

Research Portfolio Submitted in Part Fulfilment of the requirements for the Degree of Doctorate in Clinical Psychology (DClinPsych)

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Abstracts

Critical Review of the Literature (CRL)

Aims. To review systematically the psychometric properties of instruments used to assess mothers' thoughts and feelings towards their unborn baby.

Background. A number of antenatal constructs have been used to assess mothers' thoughts and feelings towards their unborn baby, including reflective functioning, mind-mindedness, representation and foetal attachment. Research shows these constructs predict parent-infant interaction and later infant adjustment. There is currently, however, no existing review comparing the quality and accessibility of instruments across these four constructs to identify women in need of additional support during pregnancy.

Design. A systematic literature review was undertaken to synthesise what is known about the psychometric properties of measures that report on expectant mothers' thoughts and feelings about their unborn baby. Searches of six databases were conducted. English articles were selected based on inclusion and exclusion criteria. The QATSDD (Sirriyeh, Lawton, Gardner, & Armitage, 2012) checklist was used to assess study quality.

Results. Of 669 studies identified, 28 met the inclusion criteria. Thirteen different instruments were identified for psychometric evaluation. Reported reliability and validity varied significantly across instruments, as well as availability for research and/or clinical use.

Conclusion. Suggestions for research and clinical practice include further evaluation of the psychometric properties of screening tools, particularly for brief self-report measures of antenatal reflective functioning, use of additional assessment measures to scaffold reflexivity in expectant mothers, and the development of clinical policies and procedures to ensure clear pathways of care are available for women in need of further support.

Key words. *Expectant mothers, bonding, representation, mind-mindedness, reflective functioning*

Service Improvement Project (SIP)

Background. The COVID-19 pandemic necessitated that mental health services make the rapid transition to remotely-delivered telehealth assessment, support and intervention. Whilst formal guidance on how to approach this task with neurotypical populations has been developed, there is no existing framework on how to adapt telehealth to effectively meet the needs of young people with neurodevelopmental conditions.

Aims. The following study aimed to assimilate existing guidance on telehealth practice with clinicians' experience and expertise within a CAMHS NDC Pathway. The objective is to develop a working guidance document that offers a framework for best practice in remote service delivery, as well as reviewing organisational features of the service which have supported this transition.

Design. A mixed methods design was undertaken using a PDSA cycle to 1) review existing literature and guidance frameworks on telehealth, 2) conduct in-depth semi structured interviews with clinicians and managerial staff within the NDC Pathway, 3) develop a guidance document for online service delivery to children and young people with NDCs, 4) receive feedback from the service stakeholders, developing a set of recommendations for continued service improvement.

Results. An NDC-specific framework was developed to capture specialist skills and techniques needed for delivery of remote assessment and intervention within the service. Exploration of issues related to clinical operations reflected themes around the importance of flexible clinical protocol, attendance of consultations, risk management and accessibility. A review of organisational factors in the adjustment to remote working highlighted the democratic and iterative process of change, based on collaboration and feedback.

Key words. *Neurodevelopmental conditions, Autism, ADHD, remote working, children and young people*

Main Research Project (MRP)

Background. Mentalization, operationalized as the overlapping constructs of reflective functioning and theory of mind (ToM), has been separately shown to be impaired in individuals with Autism Spectrum Conditions and Emotionally Unstable Personality Disorder (EUPD). Meanwhile, reports suggest that similarities in the functional presentations can result in misdiagnosis of women with Autism as EUPD. The present study builds on previous research investigating each clinical group separately to compare similarities and differences in mentalizing profiles.

Methods. This study used a within-subjects cross-sectional design with data collected at a single time-point. Participants (N=21 Autism, N=21 EUPD, N=23 community controls) completed the RMET, RFQ-54 and CORE-10 to measure theory of mind, reflective functioning and psychological distress respectively.

Results. In terms of RFQ subscales of hypermentalizing and hypomentalizing, both clinical groups showed significantly elevated levels compared to controls but did not differ from each other. RMET scores showed the same pattern. Psychological distress was associated with impairments in reflective functioning in both clinical groups. The ToM measure was not significantly associated with distress for either group.

Conclusions. The current findings indicate comparable profiles of mentalizing deficits in both clinical groups. Results underscore reported difficulties in distinguishing the two groups at a diagnostic level. Suggestions are made for further investigations to evidence the pathways underpinning mentalizing profiles in either group, including possible mechanisms of intolerance of uncertainty and epistemic trust.

Key words: *Autism, Emotionally Unstable Personality Disorder, social cognition, reflective functioning, mentalization, theory of mind*

CRL: Supporting the relationship between mother and unborn baby: what tools should be used to identify women in need of additional support in pregnancy?

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Proposed journal: This report is intended for submission to *Infant Mental Health Journal* and
has been written and formatted accordingly (see Appendix). This journal has been chosen as it is
a perinatal journal and focuses on supporting parent-infant relationships.

Aims. To review systematically the psychometric properties of instruments used to assess mothers' thoughts and feelings towards their unborn baby.

Background. A number of antenatal constructs have been used to assess mothers' thoughts and feelings towards their unborn baby, including reflective functioning, mind-mindedness, representation and foetal attachment. Research shows these constructs predict parent-infant interaction and later infant adjustment. There is currently, however, no existing review comparing the quality and accessibility of instruments across these four constructs to identify women in need of additional support during pregnancy.

Design. A systematic literature review was undertaken to synthesise what is known about the psychometric properties of measures that report on expectant mothers' thoughts and feelings about their unborn baby. Searches of six databases were conducted. English articles were selected based on inclusion and exclusion criteria. The QATSDD (Sirriyeh, Lawton, Gardner, & Armitage, 2012) checklist was used to assess study quality.

Results. Of 669 studies identified, 28 met the inclusion criteria. Thirteen different instruments were identified for psychometric evaluation. Reported reliability and validity varied significantly across instruments, as well as availability for research and/or clinical use.

Conclusion. Suggestions for research and clinical practice include further evaluation of the psychometric properties of screening tools, particularly for brief self-report measures of antenatal reflective functioning, use of additional assessment measures to scaffold reflexivity in expectant mothers, and the development of clinical policies and procedures to ensure clear pathways of care are available for women in need of further support.

Key words. *Expectant mothers, bonding, representation, mind-mindedness, reflective functioning*

Introduction

Research into the maternal-foetal relationship (MFR) - expectant mothers' thoughts and feelings about their unborn baby - began four decades ago with investigations into the quality of the maternal bond with the unborn baby as experienced in pregnancy– ('maternal-foetal attachment', ([MFA], Cranley, 1981)). Numerous other aspects of the maternal-foetal relationship have since been identified – 'maternal-foetal representation', 'maternal reflective functioning' and 'maternal mind-mindedness' - which focus at a more cognitive level on how the mother's conscious and unconscious processes influence her thinking about her role as a mother and the relationship with her unborn baby.

The development of instruments measuring these four constructs has established their role as mediators of psychosocial risk factors (Lannert, Levendosky & Bogat, 2013; Malone et al., 2010; Smaling et al 2016), caregiving behaviours (Foley & Hughes, 2018) and later infant outcomes (Branjerdpoom et al., 2017; Cataudella et al., 2016; Le Bas et al., 2019; Zeegers et al., 2017). Several reviews have reported on properties and associated outcomes of instruments assessing maternal-foetal attachment (e.g. Beck, 1999; Perrelli et al., 2014; Van Den Bergh et al., 2009) and maternal representation, as measured by the Working Model of the Child Interview (e.g. Vreeswijk et al., 2012). As yet, no review has evaluated and compared instruments' psychometric properties and usability across all four theoretical constructs linked to the MFR. This review aims to address this gap in the literature by summarising the psychometric properties of instruments used to measure these constructs and making recommendations regarding the suitability of each tool for use in clinical practice.

How are constructs relating to the maternal-foetal relationship defined?

Four constructs are proposed to describe aspects of the maternal-foetal relationship (Table 1). These include the way expectant mothers think about and bond with their unborn

infant, (e.g. maternal representation and maternal-foetal attachment), as well as parental mentalization constructs (e.g. mind-mindedness and reflective functioning).

Table 1. Definitions associated with each of the four constructs

Prenatal Construct	Definitions
Maternal representation	Maternal representation, drawn from Bowlby's concept of the internal working model, refers to the way a mother thinks about and behaves towards her unborn baby. Maternal representation is situated in the mother's own experiences of caregiving, the expectations she has for herself as a mother and her baby, and the meaning attributed to becoming a parent. Responses are categorised into three main typologies that include 'balanced' (coherent, richly elaborated and warm narratives), 'disengaged' (aloof, minimising and sparse narratives) and 'distorted' (disorganised and high-affect narratives, potentially showing role confusion).
Maternal-foetal attachment	Maternal-foetal attachment refers to the mother's sense of emotional closeness or bond towards her unborn baby, as demonstrated by her thoughts, feelings and behaviours. It differs from the search for comfort that comes with the activation of the attachment system, and instead indicates a desire to protect the unborn baby. It is seen as an early activation of the parental caregiving system.
Maternal reflective functioning	Reflective functioning is the operationalised metric of mentalization, requiring an understanding of observable behaviour from the intentional stance. It refers to the reflexive abilities of the parent to perceive and interpret their own and their unborn baby's behaviour in the context of existing or future mental states, such as feelings, wishes, goals and desires.
Maternal mind-mindedness	Mind-mindedness refers to the tendency to view the unborn infant as an individual with a separate mind, rather than merely an entity with needs that must be satisfied. As with reflective functioning, it involves the attribution of intentional states to behaviour, with the addition that these must be spontaneous (aka unprompted) statements. This is seen to be indicative of a natural curiosity about the (future) mind of the unborn baby.

Antenatal maternal representation describes the qualities with which a mother-to-be thinks about her unborn infant, herself as a mother and her experience of pregnancy based on her own internal representations (Rosenblum, Dayton, & Muzik, 2009). These are templates, internalised from her own early relationships, that guide expectations and behaviours in later relationships (Bowlby, 1969). Maternal-foetal attachment (MFA) refers to the emotional bond the mother feels towards her unborn baby (Bowlby, 1982; Cranley, 1981; Condon & Corkindale, 1997). While traditional definitions of attachment describe the relational strategies adopted at times of stress, MFA refers to the quality of caregiving directed towards the unborn infant (Le

Bas et al., 2019). Condon (1993) proposes a model for conceptualising the presence and quality of maternal-foetal attachment, highlighting expectant-mothers' desire to 'get to know', protect and take care of their unborn child.

Reflective functioning is the measure of an individual's capacity to mentalize, that is, "to perceive and interpret human behaviours in terms of intentional mental states such as feelings, wishes, goals or desires" (Fonagy et al., 2002; Fonagy et al., 1991; Fonagy et al., 1995). Mentalization allows for empathic representations of 'oneself from the outside and others from the inside' (Sharp & Fonagy, 2008). Reflective functioning has a particular bearing on parent-infant relationships, driving parents' curiosity to understand, anticipate, empathise and respond to their child's needs (Slade et al., 2005). Low levels of parental reflective functioning are demonstrated in an unawareness, inaccuracy or lack of comprehension of the internal state of the infant (Fonagy et al., 2016; Meins et al., 2002; Slade, 2005). Mind-mindedness (Meins, 1997, 1998) refers to the tendency for a caregiver to view their unborn baby as an individual with a capacity for a mind, "rather than merely as a creature with needs that must be satisfied" (Meins et al., 2001, p. 638). It requires a spontaneous focus on mental states or attributes when describing their infant (Meins et al., 1998; Meins et al., 2012). Whilst reflective functioning is assessed through invitations for the expectant parent to share active reflections, measurement of mind-mindedness is based on caregivers' spontaneous comments regarding their infant's current or future mental states (McMahon & Bernier, 2017).

Why assess the maternal-foetal relationship?

Pregnancy is a transitional period, during which the mother's representations of herself and others, internalised from early experience, activate and organise expectations of her unborn child and herself as mother-to-be (e.g. Ammaniti et al 1992; Cohen & Slade, 1999; Stern 1995).

Longitudinal research has found correspondence between expectant mothers' representations of their own childhood attachment experiences and representations of their baby/child (e.g. Fonagy et al., 1993; Madigan et al., 2015). The relationship between the mothers' attachment representations and their infants' attachment outcomes at eleven months old is mediated by the quality of bond a mother has to her unborn infant (Madigan et al., 2015). The transmission of attachment style from mother to infant has significance as early attachment relationships influence a range of child (e.g. Ranson & Urichuk, 2008; Verhage et al., 2016; Waters et al., 2000) and adult outcomes (e.g. Puig et al., 2013; Sroufe, 2005; Sroufe, Coffino & Carlson, 2010).

Previous research demonstrates that the quality of the maternal-foetal relationship (MFR) predicts multiple infant outcomes, including perceptions about infant temperament, attachment security, adaptive behaviour and milestone attainment (Branjerdorn et al., 2017; Le Bas et al., 2019). The relationship between the quality of MFR and later infant attachment security is particularly well-demonstrated (e.g. Atkinson et al., 2009; Benoit, Parker, & Zeanah, 1997; Cataudella et al., 2016; Crawford & Benoit, 2009; Huth-Bocks et al., 2011; Le Bas et al., 2019; Zeanah et al., 1994). Research shows that the MFR predicts parent-infant interaction quality (e.g. Crawford & Benoit, 2009; Foley & Hughes, 2018; Korja et al., 2010; Siddiqui & Hägglöf, 2000), which itself predicts infant attachment security (Bretherton et al. 1989; De Wolff & van IJzendoorn 1997; Koren-Kariem et al., 2002). A recent meta-analysis (Foley & Hughes, 2018) investigating concordance between antenatal parental representations and later outcomes demonstrates a moderate association between antenatal relationships (including measures of parental representation and foetal attachment) and postnatal parent-infant interaction (measured by constructs such as parental sensitivity). The strength of this relationship was consistent across

different samples, including combined risk categories of low socioeconomic status and clinical risk.

Recent research has investigated other constructs related to the maternal-foetal relationship, namely reflective functioning and mind-mindedness (e.g. Graf, 2000; Ueng-McHale, 2009; Perry et al., 2013). For example, Smaling and colleagues (2016) found that better antenatal reflective functioning was associated with more positive maternal behaviour during interactive tasks at six months post-birth. Fonagy and colleagues (2002) found that higher reflective functioning scores postnatally predict greater social competence and lower rates of social withdrawal in children. Likewise, parents demonstrating greater mind-mindedness when predicting the characteristics of their unborn infant were more likely to comment appropriately and spontaneously on their infants' internal states during interactions after birth (Arnott & Meins, 2005) and show better quality parent-infant interactions (Arnott & Meins, 2007). Systematic review evidence from a range of postnatal timepoints demonstrates a positive relationship between mind-mindedness and child developmental outcomes (McMahon & Bernier, 2017).

Studies have also demonstrated that maternal mentalization can predict infant-parent attachment quality, which in addition to parental sensitivity has been suggested as a mechanism to explain the intergenerational transmission of attachment security (Oppenheim & Koren-Karie, 2002; Slade et al., 2005; Zeeger et al., 2017). A recent study on maternal representation found correspondence between mothers' classifications on the WMCI in pregnancy and Adult Attachment Interview (AAI). Follow-up mediation analyses showed that the WMCI accounted for the association between AAI and infant attachment (Madigan et al., 2015). Given that this process between mother and baby begins antenatally, there is a rationale for intervention in pregnancy to mitigate risks to the parent-infant relationship after birth.

What instruments measure the maternal-foetal relationship?

To date, studies investigating the MFR have used either self-report questionnaires to record expectant mothers' thoughts and feelings about their unborn baby, or interview-based instruments to draw out mothers' representations and reflexive capacities, which are then coded. Recent research comparing interview-measures and questionnaire-based tools found no evidence to suggest greater predictive validity of either type of instrument for postnatal parent-infant interaction quality (Foley & Hughes, 2018). To the authors' knowledge, this has not yet been investigated for mentalization constructs.

Maternal representation

Standardised interviews assess both cognitive and affective features of maternal representation through categorising narrative patterns (Zeanah, 2000). Examples of these include: the Working Model of the Child Interview (WMCI; Zeanah, Benoit & Barton, 1986), administered during or after pregnancy; the Interview of Maternal Representations During Pregnancy (IRMAG; Ammaniti et al., 1992; Ammaniti, Tambelli & Peucchini, 1999); the Pregnancy Interview (PI; Slade et al., 2002, 2005) and the Pregnancy Interview Revised (PI-R; Smaling et al., 2016). These semi-structured interviews explore several domains assessing the mother's capacity to consider, anticipate and formulate appropriate responses to the infant's future needs. Self-report questionnaire methods can be used to measure representation antenatally and postnatally (e.g. Child Concept Questionnaire; Cloger-Tippelt, 1983).

