Was there a power calculation?			
The controls were selected in an acceptable way.			

Selection bias may compromise the generalisability of the findings: • Were the controls representative of a defined population? • Was there something special about the controls? • Was the non response high? Could non respondents be different in some way? • Are the groups matched or randomly selected? • Was there a sufficient numbers of controls?			
The exposure was accurately measured to minimise bias. Re: measurement, recall or classification bias. • Was the exposure clearly defined and accurately measured (time, number of sessions and format of intervention)? • Were subjective or objective measures used? • Have the measured been validated? • Were the measurement methods the same in both conditions? • Did the study incorporate blinding where feasible?			

The authors have taken account of confounding factors.
• Is there an analysis or discussions to see how this affects the results?
• Possible relevant confounding variables include:
  ○ Age
  ○ Gender			

○ Co-morbid factors ○ Medication ○ History of CB ○ Adaptive functioning ○ Training of therapists ○ Support offered to participants outside of therapy. ○ Levels of LD ○ Receptive vocabulary ○ Environment in which housed ○ Length of accommodation			
Information on the results:			
The results are precise • Size of p value. • Sze of the confidence intervals. • Have the authors considered all important variables? • What were the effects of participants refusing to participate evaluated?			
Do you believe the results? • Is there a big effect? • Could the result be down to chance, bias or a confounding variable? • Are the design and methods of this study sufficiently flaws to make the results unreliable?	Yes	[redacted]	No
The results can be applied to the local population. • The subjects covered in this study could be sufficiently different from your population to cause concern. • Your local setting is likely to			

differ much from that of the study? • Can you quantify the local benefits and harms?			
The results of this study fit with other available evidence. Consider all the available evidence from RCTs systematic reviews, cohort studies and case controlled studies.			

Randomised Control Trials

Initial Screening Criteria	Yes 2	Partial Evide 1	No 0
Did the study address a clearly focussed question?			
Was the assignment of patients to treatments randomised?			
Were all of the patients who entered the trial properly accounted for at its conclusion?			
Further screening criteria			
Were patients, health workers and study personnel 'blind' to treatment?			
Were the groups similar at the start of the trial?			
Aside from the experimental intervention were the groups treated equally?			
How large was the treatment effect?			
How precise was the estimate of the treatment effect?			
Can the results be applied in your local context? (or to the local population)			
Were all clinically important outcomes considered?			
Are the benefits worth the harms and costs?			

Appendix 15 Systematic Review Poster

See following page.

A systematic review of the effectiveness of psychotherapeutic interventions on challenging behaviour among adults with intellectual disabilities.

Authors: Stella Nugent (BSc, PGDip) and Dr. Shihning Chou (BSc, PhD)

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Background

Challenging Behaviour (CB) can threaten the life and physical safety of individuals who exhibit CB or those around them. There is an overlap between what is classed as CB in people with an Intellectual Disability (ID) and forensic behaviour which means CB needs to be reduced. There are a number of types of intervention aimed at this with many focussing on the context. Before this review there were no up to date systematic reviews of the effectiveness of psychotherapeutic interventions. If effective such interventions could be added to the support provided to an individual by a multi-disciplinary team.

Objectives

The aim was to analyse the effectiveness of psychotherapeutic interventions on the CB of adults with Intellectual Disabilities.

Methods

A systematic literature search was conducted using 5 databases, Psychinfo, Web of Science, Medline, Elsevier and ASSIA. A search of relevant journals was also conducted. 5,062 hits were found with 8 meeting the inclusion criteria. Papers were reviewed for quality although no papers were excluded on this basis. This highlighted issues in the quality of evidence. The effectiveness of each intervention was assessed by the reduction in CB between pre and post treatment assessments.

Results

The types of intervention reviewed were Cognitive Behavioural Therapy (CBT), Soles of the Feet Meditation (SoF) and Solution Focussed Brief Therapy (SFBT).

Authors Names	Mode of Intervention	Type of Intervention	Effectiveness of Intervention	Quality score
Lindsey et al., (2003)	Group	CBT	Reduction in CB.	13/20
Burns et al., (2003)	Group	CBT	Reduction in CB for 1 participants and no reduction for 2 participants.	11/20
Hagiliassis et al., (2005)	Group	CBT	Reduction in CB.	18/20
Taylor et al., (2005)	Group	CBT	Reduction in CB.	17/22
Singh et al., (2008)	Individual	SoF	Reduction in CB.	12/20
Rose (2010)	Group	CBT	Reduction in CB.	18/22
Willner et al., (2013)	Group	CBT	No reduction using one measure and reduction in CB using a second measure.	15/22
Roeden et al., (2014)	Individual	SFBT	Reduction in CB.	18/20

Conclusion

Psychotherapeutic interventions are effective at reducing CB in people with an ID. However, the effect may be modified by length of treatment, the context including the type of support offered, intrapersonal variables such as IQ and whether the treatment includes one to one support. The empirical evidence requires further research considering methodological issues, the consistency of outcome measures and the types of CB used to measure change.