Maternal-foetal attachment (MFA)

MFA has been most widely measured using three different tools, developed in sequence to build upon the included constructs of the other: 1) the Maternal-Fetal Attachment Scale

(MFAS; Cranley, 1981) primarily measures affiliative behaviours, 2) the Prenatal Attachment Inventory (PAI; Muller, 1993) concentrates more on the emotional relationship to the foetus, whilst 3) the Maternal Antenatal Attachment Scale (MAAS; Condon 1993) captures both the ‘quality’ (e.g. closeness/distance; tenderness/irritation; joyful/unpleasant) and the ‘intensity’ of the relationship to the unborn baby (e.g. talking to the baby; dreaming about or interacting with him/her).

Reflective functioning and mind-mindedness

Antenatal reflective function can be investigated using semi-structured interviews, coded with either the Reflective Functioning Scale (Fonagy et al. 1998) or the Reflective Functioning Scoring Manual (Slade et al., 2005). These interviews elicit representations of attachment relationships and include the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), the Pregnancy Interview (PI-R, Slade et al., 1987), and the Parent Development Interview (PDI-R; Slade et al., 2003). The latter two are primarily used during the third trimester of pregnancy and seek to obtain the reflective quality of expectant parents’ representations of themselves and their unborn baby. Furthermore, Rosenblum and colleagues (2008) have developed a reflective function scale for use with the Working Model of the Child Interview (Zeanah & Benoit, 1995). Antenatal mind-mindedness has not been well investigated, but responses to the ‘Describe your child’ question can be coded for spontaneous mental state references (Arnott & Meins, 2008).

What is already known about instruments assessing the maternal-foetal relationship?

Recent reviews have highlighted a lack of consensus around definitions of constructs related to the maternal-foetal relationship, as well as heterogeneity across instruments (Cataudella et al., 2016; McNamara et al., 2019). This may have implications for the consistency of research findings and applicability of assessment tools to clinical practice. Three systematic

reviews have evaluated the psychometric properties of instruments used to measure maternal-foetal attachment. Perrelli et al., (2014) reported on four instruments, finding superior construct and criterion validity for the PAI, in comparison to the MAAS, the MFAS and a Portuguese-language questionnaire (Maternal Adjustment and Maternal Attitudes [MAMA]; Figueiredo et al, 2009). Van den Bergh & Simons (2009) reviewed the psychometric properties of the MFAS, MAAS, and PAI, as part of a broader review investigating the associations between the maternal-foetal relationship, postnatal parent-infant interaction quality and maternal sensitivity. The review reports on the robustness of each instrument and recommends that their psychometric properties be studied in larger and more varied samples, particularly in populations with cumulative risk factors for antenatal bonding. Most recently, Wittowski et al., (2020) reviewed perinatal instruments assessing the quality of the maternal-foetal bond, identifying five antenatal measures. Findings identify the PAI as the most psychometrically robust antenatal measure, whilst the authors note the MFAS as representing the highest readability score.

In terms of reviews of measures representing other constructs related to the MFR, Vreeswijk and colleagues (2012) systematically review evidence on maternal representation as measured by the Working Model of the Child Interview (WMCI), including its adaptation and application antenatally (Benoit, Parker, & Zeanah, 1997). However, this review describes the distribution of representations across populations and does not report specifically on psychometric properties. Meanwhile, Katznelson (2013) conducted a review of the evidence for the relationship between reflective functioning (including prenatal reflective functioning, assessed with the Pregnancy Interview) and postnatal outcomes relating to the quality of the parent-infant relationship (e.g. Pajulo et al., 2012); similarly, this review does not report on psychometric properties.

Thus, work has yet to be done to synthesise what is known about the psychometric properties of instruments measuring maternal representation, reflective functioning and mind-mindedness, alongside available information on measures assessing maternal foetal-attachment. Further, no review has reported on the feasibility of these tools for clinical use and provided recommendations for their use in clinical practice, which would facilitate the selection of measures to identify mothers in need of support in the perinatal period.

Summary and aims

Several related antenatal constructs including mind-mindedness, reflective functioning, maternal representation and maternal-foetal attachment are predictive of both parent-infant interaction outcomes and infant developmental outcomes. Each construct is measured using both questionnaires and interviews. The conceptual complexity and variety of methodological issues inherent in the research raises questions regarding which tools are most reliable and valid, as well as having most clinical utility, in terms of identifying expectant mothers in need of support.

This review therefore seeks to identify both self-report and interview-based instruments that would be feasible, reliable and valid for use in clinical settings to evaluate the quality of the MFR. Notably, recent updates to measures (e.g. brief report of reflective functioning) may pose advantages in usability and feasibility but potentially at the expense of predictive validity. This systematic review aims to provide information that will inform clinicians' choice when selecting an instrument by providing information on feasible, reliable and valid tools to screen for the quality of the MFR. To this end, the research questions are:

- 1) Which instruments that are used to measure expectant mothers' thoughts and feelings about their unborn baby have data available regarding their psychometric properties?

- 2) How valid and reliable are the above tools, and which have most clinical utility in identifying women in need of additional support during pregnancy?
- 3) Based on the above evidence, which instruments(s) can be recommended to measure expectant mothers' thoughts and feelings about their unborn baby?

Methods

The PRISMA statement informed the method and reporting of this review (Liberati et al. 2009).

This includes a 27-item checklist of elements considered necessary for transparency when conducting and reporting systematic reviews (Appendix B).

Eligibility criteria

Published research articles reporting the psychometric properties of instruments measuring the MFR in expectant mothers were considered for review. Studies selected for review focused at least one of the following four constructs: 1) maternal representation 2) maternal-foetal attachment/bonding and 3) maternal mind-mindedness, 4) maternal reflective functioning.

The publication date range was from 1995 to the present day, as literature included in the current review, reporting on maternal foetal-attachment, has captured relevant data from studies preceding this date, whilst measures (including revisions of measures) reporting on reflective functioning, representation and mind-mindedness were developed and studied in populations of expectant mothers only after 1995. A secondary consideration for publication date range, relating to feasibility, required the selection of a focused pool of papers to ensure high quality appraisal, data extraction, and synthesis. In terms of other inclusion criteria, papers had to be published in English. Papers reporting on the psychometric properties of non-English versions of self-report tools were excluded. Conference abstracts, student dissertations and editorials were also excluded.

Information sources

A systematic literature search was conducted using six electronic databases: Medline, PsychINFO, CINAHL, Scopus, EMCARE and PubMed. Database searches were conducted on

the 31 March 2020 and updated 31 March 2021, identifying one further paper meeting the inclusion criteria. Search strategies used both article titles and abstracts and comprised all journal articles published up to this date. The database searches were performed by one author (BIS) and accessed from the library of the University of Oxford. The search terms, used across each database, included:

antenatal OR pregnan* OR prenatal OR "expectant mother*" AND "reflective function*" OR representation OR "f*etal attachment" OR "f*etal bond*" OR "mind-mindedness" OR "parent development interview" OR "mother-f*etus relationship" AND "working model of the child interview" OR "pregnancy interview" OR "interview of maternal representation*" OR "child concept questionnaire" OR "maternal antenatal attachment scale" OR "prenatal marschak interaction method*" OR "prenatal attachment inventory" OR "prenatal parental reflective functioning questionnaire" OR "PDI" OR "PAI" OR "WMCI" OR "MFAS" OR "MAAS" OR "PAAS" OR "CCQ" OR "IRMAG*" AND psychometric* OR reliability OR validity OR consistency

There was a paucity of results for interview-based measures, which prompted a broader search with terms related to the key instruments used within populations of expectant mothers. These search terms were:

pregnan* OR "expectant mother*" AND "working model of the child interview" OR "pregnancy interview" OR "parent development interview" OR "interview of maternal representation*" OR "prenatal marschak interaction method"

The reference lists of identified review studies (N=5) were hand-searched, yielding a further seven eligible papers.

Study selection

Abstracts were screened by two independent raters to determine if: a) the study involved a measure of representation, foetal bonding, mind-mindedness or reflective functioning, b) the

measure assessed these constructs in expectant mothers and c) the study reported on psychometric data of the measure. Abstracts that did not meet any one of the above criteria were excluded. The agreement for screening of abstracts was 95% (Cohen's $\kappa = .83$). Conflicts in ratings were then resolved between the raters, to ensure that studies met all three eligibility criteria before proceeding to full text extraction. One author then screened the full texts against the eligibility criteria.

Data extraction and synthesis

A data extraction form was devised to capture the following parameters: 1. Psychometric properties: theoretical framework, reliability, validity, sample characteristics, and 2. feasibility of use in a routine clinic setting: length of time of administration, number of items, availability and recommendations for research and clinical use. Where information was missing, the first author contacted study authors directly. Data extraction was undertaken by a second rater on N=9 papers, yielding a data replication rate of 89% for sample characteristics (Cohen's $\kappa = .40$) and 96% for psychometric properties (Cohen's $\kappa = .73$). Discrepancies were resolved by discussion to reach consensus. This was an integrative review; results are presented in table format, along with a synthesis of and interpretation of findings in relation to existing literature.

Methodological quality appraisal

The QATSDD (Sirriyeh, Lawton, Gardner, & Armitage, 2012) was used to assess the methodological quality of the studies reviewed. This is a validated 16-item quality assessment instrument shown to have good validity and reliability ($k = 71.5\%$) (Sirriyeh et al., 2012). It assesses a range of study designs, evaluating 14 domains relating to methodological quality. All criteria were assessed by one researcher [BIS]. Twelve papers were double-coded for quality by

a second rater. Discrepancies (25%; Cohen's $\kappa = .43$) were discussed and resolved to full agreement.

Results

Figure 1 shows the process by which studies were identified. A total of 28 studies featuring thirteen tools met the inclusion criteria. Five focused on antenatal maternal-foetal attachment/bonding, three on antenatal maternal representation, three on antenatal maternal reflective functioning and one on mind-mindedness.

The sample characteristics of the studies are presented in Table 3, and information on results, including psychometric information across instruments and feasibility of usage is presented in Table 4. See Appendix D for definitions of psychometric terms.

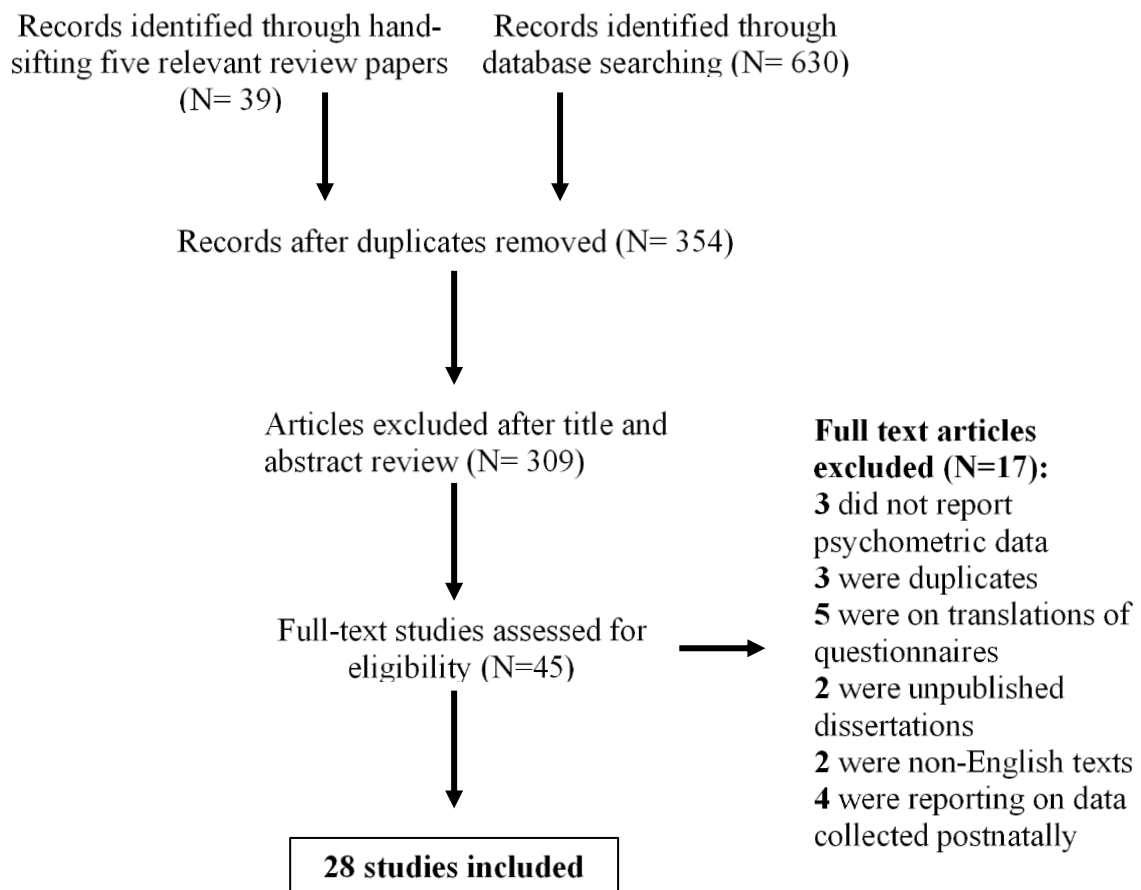


Figure 1. *PRISMA flow chart indicating study selection process*

Table 2. *Quality of study and characteristics of sample for instruments assessing aspects of the maternal foetal relationship*

Sample Characteristics											
	Tool	Citation	Study quality	N	Country	Race/ethnicity	Clinical/risk status	Age in years	Marital status	Gestation (weeks)	Employment and education
Maternal representation	Interview of Maternal Representations (IRMAG-R; Ammaniti & Tambelli, 2010).	Flykt et al., (2012)	38/42	101	Finland	Not reported	51 drug-misusing, 50 community controls	Not reported	Not reported	28 to 40 weeks	Not reported
		Ammaniti, Tambelli & Odoriso, (2013)	33/42	666	Italy	Not reported	411 without risk factors, 255 with psychosocial and depressive risk factors	M=31.6; (SD=4.17) ; 23 to 43 years	Not reported	26 weeks to 32 weeks	Middle social class as assessed by level of education and job status
		Tambelli, Trentini & Dentale (2020)	36/42	50		Not reported	Community sample	M= 33.88 (SD = 4.58)	All recruited part of primiparous couple	28 to 36 weeks	Not reported
	Working Model of the Child Interview (WMCI; antenatal application first reported in Benoit, Parker, & Zeanah, 1997, based on Zeanah et al., 1993)	Dayton et al. (2010)	33/42	164 total (42 prenatal)	United States	62% percent Caucasian, 26% African American, 5% Latina/Hispanic, 5% mixed-race, and 2% other minority groups.	Community sample, 50% had experienced domestic violence	M=26.7 (SD = 5.0)	43% single women, 45% married, and 12% separated or divorced.	28 weeks to 40 weeks	Monthly incomes ranged from \$267 to \$9,733 (median = \$1,550; SD = \$1,665).
		Atkinson et al. (2009)	35/42	102	Canada	83% Caucasian, with small percentages of other ethnicities, including Asian, Hispanic, and African Canadian.	Community sample	M= 31.89 (SD = 3.65)	93.5% of the mothers were married	28 weeks to 40 weeks	Mean of 15.50 (SD = 3.17) years of education; the sample was largely middle class, with 77% earning a family income exceeding \$50,000 Canadian

Maternal representation	Working Model of the Child Interview-D (Crawford & Benoit, 2009 based on Zeanah et al., 1993)	Benoit, Parker & Zeanah (1997)	33/42	96	Canada	100% Caucasian	Community sample	M= 29.17 Range: 20-39	94 married, 2 single	28 to 40 weeks	9 -27 years (M= 15.18 years)
		Crawford & Benoit (2009)	33/42	35	United States	Not reported	Community sample	M=30.29. Range= 25-29	Not reported	28 to 40 weeks	Most had some college education (M = 16.11, SD = 3.31, range = 10–27)
		Huth-Bocks et al., (2004)	36/42	206	United States	63% Caucasian; 25% African American; 5% Hispanic; 4% Biracial; 1% Native American; 1%, 1% Asian American, 1% other	Community sample. 44% (n=91) had experienced domestic violence, 56% (n=115) no domestic violence	M= 25.4 (SD=5.0) Range: 18-40	50% never married; 40% married; 5% divorced; 4% separated; 1% widowed	28 to 40 weeks	93 (45%) high school or less; 72 (35%) some college; 14 (7%) associates degree; 16 (8%) Bachelor's degree; 11 (5%) graduate degree
		Huth-Bocks et al 2011	36/42	173	United States	63% Caucasian; 25% African American; 5% Hispanic; 4% Biracial; 1% Native American; 1%, 1% Asian American, 1% other	Community sample. 91 (44%) had experienced domestic violence, 115 (56%) no domestic violence	M= 25.4 (SD=5.0) Range: 18-40	50% never married; 40% married; 5% divorced; 4% separated; 1% widowed	28 to 40 weeks	93 (45%) high school or less; 72 (35%) some college; 14 (7%) associates degree; 16 (8%) Bachelor's degree; 11 (5%) graduate degree
		Lannert et al., (2013)	35/42	180	United States	63% Caucasian, 24% African American, 5% Hispanic, 4% biracial, 1% Asian Pacific, 1% Native American, 2% other ethnicity.	79% (44%) had experienced domestic violence, 101 (56%) no domestic violence	M = 25 Range: 18 to 40	Not reported	28 to 40 weeks	87% reported that they had graduated high school, and reported monthly income ranged from 0 to \$9500 (Mdn = \$1500)

Maternal foetal attachment	Maternal Antenatal Attachment Scale (MAAS; Condon, 1993)	Madigan et al. (2015)	35/42	84	Canada	100% Caucasian	Community sample	M= 29.48 (SD=4.0) Range: 25-39	97% married/cohabiting	28 to 40 weeks	Average years of education = 15.73 (SD= 3.11). The average income was \$50,000–80,000.
		Theran et al., (2005)	31/42	180	United States	63% White/Caucasian, 24% Black/African American, 4% mixed race, 5% Hispanic, 1% Asian-Pacific, 1% Native American, 2% Other	Community sample; 44% had experienced domestic violence	M= 25 Range: 18-40	41% married, 41% single never married, 11% separated/widowed/divorced	32 weeks to 40 weeks	87% high school at least, 43% employed, mean income \$1,914
		Vreeswijk et al (2015)	35/42	308	the Netherlands	82% Dutch, 18% other	Community sample	M= 31.60 (SD = 4.30) Range = 17.34–41.88	Not reported	26 weeks	Years of education following primary school varied from 0 to 4 years (11.9%), 5 to 8 years (24.4%), or 9 years or more (63.7%). Employment: 87.1%
		Schwerdtfeger & Goff (2007)	34/42	41	United States	53.7% White (n = 22), 24.4% African American (n=10)	Community sample (136 multiparous and 166 primiparous mothers)	M=22.9 (SD = 3.77) Range: 18-33	41 participants, 48.8% (n = 20) were dating or single, 22% (n = 9) were married, 22% (n = 9) were living with a significant other, and 7.3% (n = 3) were divorced	12 to 41 weeks	Total income range of \$9,999 to \$59,999, with a majority below \$19,999 (n = 31, 75.6%). 78.1% (n = 32) high school educated, 36.6% (n = 15) unemployed, 26.8% (n = 11) employed full-time, and 17.1% (n = 7) employed part-time.

	Condon & Corkindale (1997)	26/42	238	Australia	Not reported	Community sample	M= 27.4 (SD=4.7)	Mean years in partner relationship = 4.2 (SD= 3.5)	33.7 weeks (SD = 7.0).	Professional (24%), skilled (30%), semi-skilled (23%), unskilled (23%)
Maternal Foetal Attachment Scale (MFAS; Cranley, 1981)	Bloom (1995)	29/42	79	United States	29 (60%) Black, 18 (38%) White, 1 (1%) Hispanic, 1 (1%) other	Adolescent community sample	Range: 12-19	42 (86%) single	20 to 29 weeks and 30 to 40 weeks	Not reported
	Mercer & Ferketich (1995)	29/42	302	United States	Majority anglo-white (68% experienced mothers, 74% inexperienced mothers)	Community sample: experienced and inexperienced mothers	M=29 years, (SD = 4.84), with a range from 18 to 45	Majority married: (91% experienced mothers, 84% inexperienced mothers)	24 to 34 weeks	Experienced mothers: 54% professionals, 32% skilled or clerical, and 14% semi- or unskilled. Inexperienced mothers: 58% professionals, 25% skilled or clerical, and 17% semi- or unskilled
Pictorial Representation of Attachment Measure (PRAM; van Bakel, Maas, Vreeswijk & Vingerhoets, 2013)	van Bakel et al. (2013)	36/42	352	the Netherlands	Dutch Caucasian (84%). Other Western (7%) or non-western (9%) ethnic background (e.g., Polish, Moroccan, Turkish, Surinam or Asian).	Community sample	17 to 44 years M=31.5 years (SD=4.4),	84 single, 268 partnered	26 weeks (SD = 1; Range 23–30 weeks).	Average of 16 years of formal education (SD=4.1).

Maternal foetal attachment	Prenatal Attachment Inventory (Muller, 1989, 1993)	Gau & Lee (2003)	36/42	349	United States	18.3% African American; 5.5% Asian; 70.6% Caucasian; 2.6% Hispanic; 1.5 % Native American; 1.5% African	Inpatient high-risk unit 2.9%; Outpatient high-risk OB unit 8.7%; outpatient	M= 29.21(<i>SD</i> =5.33) 18-25= 69 (20.3%); 16-35 = 214 (62.9%); 35+ = 57 (16.8%)	258 (75%) married; 13 (3.8%) divorced; 4 (1.2%) widowed; 59 (17.2%) single with partner; 10 (2.9%) single without partner	28 to 40 weeks	Professional = 101 (29.6%); minor professional = 137 (40.2%); clerical = 51 (15%); semi-skilled = 41 (12 %) unskilled/service workers = 11 (3.2%)
		Damato (2004)	39/42	139	United States	136 Caucasian (97.8%)	Community sample	M= 32.1 (<i>SD</i> = 4.9)	137 (98.6%) married	26.5 weeks (<i>SD</i> =6.4 3)	Income less than or equal to \$60,000 = 75 (53.9%)
	Prenatal Maternal Attachment Scale (LoBiondo-Wood & Vito-ORourke, 1990)	Fowles (1996)	31/42	136	United States	White (92%, n = 125)	Community sample	The average age was 26 years (<i>SD</i> = 3.6, range 18-35).	Married (93%, n = 126). Seven percent (n= 10) were partnered.	24 to 40 weeks	Approximately 60% in clerical, sales and semi-skilled workers, 40% major and minor professionals
	Prenatal Attachment Inventory (Muller, 1989, 1993)	Gau & Lee (2003)	36/42	344	United States	18.3% African American; 5.5% Asian; 70.6% Caucasian; 2.6% Hispanic; 1.5 % Native American; 1.5% African	Inpatient high-risk unit 2.9%; Outpatient high-risk OB unit 8.7%; outpatient	18-25= 69 (20.3%); 16-35 = 214 (62.9%); 35+ = 57 (16.8%)	258 (75%) married; 13 (3.8%) divorced; 4 (1.2%) widowed; 59 (17.2%) partnered; 10 (2.9%) single without partner	28 to 40 weeks	Professional = 101 (29.6%); minor professional = 137 (40.2%); clerical = 51 (15%); semi-skilled = 41 (12 %) unskilled/service workers = 11 (3.2%)

Mind-mindedness	'Describe your child' question to assess mind-mindedness	Arnott & Meins (2008)	32/42	28 mothers (3 solo), 25 fathers	United Kingdom	26 mothers White British, 2 Asian	Community sample	M= 30.5 years Range: 23 to 41	25 married or cohabiting, 3 single mothers	M = 34.5 weeks gestation, S.D. = 5.04, range 27–39 weeks	Not reported
	Prenatal Parental Reflective Functioning Questionnaire (P-PRFQ; Pajulo et al., 2010)	Pajulo et al., (2015)	35/42	124 (n= 29 to review construct validity)	Finland	Not reported	Community sample	M= 30 years (SD= 4.3)	121 married/cohabiting	32 weeks	Education: low (13, SD= 15) Middle (19, SD = 23) High 68 (SD= 82)
Reflective functioning	Pregnancy Interview with Reflective Functioning Scale (Slade et al; 2002; Slade et al., 2005)	Sadler et al., (2016)	28/42	30	United States	73% Latina. 27% African American	Community sample of expectant mothers in adolescence	M= 17.7 (SD=1.5) Range of 14 - 19 years	65% single with partner contact, 25% no contact with partner, 10% married	30-39 weeks	Highest grade in school, 10.4 (SD=2.4)
		Salo et al., (2019)	33/42	45	Finland	Not reported	Mothers with depression	Not reported	Married: 16 (40%), cohabiting 20 (50%), 4 single (10%)	22-31 weeks	Education: elementary school 4 (10%), high school/trade 19 (47.5%), University degree 13 (32.5%), doctorate 5 (10%) Monthly family income after tax 2,085.77 (1,265.37); 12.3% unemployed; 93.8% Completed at Least a Secondary Education; 11.1% financial problems
		Smaling et al., (2015)	35/42	162	the Netherlands	84.6% Caucasian, 15.4% other	High (n=83) and low risk mothers (n=79)	M = 22.22 years, (SD = 2.39)	13.6% single parents	27 weeks	

	Pajulo et al., (2012)	34/42	34	Finland	Not reported	Sample at psychosocial risk (drug-misuse)	M=25.1 (SD= 5.8) range of 16 to 38 years.	15 (44%) single parents	21 to 39 weeks, M=30.8 (SD= 5.8)	Only basic education (9 years max): 24 (77%)
Pregnancy Interview Revised with Reflective Functioning Scale (Slade et al; 2002; Slade et al., 2005)	Smaling et al., (2016)	35/42	142	the Netherlands	89% Caucasian; 11% other	Community sample	M= 22.85; (SD= 2.21) range of 17 to 25 years old	93% in a relationship, 7% single parents	27 weeks	32% completed a Bachelor's or Master's degree. Monthly family income after tax 2,456.99 (1,215.84);

Study characteristics and quality

The papers identified were published between 1995 and 2019. Samples were recruited from the United States (N=13), the Netherlands (N=4), Canada (N=3), Finland (N=4), Italy (N=2), the United Kingdom (N=1), and Australia (N=1). Seven studies reported on sample sizes ≤ 50 , 13 on sample sizes ≤ 200 , and seven on samples > 200 , with the smallest sample being 30 (Sadler et al., 2016) and largest at 666 (Ammaniti, Tambelli & Odoriso, 2013). Most sample populations were expectant mothers in the third trimester of pregnancy (N= 18). Fourteen out of 28 studies included a sample of ‘at-risk’ women. Caucasian participants were heavily represented across studies, with only two studies reporting on a majority of participants from other racial/ethnic groups (Bloom, 1995; Sadler et al., 2016).

Information on study quality as determined by the QATSD (Sirriyeh et al., 2012) is presented alongside sample characteristics in Table 3. QATSD criteria and ratings are reported in full in Appendix C. Quality ratings demonstrated a trend whereby more recent papers scored higher across all domains. Notably, no studies reported on co-production in relation to either the development of the measure or the study design. Few measures (N=3) described the statistical consideration of sample size. Psychometric properties were discussed in all studies. Variation in reporting therein was partly understood in terms of the variation in aims and objectives. For example, papers reporting on self-report tools presented a greater range and depth of information on psychometric properties due to these either being the main or secondary aim of the study; and papers describing interview measures reported such information in the description of the measure, along with a short comment on inter-rater reliability and/or agreement. No studies reporting on predictive validity of tools were identified.

In terms of measures of maternal foetal attachment, papers reporting on the self-report PAI were of highest quality ($M= 37.5$), whilst papers reporting on the MFAS were of lowest quality ($M=29$). This did not reflect an absolute difference in content, but rather in the level of detail and clarity of reporting. Papers reporting on the Pregnancy Interview showed the most variation in quality, with scores ranging from 29-36. For example, Sadler et al's., (2016) small sample size was limited in its representativeness and lacked information on recruitment. Smaling et al., (2015) provided a comprehensive overview of theoretical issues, methodology and results, though (like many) did not report on either sample size calculations or the use of co-production in study design. Pajulo et al., (2015), reporting on the P-PRFQ, and van Bakel et al., (2013), reporting on the PRAM, showed a similar profile.

Table 3. *Psychometric properties and feasibility of instruments assessing the maternal-foetal relationship*

Construct	Tool/author	Tool format	Number of items	Subscales or forms	Range and interpretation of output	Reported Reliability	Reported Validity	Response format and ease of scoring	Clinical or research Feasibility	Availability
Maternal foetal attachment	Maternal Antenatal Attachment Scale (MAAS; Condon, 1993)	Self-report scale	19 items	Two subscales: Attachment (n= 11 items) and Preoccupation (n= 8 items)	19-95 Higher scores indicate stronger attachment bond	Internal consistency α = .69 to .85 (total scale) Individual subscale coefficients ranging from r = .52 to .73	Content: Yes Criterion: Yes Construct: Yes	Self-report; 5-point Likert scale yielding a sum total (simple scoring)	Both	Brief to administer (<5 mins) Available online, free of charge
	Prenatal Maternal Attachment Scale (PMAS; LoBiondo-Wood & Vito-O'Rourke, 1990)	Self-report scale	39 items: 29 items at any stage; 10 items after foetal	Not reported	19-95 Subscales: 11-50 (quality); 8-40 (preoccupation) Higher scores indicate stronger attachment bond	Internal consistency: α = .87 (29 item) and .83 to .90 (39 item)	Content: Yes	Self-report; 4-point Likert scale yielding a sum total (simple scoring)	Research use	Brief to administer (<10 mins) Available online, free of charge
	Maternal Foetal Attachment Scale (MFAS; Cranley, 1981)	Self-report scale	24 items (revised to 23 in Mercer &	8 rating scales assessing qualitative features, 8 rating affective tone	24-120 Higher scores indicate stronger attachment bond	Internal consistency: α = .88 (total scale) Test-retest= Yes	Content: Yes Criterion: Yes	Self-report; 5-point Likert scale yielding a sum total	Both	Brief to administer Available online, free of charge

Maternal representation	Prenatal Attachment Inventory (PAI; Muller, 1993)	Self-report inventory	21 items	Uni-dimensional	21-84 Higher scores indicate stronger attachment bond	Internal consistency: $\alpha = .81$ to $.93$	Content: Yes Structural: Yes Criterion: Yes Construct: Yes	Self-report; 4-point Likert scale yielding a sum total (simple scoring)	Both	Brief to administer (<5 mins)	Available online, free of charge
	Pictorial Representation of Attachment Measure (PRAM; van Bakel, Maas, Vreeswijk & Vingerhoets, 2013)	Representation of bond as measured by distance between sticker on page (baby) and circle (mother)	Not relevant	Not relevant	Distance: range of 0 to 9.3cm (lower score = stronger attachment bond)	No reliability analyses performed. Single-item measure, no item analyses or inter-item consistency measures.	Criterion: Yes Construct: Yes	Self-report; measurement of distance (simple scoring)	Both	Brief to administer (<5 mins)	Available online, free of charge
	Working Model of the Child Interview (Zeanah et al., 1994)	Structured clinical interview	15 items	5 rating scales	Derives one of three categorisations; balanced, distorted, disengaged	Internal consistency: $\alpha = .94$ Inter-rater reliability: $\kappa = .62$ to $.94$ ($p < .001$)	Content: Yes Structural: Yes Criterion: Yes Construct: Yes	Open ended; clinician rated with a 5-point Likert scale (specialist)	Both	Time-consuming to administer (60 mins)	Available online, specialist training required to score
	Working Model of the Child Interview-D (Crawford & Benoit, 2009; based on WMCI, Zeanah et al., 1986)	Structured clinical interview	15 items	8 rating scales assessing qualitative features; 8 rating affective tone	Derives one of four categorisations; balanced, distorted, disengaged, disorganized	Internal consistency: $\alpha = .84$ to $.91$ (T1), $.78$ to $.90$ (T2), $.81$ to $.92$ (T3). Kappa = $.94$ for overall classification	Content: Yes	Open ended; clinician rated with a 7-point Likert scale (specialist interpretation)	Both	Time-consuming to administer (60 mins)	Available online, specialist training required to score

Maternal reflective Functioning	Adjective Scale Questionnaire from Interview of Maternal Representations (Ammaniti et al., 1999)	Lists of pairs of adjectives with a Likert-scale to indicate rating	17 pairs of adjectives	5 lists of 17 pairs of mixed adjectives, divided into four representational areas	Range of 3-21. A higher score indicates a more positive, balanced representation.	Internal consistency: α = .84 to .91 (T1), .78 to .90 (T2), .81 to .92 (T3).	Content: Yes Structural: Yes	Self-report; 7-point Likert scale (specialist interpretation)	Research use	Brief to administer (<10 mins)	Unknown, no information available
	Interview of Maternal Representations Revised (IRMAG-R; Ammaniti & Tambelli, 2010).	Structured clinical interview	41 items	7 dimensions including herself as a mother (A1–A7) and descriptions of infant (B1–B7) are coded for, reflecting features of the mother's narrative	Derives one of three categorisations: integrated/balanced, restricted/disinvested; not integrated/ambivalent	Inter-rater reliability: 94% (κ = .83, p < .001) Pearson's r = .89, p = .01 (coherence), Pearson's r = .96, p = .01 (emergence of fantasies). Mean reliability = .89-.92.	Content: Yes Structural: Yes Criterion: Yes Incremental: Yes	Open ended; clinician rated with 5-point Likert scale (specialist interpretation required)	Both	Time-consuming to administer (45-60 mins)	Unknown, no information available
	Prenatal Parental Reflective Functioning Questionnaire (P-PRFQ; Pajulo et al., 2010)	Self-report instrument	33 items Revised to 14	Three factors identified	Variable scaling of scores, representing higher quality reflective functioning (high-low, low-high, middle)	Internal consistency: α = .65 (33 item); .77 (14 item)	Content: Yes Structural: Yes Construct: Yes	Self-report; 7-point Likert scale (simple to score, but variable scaling of)	Both	Brief to administer (<5 mins)	Available online, free of charge

Maternal mind-mindedness	Pregnancy Interview (Slade et al., 1987; 2002; 2005) with Reflective Functioning Coding Manual (Fonagy, Target, Steele and Steele, 1998)	Semi-structured clinical interview	24-items	Three subscales suggested in paper, 6 items each	Higher scores represent better reflective functioning	Inter-rater reliability: 80% ($\alpha = .73$ to $.95$) Internal consistency: $\alpha = .78$ (anticipation), $.73$ (differentiation), $.78$ (interaction)	Construct: Yes	Open ended; clinician rated with 9-point Likert scale (specialist interpretation required)	Both	Time-consuming to administer (60-90 mins)	Available from authors to researchers and clinicians trained in its use
	Pregnancy Interview Revised (Slade et al., 2011) with Reflective Functioning Coding Manual (Slade et al; 2002; Slade et al., 2005)	60 to 90-minute semi structured interview	22-items	Not relevant	Higher scores represent better reflective functioning	Mean interrater agreement = $.87$; overall RF-score = $.90$	Structural: Yes	Open ended; clinician rated with 11-point scale from -1 (negative RF) to $+9$ (full or exceptional)	Both	Time-consuming to administer (60-90 mins)	Available from authors to researchers and clinicians trained in its use
	'Describe your child' question, Meins et al., 1998	Single question, with open ended response	1 item	Not relevant	Scores for appropriate mind-related comments are expressed as a proportion of the total number of comments produced by the caregiver	Inter-rater reliability: $\kappa = .94$	Content: Yes Construct: Yes	Open ended; responses categorised by clinician, frequency of mentalistic comments	Research use	Brief to administer (<10 mins)	Available online, free of charge

Psychometric properties

a. Measures of maternal-foetal attachment

The Maternal-Fetal Attachment Scale ([MFAS], Cranley, 1981), Maternal Antenatal Attachment Scale ([MAAS], Condon, 1993), Pictorial Representation of Attachment Measure ([PRAM], van Bakel, Maas, Vreeswijk & Vingerhoets, 2013), Prenatal Maternal Attachment Scale ([PMAS], LoBiondo-Wood & Vito-ORourke, 1990) and Prenatal Attachment Inventory ([PAI] Muller, 1989, 1993) were identified in the search.

The MFAS is a 37-item self-report scale, revised to 19-items. It is widely used in clinical research, reporting good reliability across the included studies. Bloom (1995) reports a Cronbach's coefficient alpha of .88 for the total scale, with subscales – identified through expert consensus – at .73 for role taking, .53 for interaction with foetus, .56 for differentiation from foetus, .55 for giving of self and .77 for attributing characteristics.

The MAAS is a 19-item self-report scale comprising two subscales identified by factor analysis: 'quality of attachment' (11 items) and 'intensity of preoccupation' (8 items). There is some evidence for construct validity in its correlation with other measures of social wellbeing (Condon & Corkindale, 1997), as well as adequate reliability as assessed by internal consistency (Schwerdtfeger & Goff, 2007). The lack of norms, categories, or cut-off scores for the MAAS limits its utility in clinical settings.

The PMAS is a 29-item self-report scale, with an additional 10 items available to women who have experienced foetal movement. Reported psychometric properties include good internal consistency ($\alpha = .90$) and content validity. Currently, the PMAS is used in research settings only.

The PAI is a 29-item with good reported reliability and validity, including concurrent validity with the Maternal Fetal Attachment Scale, construct validity with Maternal Adjustment and Maternal Attitudes Scale, content validity achieved through review by panel

of expert clinicians, theorists and new mothers, and concurrent validity with the Maternal Attachment Interview (Damato, 2004). Factor analysis has found that it fits a unidimensional scale (Gau & Lee, 2003).

Finally, the PRAM is a single pictorial representation of the maternal-foetal bond, demonstrated through the distance between a sticker (representing the foetus) and centre of a circle (representing the parent's life); it showed convergent validity with verbal and non-verbal measures of maternal-foetal attachment assessed with the MAAS. However, as it is a single-item measure, no item analysis or inter-item consistency measures can be performed, nor were other investigations of validity or reliability reported (van Bakel, Maas, Vreeswijk & Vingerhoets, 2013).

b. Measures of maternal representation

Studies reporting on three interview-based measures of maternal representation were identified: the Working Model of the Child Interview ([WMCI], Zeanah et al., 1994), the Working Model of the Child Interview-D ([WMCI-D] Crawford & Benoit, 2009; based on the WMCI, Zeanah et al., 1986), and the Interview of Maternal Representations-Revised ([IRMAG], (Ammaniti & Tambelli, 2010). These require between 45 to 60 minutes for delivery, with versions of the WMCI consisting of just 15 items compared with the IRMAG-R which comprises 47 items. One self-report form was also identified (ASQ-IRMAG; Ammaniti et al., 1992).

The IRMAG-R is a revised version of the IRMAG interview (Ammaniti et al., 1999), with five further questions exploring the influence of the mother's trauma, fears and preoccupations related to herself as mother or to her unborn baby. The coding system allows the mother's transcript to be classified as integrated/balanced, restricted/disinvested, or not

integrated/ambivalent. Interrater reliability for IRMAG-R scales showed a mean reliability of .92. Interrater reliability for the main category was 94%, (Cohen's $\kappa = .83$, $p < .001$). Factor analyses were reported with principal component analysis showing two factors, indicative of good structural validity. Evidence demonstrates the criterion and incremental validity of IRMAG-R as predictive of postnatal emotional availability and attachment security (Tambelli, Trentini & Dentale, 2020). Flykt and colleagues (2012) report on an adjective scale questionnaire form from the IRMAG: whilst it showed good reliability ($\kappa = .83$), no evidence for validity was reported. The authors note the questionnaires are available for research use only.

The WMCI is a 60-minute structured interview examining perceptions and subjective experiences of the current and future relationship between mother and baby. Questions can be changed into the future tense to assess antenatal representations in pregnant women. Percent agreement for overall classification was between 85% ($\kappa = .57$, Benoit, Parker & Zeanah, 1997) and 96% ($\kappa = .62$ to $.94$; $p < .001$; Dayton et al., 2010).

Studies evaluating the properties of the WMCI-D (Huth-Bocks et al, 2004, 2011; Lannert et al., 2013; Madigan et al., 2015; Theran et al., 2005 Vreeswijk et al., 2015), adapted from the WMCI to capture disorganised representations, have reported on reliability and validity. The WMCI-D shows good inter-rater agreement (90%, $\kappa = .71$; Crawford & Benoit, 2009) and good construct validity, with an 83% correspondence with the Adult Attachment Interview (Madigan et al., 2015). The subscales that were developed for the WMCI-D scale have variable interrater reliability. In addition to assessing representations of the infant, mothers' responses can also be coded for representations of self-as-mother, adapted from the Confidence and Competence scale from Slade et al.'s (1994) Pregnancy Interview Coding System. Weighted κ on this subscale was .63 (Huth-Bocks et al., 2004).

c. Measures of maternal reflective functioning

Three instruments assessing maternal reflective functioning were identified: the P-PRFQ (Pajulo et al., 2010), PI (Slade et al; 2002; Slade et al., 2005) and PI-R (Slade et al., 1987, 2002, 2011).

The PI and PI-R are semi-structured interviews, lasting between 60 and 90 minutes and capturing parents' reflective functioning capacity. The coding for the PI shows good inter-rater agreement (80%; Sadler et al., 2016) and reliability ($\alpha = .73$ to $.95$; Salo et al., 2019). Construct and structural validity are shown to be robust (Smaling et al., 2015; 2016). Extensive training on scoring the transcribed interviews is required to access the coding framework from the authors, suggesting the need for a comparable questionnaire measure for use within both clinical and research settings. The P-PRFQ (Prenatal Parental Reflective Functioning Questionnaire; Pajulo et al., 2010) is a 14-item self-report instrument, designed to address this issue. It shows good reliability ($\alpha = .77$) and reports both good content and structural validity, with factor analysis demonstrating a three-factor model: "Opacity of mental states", "Reflecting on the fetus-child", and "The dynamic nature of mental states" (Pajulo et al., 2015).

d. Measures of maternal mind-mindedness

Mind-mindedness has not been well studied in populations of expectant mothers. Only one study was identified that used a measure of mind-mindedness in the antenatal period (Arnott & Meins, 2008). This asked mothers an adaptation of the 'Describe your Child' question typically used to assess mind-mindedness, assessing the degree to which expectant mothers use mentalizing, behavioural, physical or general descriptors to predict what their child will be like. Coding with the mind-mindedness coding manual (Meins & Fernyhough, 2015)

showed good inter-rater reliability ($\kappa = .94$). Although the construct validity of antenatal mind-mindedness was not demonstrated, it did show good discriminant validity with respect to the MAAS (Condon, 1993). As this was the only identified study investigating antenatal mind-mindedness, and little is known about the properties of the construct, the measure is currently only recommended for research use.

Feasibility for use within clinical settings

The usability of the tools within clinical or research settings varied. An overview of factors relating to usability is provided in Table 3. The majority of instruments (N=10) were designated suitable for use in both clinical and research settings. The number of items for self-report tools ranged from 14 (P-PRFQ; Pajulo et al., 2010) to 39 (PMAS; LoBiondo-Wood & Vito-O'Rourke, 1990). For interview-based tools, it ranged from 15 (WMCI; Zeanah et al., 1994) to 47 (IRMAG-R; Ammaniti & Tambelli, 2010); the time for administration was longest for the Pregnancy Interview (Slade et al., 1987; 2002; 2005) at up to 90 minutes, and shortest for the IRMAG-R (Ammaniti & Tambelli, 2010) at 45-60 minutes. The majority of tools, whether self-report or clinician-rated, used a response or coding format of Likert scales (N= 11). Seven tools were self-report instruments, while the remaining six were clinician-rated, using coding manuals that require specialist training to administer. Whilst most tools could be located online and were free to use, correspondence with the author confirmed that the Pregnancy Interview coding scheme is only provided to practitioners trained in its application.

Discussion

The purpose of this systematic review was to identify and evaluate the quality and availability of contemporary measures of representation, foetal attachment/bonding, mind-mindedness and reflective functioning applied in populations of expectant mothers, including the extent to which the literature reports on their psychometric properties. The measurement of these constructs is important for policy makers in health and social services as they serve as strong predictors of later difficulties in the parent-infant relationship and later infant outcomes (e.g. Branjerdporn et al., 2017).

What tools are used to measure the maternal-foetal relationship?

Thirteen tools were identified, each measuring one of the four central theoretical constructs relating to the MFR. The majority of instruments measured antenatal maternal-foetal attachment or bonding (N= 5), followed by antenatal maternal representation (N=4) antenatal maternal reflective functioning (N= 3) and finally mind-mindedness (N=1).

How valid and reliable are tools used to measure the maternal-foetal relationship?

The papers identified for review varied in the extent to which they reported on instrument reliability and validity, highlighting limitations in the availability of psychometric information. For example, the MFAS (Cranley, 1981), whilst widely used in clinical research studies, shows significant gaps in the evaluation and reporting of validity. Previous reviews (e.g. Beck, 1999; Doan, Cox & Zimmerman, 2003; van den Bergh & Simons, 2009) note longstanding issues with both content validity and the method through which the dimensions were constructed, which was primarily through expert perspective as opposed to statistical methods. When factor analysis was performed in early studies, it derived between two and three significant factors, rather than five (Muller, 1993).

Of the tools assessing MFA, studies using the PAI (Muller, 1989, 1993) demonstrated evidence for good reliability and validity across a range of domains. One issue identified across MFA tools was the relative lack of known-groups validity – that is, differentiation between community and at-risk samples - compared to tools measuring reflective functioning and representation. Further research is needed to identify cut-off scores and criteria for raising concerns about the developing maternal-foetal bond. Of instruments assessing maternal representation, studies reporting on the WMCI (Zeanah et al., 1994) showed the most substantial evidence for reliability as well as demonstrating content, structural, criterion and construct validity. The Adjective Scale Questionnaire from the IRMAG also showed promise in this respect, although would benefit from further research. Finally, regarding antenatal mentalization, studies using the Pregnancy Interview (Slade et al., 2002) reported most robust evidence for reliability and validity. Meanwhile, initial investigations of the P-PRFQ (Pajulo et al., 2010) indicated potential with respect to its psychometric properties. Measurement of antenatal mind-mindedness has only been reported in one study. This was limited in its reporting of psychometric data, although found some evidence of predictive validity, demonstrating that the mind-mindedness of parents' antenatal predictions were associated with mind-minded comments at six-months post-partum (Arnott & Meins, 2008). Nonetheless, its potential application in clinical settings cannot be properly evaluated before further articulation of its validity and reliability.

What is the feasibility of tools in identifying mothers in need of further support?

The feasibility of using each tool was defined in relation to a number of different factors (e.g. number of items, time to administer, self-report or clinician-rated, suitability for use in clinical settings and availability). Mothers considered at highest risk include those who have experienced childhood maltreatment (Malone et al., 2010) and domestic violence (e.g. Huth-Bocks et al., 2004; Lannert, Levendosky & Bogat, 2013). Other risk factors include

detrimental health behaviour during pregnancy (Fares & Adler, 1998), the presence of two or more children under seven years in the household (Pajulo et al., 2006), poor marital adaptation (Sitrin, 2001; Fares & Adler, 1998) and maternal education, social support, and substance use (Smaling et al 2016).

Brief self-report tools are most suitable for use in primary care settings. For example, the 29-item PAI (Muller, 1989, 1993) performs well in psychometric terms, presents minimal participant burden, and is easily scored by clinicians. In contrast, interview-based measures may be less well suited to screening, requiring a coding scheme to be applied by trained clinicians that is both costly and resource-intensive. Unfortunately, this has implications for the assessment of maternal representation, reflective functioning and mind-mindedness in primary care contexts and large-scale research. This raises questions about whether and why these constructs are under-represented in the literature compared to maternal foetal attachment. The 14-item self-report tool, the P-PRFQ (Pajulo et al., 2010), measuring reflective functioning, may present a viable alternative. However, having been developed more recently, it is still in the early stages of validation and reliability testing. Further investigation is needed to confirm its utility and robustness as a screening tool.

Implications and recommendations for clinical practice

Clinicians in health and social care contexts should routinely consider the use of instruments to assess the quality of the developing maternal-foetal relationship, taking into consideration the psychometric robustness, feasibility and predictive validity of tools for later parent-infant outcomes. The latter would facilitate early identification of difficulties in the MFR, which has particular significance for at-risk populations. Whilst there is no literature directly comparing the predictive validity of different MFR tools, previous research demonstrates a relationship between psychosocial risk factors, constructs related to the MFR, and postnatal outcomes.

This includes evidence for the detrimental impact of maternal risk factors on quality of antenatal representation (Vreeswijk, Maas & van Bakel, 2012; Vreeswijk et al., 2015), reflective functioning (Huth-Bocks et al., 2004; Smaling et al., 2015; Theran et al., 2005), and maternal-foetal attachment, with further implications for their association with postnatal bonding (McNamara, Townsend & Herbert, 2019). The accurate identification of at-risk mothers provides an important window of opportunity to deliver targeted support to reduce the likelihood of adverse child outcomes. Further research should identify which construct, and indeed which measure, is most strongly associated with parent-infant interaction quality and infant outcomes.

Findings from this review suggest that self-report instruments, such as the PAI and MAAS, can be recommended for use in assessing maternal foetal attachment in primary care settings (see Table 4). Both show good psychometric properties and usability, with higher scores indicating a stronger attachment bond. Worth noting is that self-report measures may be less well-suited for at-risk populations where reflexivity, self-awareness and insight may be compromised. The high face validity of these measures may result in expectant mothers over-reporting their degree of bonding with their unborn baby, particularly in cases where they might feel anxious about intervention. Following further investigation into its psychometric profile, the self-report P-PRFQ may be a more suitable, less transparent measure for screening levels of reflective functioning. Moreover, as a relatively brief measure that does not require specialist training to administer, it can be used by practitioners such as midwives, health visitors and public health nurses during health and social care contacts in the third trimester of pregnancy. Importantly, it should be noted that in the absence of cut-off scores and norms for self-report instruments, where lower scores indicate concerns within the MFR, clinicians should utilise structured professional judgement

alongside the application of standardised tools to make judgements about which mothers may need further support. Accordingly, scores on self-report measures should be considered alongside any pre-existing risk factors. This would include mothers with pre-existing mental health difficulties, as well as those who have experienced childhood maltreatment, domestic violence and substance misuse, significant socioeconomic and educational disadvantage as well as those with multiple children under seven years old within the household who have little social support. Where lower scores on self-report measures are present, alongside other factors that indicate risk to the quality of the MFR, onward referral may be necessitated to tertiary services that have the resources to utilise interview measures such as the IRMAG-R, PI or WMCI and can offer further investigation and intervention.

In such settings, the Pregnancy Interview Revised should be used to ascertain reflective functioning capacities. This interview would not only help to clarify the level of support needed, but also has the potential to facilitate reflexivity by helping the mother to become more aware her thoughts and feelings towards her unborn baby, thus acting as an intervention in itself. These women could then be directed towards appropriate resources (e.g. the Getting to Know Your Baby programme, www.your-baby.org.uk), advice around techniques to improve the developing relationship, in addition to early intervention services. These might include mentalization-based interventions, such as Minding the Baby (Sadler et al., 2013), which may be beneficial for women with more challenging psychosocial histories and contexts (e.g. domestic violence, drug misuse, experience of trauma).

Table 4. Recommendations for instruments to be used in primary and secondary care settings

Instrument	Strengths	Weaknesses
Primary care	Prenatal Attachment Inventory (PAI) Muller, 1989, 1993) • Self-report (21-items), freely available for clinical use, quick to administer and easy to interpret irrespective of professional background • Substantial evidence for robust psychometric properties • Unidimensional, providing an overall score indicating strength of attachment bond • Lower scores indicate compromised attachment bond, indicating potential relevance of onward referral for further assessment	• High face validity, indicating validity may be compromised in populations where insight is limited, or expectant mothers are anxious about service involvement • No cut-off scores or clinical norms available
	Maternal Antenatal Attachment Scale (MAAS), Condon, 1993) • Self-report (19-items), freely available for clinical use, quick to administer and easy to interpret irrespective of professional background • Substantial evidence for robust psychometric properties • Provides scores across two subscales: attachment (level of bond) and preoccupation (level of focus on baby) • Lower scores indicate compromised attachment bond, indicating potential relevance of onward referral for further assessment	• High face validity, indicating validity may be compromised in populations where insight is limited, or expectant mothers are anxious about service involvement • No cut-off scores or clinical norms available
	Prenatal parental reflective functioning questionnaire (P-PRFQ; Pajulo et al., 2010) • Self-report (14-items), freely available for clinical use, quick to administer • Low face validity, appropriate for use in populations where insight may be compromised or anxiety about service involvement contributing to over/under-reporting • Emerging evidence for psychometric robustness, requiring further investigation • Lower scores indicate compromised reflective functioning, indicating potential relevance of onward referral for mentalization based intervention	• Further psychometric investigation needed • Interpretation requires awareness of variable scaling of scores across items; may be more complex to interpret for clinicians who lack prior knowledge of mentalization theory and associated profile of reflective functioning deficits • No cut-off scores or clinical norms available
Secondary care	Interview of Maternal Representations Revised (IRMAG-R; Ammaniti & • Derives one of three representation categorisations to inform conceptualisation of difficulties in the maternal-foetal relationship (MFR): integrated/balanced, restricted/disinvested; not integrated/ambivalent • Can be used in more complex populations to inform formulation and treatment planning in relationally focused interventions	• Clinician administered interview, requiring specialist training to deliver, with associated costs • Lengthy to administer (45-60 mins) • Requires specialist training in use of coding manual as well as significant time-commitment to interpret

Working Model of the Child Interview-D [WMCID] Crawford &	• Derives one of four representation categorizations to inform conceptualization of difficulties in the MFR: balanced, distorted, disengaged and disorganized; the latter category renders it useful for application in settings where parents may have experienced complex trauma • Can be used in more complex populations to inform formulation and treatment planning in relationally focused interventions	• Clinician administered interview, requiring specialist training to deliver, with associated costs • Lengthy to administer (60 mins) • Requires specialist training in use of coding manual as well as significant time-commitment to interpret
Pregnancy Interview Revised (PI-R; Slade et al., 1987, 2002, 2011)	• Provides rich account of the expectant parent's reflective capacities, indicating the potential relevance of a mentalization based intervention to support the parent-infant relationship following birth • Can be used in more complex populations to inform formulation and treatment planning, particularly with respect to services offering mentalization-based interventions	• Clinician administered interview, requiring specialist training to deliver, with associated costs • Lengthy to administer (60-90) • Requires specialist training in use of coding manual as well as significant time-commitment to interpret

Strengths and limitations

To our knowledge, is the first review to synthesise what is known about the psychometric and clinimetric properties of instruments measuring the quality of the maternal-foetal relationship across four theoretical constructs, providing recommendations for use in clinical practice. One limitation of this systematic review is the possibility that not all instruments for evaluating the maternal foetal relationship were identified. In attempts to ensure that we identified all studies evaluating the psychometric properties of such tools, their names and acronyms were included as search terms. However, owing to the need to exclude translations of measures or self-report measures investigated in different languages, literature reporting on the Child Concept Questionnaire ([CCQ] Gloger-Tippelt, 1983) was omitted.

Additionally, a comprehensive evaluation of other areas of feasibility has not been reported, including information reading level required and length/cost of training for interview-based measures. Unfortunately, this information was not available in any paper selected for review, although it is an important aspect of feasibility, with the latter potentially informing more specific recommendations relating to interview measures. Similarly, despite efforts to contact authors of instruments included in this review, the authors of the IRMAG-R could be reached to ascertain its availability and cost. Finally, whilst the QATSSD was chosen as a quality-rating tool as it has the scope to assess studies of a range of methodologies included in the review, there is a need for the development and evaluation of quality rating tools that specifically assess studies reporting on both psychometric and usability data. Given that the QATSSD does not have an item for the latter, the in/exclusion of important information in this regard was not reflected in the final quality score.

Recommendations for further research and clinical practice

Further research should continue to evaluate the psychometric properties, availability and feasibility of using these tools such that clearer comparisons can be made of their psychometric properties where information is currently lacking. The development of the P-PRFQ is promising with a view to broadening the study of antenatal reflective functioning to large populations where the resource-intensive use of interview-based instruments might otherwise limit the scope of their application. Work should also be undertaken to compare the predictive validity and strength of association between instruments measuring each of the four constructs and postnatal parent-infant outcomes, with a view to establishing which are the most helpful in identifying mothers in need of support. Additional efforts should be made not only in early identification through use of psychometrically robust screening tools, but also to ensure that appropriate support is both available and accessible. Services may want to consider a stepped care model in the support offered to mothers at-risk, with psychoeducational materials, guided self-help and support groups followed by more intensive provision such as mentalization-based therapeutic programmes (Sadler et al., 2013). This may help demarcate appropriate care pathways, from provision within primary care to referral to specialist services. Accordingly, future directions for research include establishing clear clinical cut-offs and criteria within these measures to identify mothers at-risk of experiencing difficulties in their relationship with their unborn baby.

Conclusion

The quality of the maternal-foetal relationship has important implications for parent-infant interaction and infant attachment outcomes postnatally, which in turn have significant longer-term effects on child development. This suggests a need for further research into instruments measuring the MFR that can be used to enrich current understanding of risk and transmission pathways. Advances in this understanding represent an important opportunity to

anticipate risk of difficulties in the parent-infant relationship and thereby offer preventative intervention. Such interventions can disrupt the intergenerational transmission of attachment difficulties, thus scaffolding socio-emotional development and health in the developing child. However, this prospect depends on successful translation of theoretical understanding into clinical practice. The present review identifies a number of psychometrically robust, clinically feasible screening tools to identify difficulties in the MFR that may be used by clinicians working in the prenatal period.

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SIP: Supporting the transition to remote service delivery within a CAMHS Neurodevelopmental Conditions Pathway during COVID-19

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Proposed journal: This journal has been written and formatted for submission to *Journal of Autism and Developmental Disorders*, for its focus on neurodevelopmental conditions across the lifespan. It includes reports on mental health services effectiveness and invites submissions from a range of methodologies.

Background. The COVID-19 pandemic necessitated that mental health services make the rapid transition to remotely-delivered telehealth assessment, support and intervention. Whilst formal guidance on how to approach this task with neurotypical populations has been developed, there is no existing framework on how to adapt telehealth to effectively meet the needs of young people with neurodevelopmental conditions.

Aims. The following study aimed to assimilate existing guidance on telehealth practice with clinicians' experience and expertise within a CAMHS NDC Pathway. The objective is to develop a working guidance document that offers a framework for best practice in remote service delivery, as well as reviewing organisational features of the service which have supported this transition.

Design. A mixed methods design was undertaken using a PDSA cycle to 1) review existing literature and guidance frameworks on telehealth, 2) conduct in-depth semi structured interviews with clinicians and managerial staff within the NDC Pathway, 3) develop a guidance document for online service delivery to children and young people with NDCs, 4) receive feedback from the service stakeholders, developing a set of recommendations for continued service improvement.

Results. An NDC-specific framework was developed to capture specialist skills and techniques needed for delivery of remote assessment and intervention within the service. Exploration of issues related to clinical operations reflected themes around the importance of flexible clinical protocol, attendance of consultations, risk management and accessibility. A review of organisational factors in the adjustment to remote working highlighted the democratic and iterative process of change, based on collaboration and feedback.

Key words. *Neurodevelopmental conditions, Autism, ADHD, remote working, children and young people*

Introduction

The restrictions imposed by lockdown under COVID-19 have created dramatic shifts in operational policy of NHS services to continue to provide mental health care via remote service delivery. One population that has been identified as particularly vulnerable to the increased stress, pressure and change of routine caused by lockdown are children and young people with neurodevelopmental conditions [NDCs] (Ameis et al., 2020; Asbury et al., 2020; Manning et al., 2020; Nonweiler et al., 2020). This has made the continued provision of high-quality mental healthcare for this population of particular importance. Evidence demonstrates the differing needs of individuals with NDCs (Palisano et al., 2017). However, as yet, telehealth guidance is only available for neurotypical populations. The current study integrates theory and a review of clinical practice on suitable adaptations to intervention for young people with NDCs alongside existing telehealth guidance. From this, it aims to produce a guidance document that summarises adaptations for telehealth practice within a CAMHS NDC-Pathway.

Service model and context

Healthcare policy over the past decade has emphasised the importance of tailoring service delivery to the individual needs and preferences of patients and their families (Department of Health, 2011; Department of Health, 2013; Jivanjee & Kruzich, 2011). The Oxfordshire CAMHS Neuro-Developmental Conditions Pathway, established in November 2018, provides specialist assessment and intervention for children and young people aged between five and eighteen with Autism Spectrum Condition (ASC) and/or Attention Deficit Hyperactivity Disorder (ADHD). Children and young people referred to the service require highly individualised support that is tailored to their particular needs and strengths. In addition to diagnostic and cognitive assessment, the service delivers an array of interventions

informed by the National Institute of Clinical Excellence (NICE) guidance for NDCs (e.g. NICE CG87; NICE CG128) as well as BPS guidance (DCP, 2018). Provision by the NDC-Pathway includes psychoeducational group programmes aimed at either parents or young people, as well as Positive Behaviour Support (PBS) and individual Cognitive Behavioural Therapy (CBT) adapted in line with NICE Guidance for NDCs (NICE CG170 2013, p. 22). The service aims to be appropriately responsive to heterogeneity in the autism population, applying recommendations flexibly within its clinical practice (Cooper, Loades, & Russell, 2018; Spain & Happé, 2020; Walters, Loades, & Russell, 2016).

The transition to remote working during COVID-19

Recent research has demonstrated the profound impact of COVID-19 lockdown on many children and young people with NDCs and their families (Asbury et al., 2020; Pearcey, Waite, & Creswell, 2020; Manning et al., 2020). Within this context, the Oxfordshire CAMHS NDC-Pathway, along with other services across the country, were tasked with rapidly adapting their service model for remote-delivery. In the absence of existing telehealth guidance in NDC populations, adaptations were predicated on clinical expertise, drawing on the knowledge and experience of practitioners from a range of professional backgrounds. A multidisciplinary taskforce within the team developed the Oxford Autism Assessment Tool (OVAAT). This is an evidence-based, DSM-5 acquiescent online observational assessment used to gather information about the presence or absence of autistic symptoms in less-complex Autism assessments (i.e. where screening, school, and parental information is highly indicative of Autism). The assessment is adapted for each young person to maximise their capacity to engage. Other forms of assessment and intervention deemed suitable for telehealth delivery included developmental histories, extended assessment, consultations, and remotely-delivered CBT. Cognitive assessments, second opinion and more complex autism

assessments requiring an ADOS-2 were postponed. Whilst the service initially focused its telehealth provision on adapted diagnostic screenings and individual support, adaptations were made to parent-facing ADHD and Autism psychoeducation groups. These consisted of content delivered via pre-recorded video clips, followed-up with Q&A sessions.

Telehealth interventions with children and young people with NDCs

Systematic reviews of telehealth studies with young people with autism and ADHD respectively show that telehealth is associated with high levels of satisfaction, yielding symptomatic and functional improvement (Boisvert, Lang, Andrianopoulos, & Boscardin, 2010; Spencer, Noyes, & Biederman, 2020). Further, there is a relative equivalence in outcome and acceptability between telehealth and face-to-face service delivery (Sutherland, Trembath, & Roberts, 2018). Opportunity to access services remotely may, in some cases, be preferable for both the young person with autism and their families (Soares, Johnson, & Patidar, 2013; Valentine et al., 2020). From a service perspective, telehealth provides an opportunity for more naturalistic observations (Hilty, 2010) and opportunity to offer more flexible hours, reducing non-attendance rates (Bashshur, Shannon, Bashshur, & Yellowlees, 2016). This might suggest that the adoption of telehealth services could be integrated into routine clinical practice as part of a hybrid model post-COVID-19 (Smith, Ostinelli, Macdonald, & Cipriani, 2020; Valentine et al., 2020). To our knowledge, there is no existing literature describing adaptations to services associated with telehealth protocol in Autism.

Available telehealth guidance

Telehealth intervention requires consolidated guidelines in order to support the delivery of consistent, high quality care (Balcombe & De Leo, 2020). The British Psychological Society (BPS) have produced guidance for telehealth practice with children and young people, specific to the client's age and developmental level (e.g. DCP, 2020).

Meanwhile, a recent systematic review of the literature assimilated existing guidelines on telepsychiatry to develop a written checklist of best practice (Smith et al., 2020). Whilst the majority of guidance here is aimed at engaging neurotypical young people (e.g. ‘maintain eye contact’), the review includes some brief recommendations for remote assessment of autism. These suggest pacing the session according to attention span, supplementing verbal communication with resources that facilitate communication, drawing on input from family/caregivers and making necessary adjustments to therapeutic language to aid engagement. Another competence framework offers a detailed and comprehensive overview of requirements for digital practice (Pote et al., 2020). This 69-item framework helpfully partitions competencies into ‘knowledge’ and ‘ability’, covering both clinical skills and organisational practices. The breadth of skills covered provides a useful benchmark for services looking to evaluate the appropriateness of remotely-delivered clinical operations. However, there is currently no rigorous framework for adapting telehealth provision for NDC populations, suggesting this is an area that requires review so that necessary adaptations can be undertaken to ensure that telehealth is as accessible and effective as possible.

Theoretical framework

Given rapid changes to the landscape of service delivery, there is a need to explore models informing organisational adaptation. This has been approached at different levels within services, relating to assessment and intervention, as well as adaptations specific to the needs of the target population. Organisational Development Theory (ODT) is founded on Lewin’s three-step change model (Lewin, 1951) which involves (1) outlining and critically evaluating existing practices (unfreezing), (2) formulating and transitioning towards new practices (moving) and (3) establishing new practices (refreezing). Change processes may be limited to the latter two phases where a rapid reconfiguration of resources and practice takes

place (Weick & Sutcliffe, 2007; Weick, Sutcliffe & Obstfeld, 1999). In such cases, a review following adaptation may be needed, with a view to discerning what is working well and what could be improved (Rhydderch, Elwyn, Marshall, & Grol, 2004). Initiatives that are driven by ODT prioritise the involvement of stakeholders in formulating change. In this context, ODT theory will draw on clinician perspectives to review changes following implementation, with view to generating recommendations related to remote working.

Rationale for service improvement project, aims and research questions

Whilst there is guidance available on adapting mainstream CAMHS service provision for remote-delivery, no such guidance exists for NDC populations. Nevertheless, the specific needs of neurodivergent populations suggest that additional considerations should be made. As remote working continues, service management has identified a need to review these adaptations to clinical provision, and integrate these where necessary with existing evidence, expert consensus and stakeholder input. The objective for this study is to develop guidance to inform effective adaptations that can be made to remote working with this population.

Research questions

- 1) What adaptations to clinical engagement and technique should be recommended to clinicians who are working remotely with children and young people with NDCs?
- 2) What issues do services need to consider when making adaptations to clinical operations for the purposes of remote working in this population?
- 3) What approaches at an organisational level can facilitate the team's adaptation to online working?

Method

Design and procedure

A mixed-methods research design was used, in which semi-structured interviews were analysed with content analysis to derive quantitative and qualitative data on the nature and frequency of adaptations made to support remote working in the service. Approval for the project was granted by the Quality and Audit department within Oxford Health Foundation Trust. The PDSA model of service improvement was followed to support an iterative process of review and change, with this project serving as the first cycle (Figure 1).

Recommendations to support telehealth delivery in NDC populations were generated in the form of action points.

Plan	i. Review of existing literature and frameworks on telehealth ii. Review of service data six months pre- and six months during COVID-19 lockdown [referral demographics and presenting problem; appointment data including contact hours and attendance patterns pre- and post-COVID-19] iii. Selection of clinically focused guidance document to inform analysis
Do	i. Consultation with ‘core’ panel using interview schedule based on literature and data review
Study	i. Deductive analysis of data using established remote practice framework ii. Inductive analysis of data to create NDC-specific remote practice framework
Act	i. Development of an operational guidance document to support services in delivering remote assessment and intervention to children and young people with NDCs ii. Share this guidance document with stakeholders for feedback via focus group with team iii. Based on feedback make any relevant recommendations to the service relating to clinical operations and ongoing quality improvement initiatives

Figure 1. Description of PDSA cycle

Participants. All members of the NDC service were informed about the project.

Representatives from each profession were invited to participate (see Appendix A). Eight members of the team, including management, took part in semi-structured interviews lasting between 33 and 74 minutes in length, exploring their experiences of adapting assessment and intervention to remote-delivery within the NDC-Pathway. The interview schedule is available in Appendix B.

Analysis. A combination of deductive and inductive content analysis (CA), using a directed and conventional approach respectively (Hsieh & Shannon, 2005; Potter & Levine-Donnerstein, 1999) was conducted on all data using NVivo Version 12 (QSR International, 2018). Analysis was undertaken from a critical realist approach, acknowledging contributions of subjectivity and context on data collection and analysis (Leung & Chung, 2019; McEvoy & Richards, 2003). The Digital Skills Competency Framework (DSCF) was used as a framework for deductive CA, with inductive codes drawn from the data to summarise NDC-specific competencies (Q1 and Q2) and to capture organisational factors (Q3) that supported the transition to remote working in the service. Inductive CA allowed for categories not already represented in the DSCF to arise from the data.

Preliminary audit of service data

An audit of service data from June 2019 to March 14th 2020 and from March 15th 2020 to December 31st 2020 was conducted covering ten months prior to and following the impact of COVID-19. This was carried out prior to the main data collection demonstrate the profile of changes in service operations that required further investigation.

At the time of reporting, N=2696 young people had referrals open on the NDC-Pathway caseload (N= 1915 male). The majority were White British (N=1788). Of the

N=878 with a diagnosis, most had a primary diagnosis of Autism (N= 505) and/or an attentional disorder (N=199). Ages ranged from 4 to 18 years old, with a mean of 10.95 ($SD=3.07$) for males and 11.69 ($SD=3.15$) for females. See Appendix C for more detail.

Referral data. An audit of referral data, shown in Figures 2 and 3, demonstrates a decrease in referrals from N=904 ($M=90.4$, $SD=23.5$) before COVID-19 to N=656 ($M=65.6$, $SD=17.4$) during COVID-19.

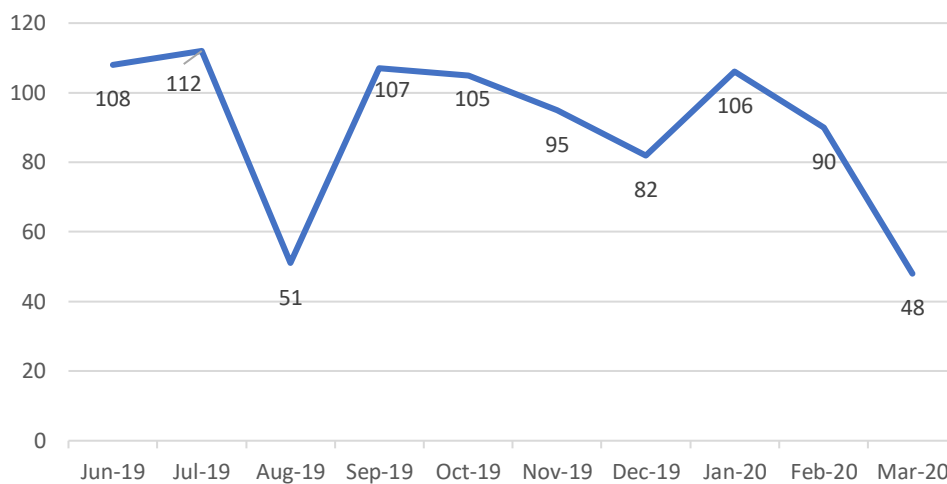


Figure 2. Referrals data for the **ten months prior** to the COVID-19 pandemic

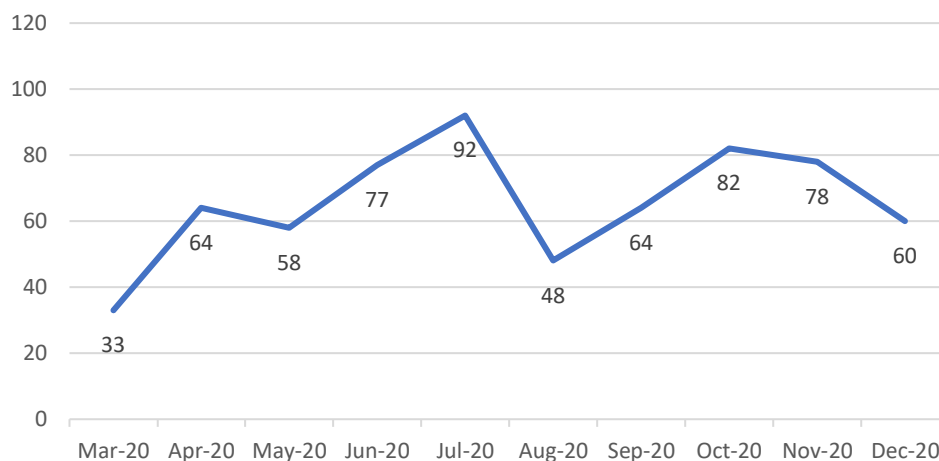


Figure 3. Referrals data for the **ten months during** the COVID-19 pandemic

Appointment data. A summary of appointment data is presented in Figures 4 and 5. Before COVID-19, more face-to-face appointments were held (N=3,539 face-to-face vs. 2,926

remotely-delivered, 21% difference). In the first ten months of COVID-19, the majority of appointments were conducted remotely (N=639 face-to-face and N=5,428 remotely-delivered, 88% difference). This shift in appointment delivery highlighted the need for formal guidance on routine telehealth practice.

There were N=410 fewer appointments held during the first ten months of COVID-19 than previously. A greater proportion of these were assessment (26.25% during-COVID vs. 21.04% pre-COVID) and review appointments (44.44% during-COVID vs. 33.32% pre-COVID). See Appendix D for more detail.

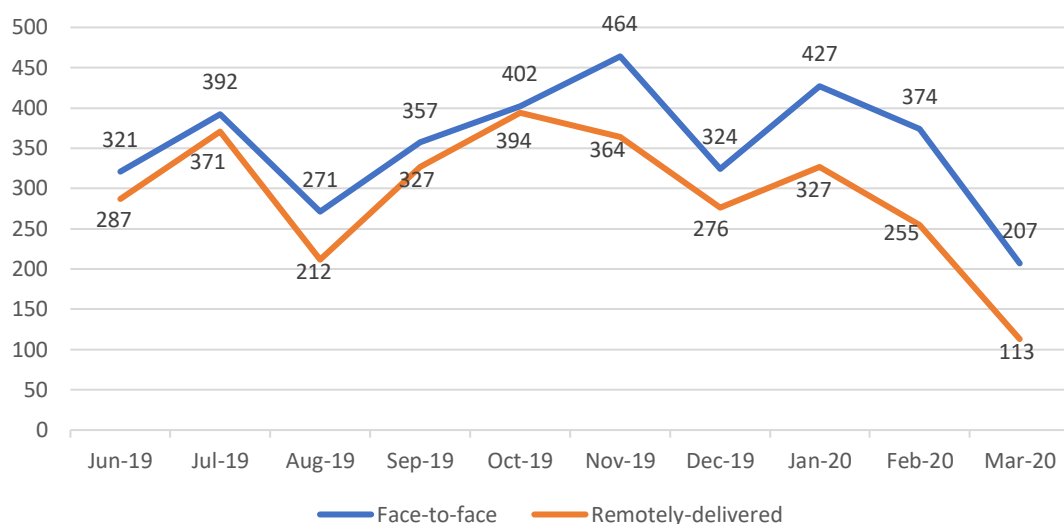


Figure 4. Appointment data for the **ten months prior** to the COVID-19 pandemic

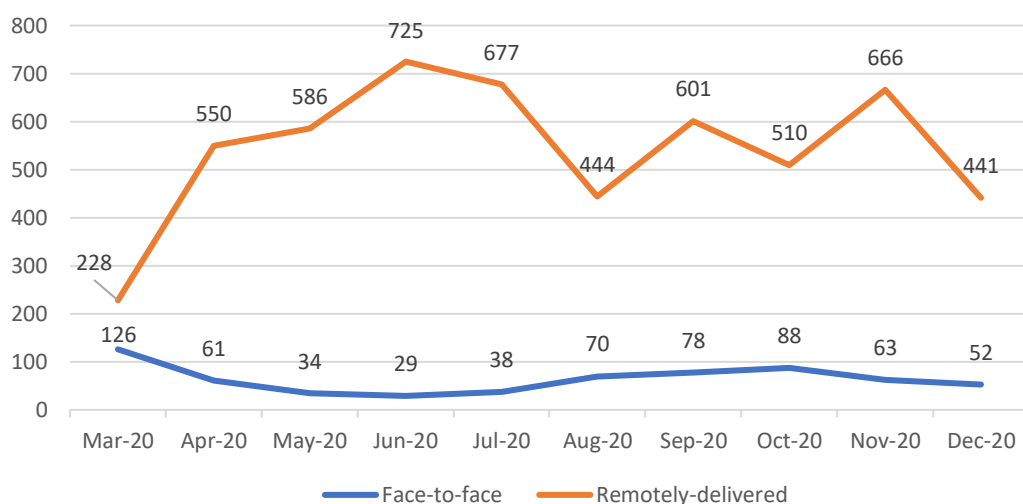


Figure 5. Appointment data for the first **ten months** of the COVID-19

Appointment attendance. Of the N=6,429 appointments held in the ten months before COVID-19, 90.7% were attended. This increased to 92.9% in the ten months during COVID-19, when appointments were conducted remotely.

Stakeholder feedback on the Oxford Autism Assessment Tool (OVAAT)

A recent audit of the OVAAT, employed to conduct Autism assessments remotely, sought feedback from clinicians, young people and parents (Stark, 2020, see Appendix E). Findings showed high tolerability and acceptability of the assessment, with clinicians rating engagement at 8.03 out of a maximum of 10. Feedback from young people (N=15) suggested that the majority found the OVAAT ‘fun’ (87%). Parents reported that it produced an accurate portrayal of their child (N=14) and that they expected that they were more comfortable doing the assessment at home. Nine out of 12 parents said they ‘definitely would’ recommend the style of online assessment to a friend. See Appendix E for more detail.

Results

1.1 Digital Skills Competency Framework

The Digital Skills Competency Framework (DSCF) was selected for the first stage of coding on the premise that it would describe the ways in which NDC-Pathway remote-working follows existing telehealth guidance, as well as the degree to which such guidance is sufficient. It was applied to interview transcripts, with coding saturation for each of the Digital Skills Competencies supplied in Appendix F.

A total of 48 of the 69 items from the DSCF were coded for within the NDC-transcripts. The most well-represented area discussed within the framework was Assessment and Formulation, specifically relating to opportunities and limitations of telehealth pertaining to clinical engagement (N=31).

“I feel like I work harder online to keep them engaged... So, how can I engage this young person to be in this space with me? In a way that feels okay for them, and for me. Flexibility, definitely, I think is important.” Clinical Nurse Specialist

Another area commonly touched upon was the ability to assess and match client needs, interests and ability to suit remote working (N= 28).

“Before we would just assume that it was okay for someone to come through the door and sit with us without asking “is this room ok, is the echo ok, have you had problems coming in because of transport?” Now we are asking all of those contextual things to check that we are getting it right.” Service Manager

Clinicians commented on the opportunities of offering remote services for this client group particularly as relating to improving access (N= 23). Crucially, they noted the need for competencies informed by a specialist knowledge of NDCs. This prompted the development of specific guidance for telehealth delivery with young people with NDCs.

1.2 Clinical engagement and technique in remote work with children and young people with NDCs

Five categories of adaptation were identified in clinicians' narratives of delivering remote assessment and intervention to young people with NDCs, with theoretical knowledge described as a prerequisite to inform a flexible and child-centred approach (Table 1). These illustrate what adaptations should be recommended to clinicians to optimise remote working with this population.

Table 1. Neurodevelopmental Conditions Digital Skills Competency Framework (NDC-DSCF)

NDC Specific Competencies for Remote Working	Core Skills	Example quotes	Relevant DSCF Competencies
Knowledge of issues relating to the surrounding complexity in NDC populations that might present a barrier to remote engagement	- Assessment of NDC-relevant factors that may be influencing engagement and formulation of potential intervention strategies to support young person to attend session - Awareness of and ability to set expectations about the nature of sessions, preparing young person in advance for remote working and considering their needs and preferences	<i>“It’s again having those conversations about – “does it feel okay to you to do it this way?” Rather than that, and, you know, obviously we need to work on it ourselves, but as it’s just being perhaps more open regarding these barriers than we would before. Before we would just assume that it was okay for someone to come through the door and sit with us without asking “is this room ok, is the echo ok, have you had problems coming in because of transport?” Now we are asking all of those contextual things to check that we are getting it right.”</i> Service Manager	Ability to practice digitally, including establishing and maintaining a therapeutic alliance Knowledge of opportunities and limitations of technology related to clinical engagement and the therapeutic relationship
Ability to identify and work with issues relating to complexity that might present a barrier to remote engagement, e.g. motivating session attendance and adapting offer of intervention in cases where the young person is	- Ability to motivate engagement in remote intervention using behavioural strategies - Ability to collaboratively involve the young person in planning and adapting remote sessions to aid engagement - Flexibility with regard to intervention delivery, switching from young person to parents where necessary and/or using parent-involvement to support remote intervention - Ability to judge when face-to-face work is necessary for effective clinical	<i>“Perhaps the element of the interventions, which has shifted a bit more is the emphasis on incentives and rewards, both to kind of commit to the, you know, the online sessions, but also in terms of, you know, practising strategies, self-monitoring work kind of stuff, is probably increased a bit more.”</i> Clinical Psychologist <i>“Probably handing over some of that the responsibility to the young person, for them to help shape how that session is going to be. Because, you know, it might be that they say that, and they don't want to do the thing that I planned themselves. They don't want to work on a gingerbread man. It's like,</i>	Ability to assess and match client needs, interests and abilities to suit engagement in digital modalities Ability to adapt psychological intervention to the needs of clients from a

struggling to engage or there are added risk concerns	practice, including aspects of assessment, formation of therapeutic relationship, risk assessment and addressing safeguarding concerns	<i>well, well, okay, then, what? How do you want to use this space? What should we do together today?"</i> Clinical Nurse Specialist <i>"From a safeguarding point of view, I think it's a lot safer doing face to face reviews. And yes, some of the reviews that I'm doing now over the phone, the kids at schools, I'm just chatting to the parents and they're given me objective feedback, I'm not getting the subjective feedback. So there's definitely been... that's a bit concerning. That is, that has been a pattern that I've seen since kids come back to school, I guess, is that parents feel that they can, with that we can do a review of the kids absent from."</i> Nurse Prescriber	range of ages and abilities Knowledge of opportunities and limitations of technology related to client factors Ability to assess a client's suitability for online interventions, revising this as necessary on an ongoing basis.
Knowledge and awareness of attentional profile of young people with NDCs and how this might affect concentration and collaborative engagement during remote work	- Knowledge and awareness of influence of setting and remote format on attentional capacities - Awareness and sensitivity to issues relating to transitions when attending remote sessions, particularly relating to blurred boundaries between settings and tasks - Understanding of need to triangulate information to ensure accurate assessment of attentional deficits	<i>I think that for a lot of young people not having such clear distinction between different roles or demands on them (it blurs boundaries)... I'm quite flexible in whatever feels like it's going to be helpful or needed... So this young person I was just mentioning that gets up very frequently, you know, depending how she's feeling... I can reflect that back to mum and say, 'Look, you know, she's just had to transition into seeing me, clearly, that's tricky for her, and she's needing you there'. So I think it can be useful. Again, and this isn't the kind of stuff we might see in clinic."</i> Clinical Nurse Specialist	Ability to assess and match client needs, interests and abilities to suit engagement in digital modalities Ability to integrate and use creative, non-verbal, visual digital tools to complement online psychological interventions
Ability to adapt assessment and intervention to take account of young	- Flexible use of 'toolbox' of shorter activities to maximise likelihood of engagement	<i>"Coaching parents a bit and some of the things that they can do to increase attention is helpful, you know, as I say, reducing distractions, perhaps giving them a drink or perhaps, you know, giving them their snack..."</i>	

person's attentional needs, maximising child's capacity to attend via flexible application of session content	- Use of a variety of strategies to maximise joint attention and encourage engagement, e.g. use of novelties in client/clinician's environment, remote participation in shared off-screen activities, share screen function - Use of coaching to parents to support child's attentional capacity - Consideration of appropriate session length depending on attentional capacity - Consideration of whether 'breaks' within assessment/intervention will support young person's abilities to engage or could disrupt process - Consideration of optimal number of sessions to derive clinical benefit - Ability to support young people and families to understand and manage the effects of transitions in remote work - Ability to adapt to young person's learning style, flexibly employing multimodal learning tools to aid engagement	<i>So just experimenting a bit with those things. But yeah, that's... I suppose I've, I have assessed a little bit as to whether does it work better if we drop the screen and just... if they just hear my voice, so I've experimented a bit with that as well about taking the camera off because some of them are distracted by the camera looking at themselves and doing little movements and doing little shows for themselves..." Occupational Therapist</i> <i>"I think it is the variety in the work that makes it keeps people focused and gets people to attend... I think that kind of multimodal learning is essential. Primarily for attentional reasons, I think if you keep shifting near the medium you're using, I think that's even more important in this context." Clinical Psychologist</i>	Ability to adapt psychological intervention to the needs of clients from a range of ages and abilities Knowledge of opportunities and limitations of technology related to client factors
Knowledge and awareness of socio-communicative profile of young people with NDCs and how this might compound	- Awareness of social communication and reciprocity profiles in Autism and how traits may present in a remote format - Understanding of importance of setting expectations for remote working,	<i>"So within the team, we've talked about, you know, thinking about not sitting dead on or like really too close, and because that's not how it would be if you were in a session with someone, so trying to think about how you might sit, turning yourself to the side slightly. And I always try and make sure that I am not always looking at the screen. I try and look away quite</i>	Ability to assess and match client needs, interests and abilities to suit engagement in digital modalities

difficulties with engagement during remote work, as well as present opportunities for intervention	- including relating to flexible use of technology to communicate - Awareness of and sensitivity to effects of positioning on camera, considering angle so as to minimise experience of intrusiveness/intensity in social contact	<i>often, because I think that's something quite normal that I would do in sessions anyway."</i> Clinical Nurse Specialist <i>"I'm certainly setting sessions up beforehand to help manage expectations about how it will be and let the children know that although it will come through like this, that we can turn the camera off, we can just listen we can just do it with our voices. So I suppose it's about setting up with the children to say "we'll have a go but it's okay. And even if we just do five minutes to meet each other, and that's all we do". So I did that with a child where all it was about was meeting me, nothing more than that."</i> Occupational Therapist	Ability to adapt psychological intervention to the needs of clients from a range of ages and abilities
Ability to adapt assessment and intervention to take account of young person's socio-communication needs, minimising experience of intrusion and amplifying opportunities for social learning	- Use of a variety of strategies to maximise joint attention and encourage engagement, e.g. use of novelties in client/clinician's environment, remote participation in shared off-screen activities, share screen function - Ability to build rapport through engaging with young people via their environment, e.g. encouraging child to share items of interest, relationships with pets etc. - Awareness of and sensitivity to difficulties with using video; use of young person's responses to video to enhance awareness self-regulation in social interactions - Use of visual cues on screen (e.g. session timer) to enhance awareness of and learning around social processes such as turn taking - Awareness of and ability to sensitively address boundary issues that may arise from remote working (for example,	<i>"I've got a couple of young people who, you know, they engage quite well, virtually. But sometimes that's just a bit too tricky. Or in a session, sometimes they start to shut down, but they're able to type something or use emojis or gifs, or, you know, and, and there's something about the flexibility and having some visual ways to communicate as well as the text function. That's helpful. Because obviously, when you're in a clinic space, you might be able to write something down, or you might have a few cards, you know, standard emotion cards or something. Actually, they got a whole range of different normalised gifs that they might use to communicate something to you in that moment. Rather than having to find something different, and not normalised to tell you that they're finding something difficult."</i> Clinical Nurse Specialist	Knowledge of opportunities and limitations of technology related to client factors Ability to practice digitally, including establishing and maintaining a therapeutic alliance Knowledge of opportunities and limitations of technology related to clinical engagement and the therapeutic relationship

	social ‘rules’ around clothing/nakedness) - Creative use of text function, gifs or other non-verbal communication methods for young people who struggle with speaking on screen		
Knowledge of sensory profile in young people with NDCs and awareness of how this might be obscured by remote working or present opportunities for intervention within the session	- Awareness of difficulties picking up on sensory behaviours and explicit enquiry into any that might be shown off camera - Awareness of and support given to help young person to identify sensory strategies that can be used in/outside of session to self-soothe	<i>“I think as an OT, actually, I've really enjoyed seeing people's homes because that's given me a great insight to say, Oh, I can see that. Can you do that? Can you do it? Can you move him there or what about if you pop him between the cushions or?... So asking the parents to try different things... And as parents make adjustments, and it might be that I want to try out, putting their ear defenders on to see if they could concentrate better with just my voice rather than coming up screen and changing the chair they were sitting on to the outside so that they weren't kind of all over the place and just prepare in before the session. So making sure that they still had their fiddle objects on the table. And also... to make sure that we were mirroring each other. So I would have my fidget too... and even doing the same activity to send to the pair. Can you get together these resources before we go online?” Occupational Therapist</i> <i>“I think it's a bit easier to allow them, not allow them, but enable them to have the things around them that helped them manage to get through a session, whether that's, you know, sensory related, or, you know, just feeling more comfortable in their own space.” Clinical Nurse Specialist</i>	Ability to assess and match client needs, interests and abilities to suit engagement in digital modalities Ability to adapt psychological intervention to the needs of clients from a range of ages and abilities Knowledge of opportunities and limitations of technology related to client factors
Ability to adapt assessment and intervention to take account for young person’s sensory profile, using opportunities afforded by young person’s presentation and context to inform and supplement intervention	- Consideration and modification of any sensory stressors in young person’s environment that may impact on them, drawing on parents’ support to facilitate - Use of support from parents to prepare sensory-based materials prior to the session to aid engagement		

Knowledge of emotion regulation difficulties that may impact engagement with remote work	- Awareness of the ways in which remote working might influence the presentation of emotional dysregulation in sessions - Identification and scaffolding of young person's adaptive emotional regulation strategies within their home environment	<i>"So I think a lot of it was about checking with the young person and with their family about their preference and what they could do... trying to facilitate whatever they might need in order to do it this way. So changing length of sessions, time of day, or even day that I was offering to have a contact with them. And just allowing them more and even more space within the session to be dysregulated, I guess."</i> Clinical Nurse Specialist	Ability to assess and match client needs, interests and abilities to suit engagement in digital modalities Ability to adapt psychological intervention to the needs of clients from a range of ages and abilities
Ability to adapt assessment and intervention to take account of young person's difficulties in regulating their emotions, using opportunities afforded by young person's presentation and context to inform and supplement intervention	- Preparation of strategies/resources in place to keep young person safe in their environment (e.g. teaching emotion regulation skills, presence of trusted adult nearby) - Creative use of emojis, gifs or other non-verbal communication methods for young people who struggle with identifying and sharing their emotions - Ability to judge appropriate response to challenging behaviour shown during remote work, supporting parents to manage the incident safely and offering a debrief to collaboratively formulate triggers and possible interventions	<i>"I think when you're seeing challenging behaviour, which parent kind of may well need to deal with. I think it's more complicated and it might be call has to end and you have to kind of, you know, touch base later on. Because, you know, there might be something more urgent. Like it could be obviously could be urgent if the child is highly distressed, but not showing challenging behaviour, as well. But typically, if a child has, you know, become so agitated, that they hurt themselves or other people or when parents need to do something, but ultimately, it's, you know, providing the parents with guidance and support, you know, whether that's immediately or coming back to them later."</i> Clinical Psychologist	Knowledge of opportunities and limitations of technology related to client factors Knowledge of opportunities and limitations of technology related to clinical engagement and the therapeutic relationship

2. Features of clinical operations when working remotely with children and young people within the NDC-P

Developing flexible clinical protocol for remote-delivery. Firstly, the team noted how the design and application of the OVAAT, in addition to therapeutic protocol, needed to be flexible to maximise young people's engagement.

"You can do them in different orders... Some children are better with direct questions. Some are better with a more practical element. You ideally use your judgement in how the child is doing to decide what order you do the activities in..." Speech and Language Therapist

"A lot of it was about checking with the young person and with their family about their preference and what they could do... trying to facilitate whatever they might need in order to do it this way." Clinical Nurse Specialist

Second, whilst the information collected via the OVAAT was seen to be comparable to face-to-face ADOS assessment, clinicians highlighted a greater emphasis on theoretical knowledge to conduct the assessment with the requisite flexibility, as well as triangulation of information from other sources.

"I think you need even more secure knowledge. You're going more on your clinical experience and knowledge. You need both... to be evidence-based, you need the information." Speech and Language Therapist

Differential effects of remote working on attendance. Clinicians spoke about the benefits of remote working in NDC-settings, for example, giving young people permission to decline appointments and using this therapeutically via parent-support sessions, as well as having a window into the child's home environment, resources and routines.

"Now, obviously, you give people a bit of freedom because you want a bit of genuine courage. But if it's having to become "you've got to do this", then we can offer a different solution at that point... I think that makes a big difference." Lead Clinical Psychologist

It was suggested that the service continues to offer remote appointments to facilitate access for hard-to-reach populations.

“[It] isn't great for young people with neurodevelopmental difficulties - to meet a stranger, have no escape, and then go back home. [It] means that we can offer kids things in an environment which suits them.” Lead Clinical Psychologist

On the other hand, limitations of remote working were highlighted, related to the young person's presentation and/or the therapeutic relationship. Clinicians reflected that in such instances, they visited the young person face-to-face.

“There's a couple of young people on the waiting list for psychology, and that will need to be face-to-face because it's trauma-based intervention” Occupational Therapist

“A girl I saw... said to me ‘the one thing I'm really worried about is ending with you... I can't do it online... I need it to be face-to-face’... So for her it was really important for that relationship to be ended in that way.” Clinical Psychologist

Finally, clinicians commented that multiagency meetings were often better attended than when held face-to-face, improving the process of information sharing.

“The attendance at meetings and get to all professionals together has been hugely improved... That's been really effective because... you've got social care, education, third sector and comes together making decisions.” Occupational Therapist

Reviewing challenges in assessing and managing risk remotely. Several clinicians highlighted greater difficulties conducting risk assessment. Comments indicated a need for in-person contact to identify more subtle risk indicators (e.g. bruising, dishevelment, odour) and/or monitor young people and families where there was an established risk profile.

“With risk, a lot of it is how I feel and how well I know the family.... A lot of it is my intuitive feeling... I think the more clinical experience you have [and] the number of concerns you've got...” Consultant Psychiatrist

Identifying access and resourcing issues for families. Clinicians were mindful of issues around inequality that might preclude families from accessing telehealth. They highlighted

that paper resource packs should be sent to families who do not own a printer, questioning the utility of electronic packs when many families had access to only one device.

“I think we assume everybody has access and they don't. Or if you've only just got a computer and it's not in your way of working... it can be incredibly overwhelming to suddenly be expected to click on a link and understand how to do it all.”

Occupational Therapist

3. Organisational issues related to remote working

Top-down versus bottom-up: supporting professional autonomy. Several clinicians described having autonomy to shape their professional role and contribute to service innovations. This was discussed as a strength, for instance, when developing protocol for remote working.

“I think we've also set up a culture in the team. That means that everybody feels they have a voice and everybody is valued. In some ways that there is a hierarchy but in other ways, we're quite flat.” Consultant Psychiatrist

A focus on supporting the team to function safely and effectively. The leadership team reflected on the balance of offering as timely a service as possible and protecting staff wellbeing, for instance via reflective practice and check-ins.

“We focused absolutely on keeping the team and our patients safe... So we very quickly set up a check in system in the morning and a check in system in the evening” Consultant Psychiatrist

Nonetheless, clinicians noted the continued pressure in holding boundaries when they were working from home, without the same in-person contact with their colleagues/supervisors to support them in holding complex clinical material:

“I think it's made it harder to have joined up thinking about the case. [It] takes a bigger toll on your workload, because you're having to book in a time to chat rather than just catch someone” Clinical Psychologist

Prioritising continued adaptation to changing circumstances. Clinicians discussed the recursive process of adaptation, shaping clinical practice with feedback from service users,

discussions in the team and consultation with commissioners, “*tweaking [the OVAAT] in line with what [feedback] people gave us*” (Service Manager). They emphasised a need for continual adaptation given changing circumstances, as well as flexibility within their clinical role to work in a person-centred manner. Further quotes for Results sections 2 and 3 are available in Appendix G and H.

4. Service Feedback

On the 10th of February 2021, a meeting was held with the service to share findings of the study and consider recommendations for the next stage of the PDSA cycle. Table 2 provides a summary of key results.

Table 2. Summary of key findings

Question	Findings
1. What adaptations to clinical engagement and technique should be recommended to clinicians who are working remotely with children and young people with NDCs?	• The NDC-DSCF builds upon an evidence-based understanding of adaptations to remote clinical practice for young people with autism • The remote format necessitates a critical appraisal of existing CYP-NDC intervention guidance • The competencies listed within the framework are focused on the knowledge and ability to manage the impact of sociocommunicative, attentional, sensory and emotion regulation difficulties on engagement with remote assessment and intervention, as well as taking into account other features of clinical complexity.
2. What issues do services need to consider when making adaptations to clinical operations for the purposes of remote working in this population?	• There was a recurring theme of ‘flexibility’ in both clinical operations & engagement, e.g. provision of the OVAAT; 4-session consultation model in psychology; flexibility within sessions; recursive nature of adaptations to clinical operations • Remotely-delivered services in fact present opportunities to address the social communication, sensory and cognitive (e.g. executive functioning) barriers that face-to-face appointments may pose. This points to the importance of bespoke service delivery. • Clinicians raised issues assessing and monitoring risk concerns remotely, describing how judgements on when face-to-face contact is required to assess risk is often intuitive, whilst greater attendance of MDT meetings, aided by remote working, helps with this task.

3. What approaches at an organisational level can facilitate the team's adaptation to online working?	• Direction, alignment and commitment all required for teams to overcome challenges and achieve an organisational purpose • Findings pointed to 'collective leadership' shown by clinicians of the service and 'compassionate leadership' from management • Team members took shared responsibility to problem-solve operational issues • Management directed efforts towards keeping staff and patients safe
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Following feedback of findings, discussions within the service suggested a need to review of the NDC-P model of clinical operations to consider integrating the continued offer of telehealth appointments within a hybrid model. This would be aimed at increasing the accessibility of the service in the longer-term. Several remaining questions were highlighted for consideration by the team:

- How might the service be able to support children and young people in making an informed choice about preferred format of service delivery?
- What is the acceptability of telehealth for complex NDC populations who have previously struggled to engage with offers of face-to-face service provision?
- How might different groups of young people with NDCs (e.g. those with diagnoses of autism, ADHD, tics, Tourette's etc) interact with digital communications, and how could such information be used to refine the NDC-DSCF further?

Recommendations were made for further PDSA cycles to better understand the acceptability of telehealth and relevance of the NDC-DSCF for subgroups of children and young people with neurodevelopmental needs. Responsibility for ensuring that recommendations are implemented lies with the whole team. The senior leadership team are currently identifying the key routes through which changes can be supported (e.g. case management, supervision, case discussion in teams meetings).

Discussion

The current study used semi-structured interviews to explore three areas related to remote working within a CAMHS neurodevelopmental conditions service. Results highlight adaptations to clinical engagement and technique that apply to working remotely with young people with NDCs, synthesised within a NDC-informed Digital Skills Competency Framework. Second, it reports on service level issues related to remote working as highlighted by the CAMHS Oxfordshire Neurodevelopmental Conditions Pathway (NDC-P). Finally, it describes approaches adopted at an organisational level that have influenced the team's transition to remote-working.

- 1) *What adaptations to clinical engagement and technique should be recommended to clinicians who are working remotely with children and young people with NDCs?*

Findings from the present study build on existing guidance for both remote practice (e.g. Pote et al., 2020; Smith et al., 2020) by offering a comprehensive framework for NDC-specific adaptations to digital practice. Previous literature on the double empathy problem suggests that the misperception or misunderstanding of autism by neurotypical people can result in barriers to social participation (Mitchell, Sheppard, & Cassidy, 2021). Clinicians should not assume that adaptations devised with neurotypical populations in mind are sufficient for application in NDC settings. This corresponds to a growing call for clinicians to develop confidence in adapting their practice to the needs of autistic people (Cooper et al., 2018). This warrants a critical appraisal of the relevance and applicability of existing recommendations for work with NDC populations. For example, whilst NICE Guidelines recommend maintaining attention by offering frequent breaks (NICE CG170 2013), our findings suggest that this may not always be indicated when it comes to appointments delivered via videoconferencing.

2) What issues do services need to consider when making adaptations to clinical operations for the purposes of remote working in this population?

In keeping with recent policy initiatives (Department of Health, 2011; Department of Health, 2013), findings from this study point to the importance of bespoke service delivery, designed to meet the needs and preferences of young people with NDCs and their families. Where exclusively face-to-face appointments may have presented a barrier to some young people with NDCs before COVID-19, the introduction of telehealth – providing suitable operational frameworks are in place to support its delivery - may present an opportunity to reach populations for whom clinic appointments present a barrier. Whilst much of the existing evidence advocating for the increased use of remote service delivery describes benefits in terms of improved geographical accessibility (Soares et al., 2013; Valentine et al., 2020), it is suggested that remotely-delivered services in fact present opportunities to address the social communication, sensory and cognitive (e.g. executive functioning) barriers that face-to-face appointments may pose for young people with NDCs (Mitchell et al., 2021).

3) What approaches at an organisational level can facilitate the team's adaptation to online working?

Findings correspond to a well-established link between adaptation and organisational resilience, defined as the 'ability to use internal and external resources successfully to resolve issues' (Sutcliffe & Vogus, 2003). Relatedly, organisational resilience in the face of adversity has been associated with teams being supported by leadership to view crises as developmental challenges that can be overcome (Bass, 1990; Sutcliffe & Vogus, 2003). Across the team, this may have enabled the adoption of collective leadership (The King's Fund, 2014). Previous research suggests the importance of direction, alignment and commitment toward overcoming challenges and achieving an organisational purpose (The

King's Fund, 2013; 2012). The recursive nature of adaptations required effective coordination between stakeholders (Lewin, 1951). The team evidenced this cyclical process of review throughout the transition, leading to sustained change.

Strengths and limitations

Where previous frameworks have been limited to neurotypical populations, the NDC-DSCF (Table 2) contributes a set of competencies to support and maintain best practice in telehealth with children and young people with NDCs. Its strengths include its inclusion of a continuum of expertise, drawn from staff of a range of professional backgrounds within a specialist NDC service. Accordingly, it draws on a theoretical understanding NDCs, providing suggestions of skills and techniques to adapt telehealth engagement. Items are separated into 'knowledge' and 'ability' in order to establish whether didactic or practice-based training should be used to improve clinicians' competencies (Michie, Churchill, & West, 2011). The framework could be implemented in other CAMHS services and used as a training tool to highlight areas for competency development. It may also be a useful resource for schools struggling to engage young people with NDCs in remote learning. A limitation of the framework is a lack of external validity, having been developed in consultation with only one service. As such, it is currently unclear as to whether recommendations would be directly applicable to the practice of other services.

Recommendations

Findings suggest that the traditional face-to-face model of service delivery should be developed to encompass a more inclusive set of options, taking into account heterogeneity within the NDC population (Cooper et al., 2018; Mitchell, Sheppard, & Cassidy, 2021). The purpose of this would be to offer a bespoke service (Department of Health, 2011; Department

of Health, 2013), supporting accessibility via remote-working when the offer of face-to-face provision may present barriers to engagement. Table 3 provides an overview of general recommendations for CAMHS services nationally to ensure best practice when working remotely with children and young people with NDCs, whilst Table 3 describes specific recommendations for the Oxfordshire NDC-Pathway to further improve remote service provision.

Table 3. General recommendations for all NDC services

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- Services working with NDC populations should review their model of service delivery, towards providing a hybrid model in which service users are presented with an option of either face-to-face or remotely-delivered appointments
 - It is recommended that services working remotely with NDC populations employ continual review of their digital skills practice in clinical supervision, aided by the NDC Digital Skills Competency Framework (NDC-DSCF)
 - New clinicians within NDC services employing telehealth should be supported to develop their knowledge and abilities within remote clinical practice with this population, aided by the NDC-DSCF
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Table 4. Recommendations for Oxfordshire CAMHS NDC Pathway

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- The service is suggested to develop a visual questionnaire to support service users in making a choice about preferred format of service delivery.
 - The service is recommended to conduct an audit of acceptability of telehealth for complex NDC populations who have previously struggled to engage with offers of face-to-face service provision.
 - Iteration of the PDSA cycle is recommended to investigate how different groups of young people with NDCs (e.g. those with diagnoses of autism, ADHD, tics, Tourette's etc) interact with digital communications in order to refine the framework further where needed.
-

The NDC-DSCF developed in this study can be used as a tool to establish and maintain best practice in engaging young people with NDCs via telehealth (see Appendix I for summary). It is vital that the implementation of these operational changes is supported by management structures to effect and maintain change, and that telehealth practice is continually reviewed as part of clinical supervision. Finally, it is recommended that the

service regularly audit its use of the NDC-DSCF, for example investigating its usefulness for subgroups of young people with NDCs. Stakeholder feedback should be prioritised as a key part of this process.

Conclusion

The competency framework developed within this study was synthesised from a series of interviews with clinicians within a specialist NDC service. This is the first competency framework to offer a set of specialist skills and techniques needed for telehealth delivery within NDC services. Issues that were salient in terms of clinical operations included the importance of flexible clinical protocol to meet patient need, facilitated/impeded attendance of consultations, assessing and managing risk remotely and addressing accessibility issues. Meanwhile, a review of organisational factors facilitating the ongoing transition and adjustment to remote-delivery highlighted the iterative process of change. The results were discussed with the team, who reflected on the benefits of offering a hybrid model of face-to-face and remotely-delivered appointments beyond the end of COVID-19. Further iterations of the PDSA cycle are planned to continue to refine and improve the NDC-DSCF to improve its specificity for subgroups of the wider NDC population.

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MRP: Investigating differences in social cognition in women with diagnoses of Autism Spectrum Conditions and Emotionally Unstable Personality Disorder

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Proposed journal: This report is intended for submission to *Journal of Clinical Psychology* and has been written and formatted accordingly (see Appendix). This journal has been chosen due to its transdiagnostic focus. It publishes articles using a range of methodologies.

Abstract

Background. Mentalization, operationalized as the overlapping constructs of reflective functioning and theory of mind (ToM), has been separately shown to be impaired both in individuals with Autism Spectrum Conditions and those with Emotionally Unstable Personality Disorder (EUPD). Reports suggest that similarities in the functional presentations can result in misdiagnosis of women with Autism as EUPD. The present study builds on previous research investigating each clinical group separately to compare similarities and differences in mentalizing profiles.

Methods. This study used a between-groups cross-sectional design with data collected at a single time-point. Participants (N=21 Autism, N=21 EUPD, N=23 community controls) completed the RMET, RFQ-54 and CORE-10 to measure theory of mind, reflective functioning and mood respectively.

Results. In terms of the RFQ subscales of hypermentalizing and hypomentalizing both clinical groups showed significantly elevated levels compared to controls but did not significantly differ from each other. RMET scores showed the same pattern. Psychological distress was associated with impairments in reflective functioning in both clinical groups. The ToM measure was not significantly associated with distress for either group.

Conclusions. The current findings indicate comparable profiles of mentalizing deficits in both clinical groups. Findings underscore reported difficulties in distinguishing the two groups at a diagnostic level. Suggestions are made for further investigations to evidence the pathways underpinning mentalizing profiles in either group, including possible mechanisms of intolerance of uncertainty and epistemic trust.

Key words: *Autism, Emotionally Unstable Personality Disorder, social cognition, mentalization, reflective functioning, theory of mind*

Introduction

Diagnostic uncertainty between Autism and Emotionally Unstable Personality Disorder (EUPD, also known as Borderline Personality Disorder) has been reported in both research and clinical settings (Dudas et al., 2017). Older adolescents and adults, particularly female, presenting to services with problems regulating intense emotional responses and interpersonal difficulties can be misdiagnosed with EUPD, where later this has been questioned or re-diagnosed as Autism (Au-yeung et al., 2018; Gordon, Lewis, Knight, & Salter, 2020; Takara, Kondo & Kuba, 2015). The treatment pathways for EUPD are highly variable and quite different from those in Autism. Despite NICE guidance (CG78) recommending longer-term psychological interventions, such as Mentalization Based Treatment (MBT; Bateman & Fonagy, 2004), and not using drug treatments for EUPD, high dose anti-psychotics are commonly used (e.g. Belli, Ural & Akbudak, 2012) and specialist psychological services are scarce. Meanwhile, there are no published trials evaluating the efficacy of MBT for autistic people. Better understanding of how to differentiate between these two diagnoses should improve access to appropriate services and appropriate treatments.

One area that has received interest in the literature for both groups is that of social cognition. Historically, this has been understood and explored differently in people with EUPD and people with Autism. Work investigating social cognition in Autism has referred to underlying deficits in the cognitive construct of ‘Theory of Mind’ (ToM), referring to the ability to identify and attribute mental states *to others* in order to understand and predict social behaviour (Frith, 2001; Frith & Frith, 2003). Work with individuals diagnosed with EUPD has, by contrast, focused on a multidimensional conceptualisation of ‘mentalization’, comprised of self-other, automatic-controlled, internal-external and cognitive-affective

components (Choi-Kain & Gunderson, 2008; Fonagy & Bateman, 2008). This study seeks to build on existing research on social cognition, comparing the profiles of the two groups on measures of ToM and mentalization, with a clarifying the extent of overlap and consider diagnostic issues.

Mentalization theory as related to EUPD

Mentalization, operationalised as ‘reflective functioning’, is a transdiagnostic and transtheoretical metacognitive construct, featuring both cognitive and affective factors (Luyten, Campbell, Allison, & Fonagy, 2020; Saxe, 2006; Sharp et al., 2011). It can be defined as a the ability to form explicit and implicit understanding of one’s own and others’ actions as driven by inner mental processes such as feelings, beliefs, wishes and fears (Gergely, 2003; Górska & Marszał, 2014). This ability enables the regulation of one’s own internal state, through an awareness of the motivations behind others’ actions, alongside a capacity to accurately infer how one is perceived. It is thought to be a uniquely human ability, with roots in both neurodevelopmental and attachment processes (Csibra & Gergely, 2009; Fonagy & Allison, 2016; Fonagy, Ma, & Bateman, 2011; Tomasello & Vaish, 2013).

EUPD is a pervasive functional disorder, characterised by patterns of instability in affective regulation, interpersonal relationships, and self-image (APA, 2013). It is recognised that EUPD has a developmental trajectory stemming from adverse childhood events, with earlier work focusing on the significance of attachment and mentalization processes (Fonagy & Luyten, 2009; Fonagy, Luyten, & Strathearn, 2011). More recently, a final common pathway has been proposed in the formation of the ability to trust in social communication, termed ‘epistemic trust’ (Fonagy, Luyten, & Allison, 2015). It is thought that early failures in experiencing oneself and others as internally coherent and predictable, via the absence of marked and contingent mirroring within infant-caregiver relationships, lead to difficulties in

‘mentalization’, the accuracy of recognition and understanding of mental states in oneself and others that underpin behaviour (Fonagy & Luyten, 2009; Fonagy, Luyten, Allison, & Campbell, 2017; Luyten et al., 2020; Winsper, 2018). As a consequence, the individual does not develop a sense of others as trustworthy sources of knowledge, preventing them from benefitting from social communication (Fonagy et al., 2015, 2017; Luyten et al., 2020). Thus, in a state of heightened epistemic vigilance, the person more readily loses capacity to mentalize, which in turn exacerbates their mistrust of others’ communications (Daubney & Bateman, 2015; Luyten et al., 2020).

Robust mentalizing features an attitude of openness and curiosity towards mental states, alongside an acknowledgement of their opaqueness (Fonagy, Gergely, Jurist & Target, 2002). Disturbances in mentalizing reflect (1) difficulties in the capacity to accurately simulate complex mental states in oneself and others (‘hypomentalizing’), which is associated with more concrete modes of functioning and related to the construct of alexithymia (Badoud et al., 2018; Fonagy et al., 2016) and (2) ‘hypermentalizing’, also known as ‘pseudomentalizing’, which involves over-attribution of complexity without appropriate evidence (Fonagy et al., 2016). The typical social-cognitive presentation in EUPD features a mixed profile of deficits, including both hypermentalizing, reflecting a particular over-attribution of mental states to others (Sharp, 2014; Sharp et al., 2011, 2016; Sharp & Vanwoerden, 2014) and hypomentalizing, with the latter more greatly associated with symptom severity (Fonagy & Luyten 2016). Such problems contribute to the emotional dysregulation seen in individuals with EUPD, as the self-regulatory appraisal processes which might usually reduce stress associated with social experiences are impaired (Bouchard & Sabourin, 2009; Bouchard, Sabourin, Lussier, & Villeneuve, 2009; Skodol et al., 2002). Diagnosis of EUPD is typically not given until after 18-years of age due to the recognition

that emotional instability and a changing sense of self are normal developmental processes occurring within adolescence (Biskin, 2015).

Theory of Mind as related to Autism

By contrast, Autism Spectrum Condition (ASC) is a pervasive neurodevelopmental diagnosis with lifelong impact. It is suggested that a core feature of Autism is an impairment in theory of mind (ToM) skills which are fundamental to mentalization, leading to deficits in the meta-representational ability “to impute beliefs to others and to predict their behaviour” (Baron-Cohen, Leslie & Frith, 1985; Frith & Happé, 1994). The usual mentalizing profile of ASC in research has focused on difficulties representing others’ internal worlds in the first place (“mind-blindness”, Frith, 2001), rather than failures in mentalizing as linked to a fundamental mistrust in others’ minds as in the EUPD literature (Fonagy & Bateman, 2008; Sharp & Vanwoerden, 2015). Indeed, whilst socio-environmental factors may plausibly contribute, it is acknowledged that the underlying mentalization profile is unlikely to originate from early impairment in attachment relationships and that this is better explained by an underlying deficit in ToM (Vivanti & Nuske, 2017).

Mentalization as described by Bateman and Fonagy (2012) requires the individual to possess ToM skills, as well as the capacity to activate and process relational and emotional representations of the self and other to understand and interpret behaviour (Choi-Kain & Gunderson, 2008; Górska & Marszał, 2014). In short, whilst ToM is a cognitive prerequisite for mentalizing, it is not sufficient for it (Górska & Marszał, 2014). Whilst meta-analytic evidence shows a considerable impairment in ToM in people with Autism relative to controls (Peñuelas-Calvo et al., 2019), as measured by the Reading the Mind in the Eyes Test (RMET), evidence for ToM abilities in people with EUPD diagnoses is more varied. Studies shows evidence for both greater accuracy on the RMET (Fertuck et al., 2009; Frick et al.,

2012), impaired accuracy (Anupama, Bhola & Thirthalli et al., 2018; Fossati et al., 2014; Ruiz-Tagle et al., 2015; Unoka et al., 2015) and comparable performance relative to controls (Prießler et al., 2010; Schilling et al., 2012; Vaskin et al., 2015). It is likely the variability of results is influenced by symptom severity, in addition to high levels of heterogeneity and co-morbidity in EUPD. However, taken together, meta-analytic evidence demonstrates an overall impairment in ToM in people with EUPD, with a small effect size (Németh et al., 2018).

In contrast to global ToM impairments in Autism, it is well established that the capacity to mentalize effectively is a fluctuating process, mediated by emotional arousal and regulation (Fizke, Buchheim, & Juen, 2013; Fonagy & Bateman, 2008; Herrmann et al., 2018). In other words, the more distressed an individual is, the higher the degree of mentalization impairment, with emotional arousal inhibiting the neural networks associated with controlled mentalizing, particularly in context of attachment-related stress (Fonagy & Luyten, 2009; Nolte et al., 2013). The extent to which mentalization is affected by emotional arousal is not well established in the Autism literature. This highlights the need to consider the role of psychological distress when exploring differences in social cognitions.

Rationale for the current study

Current theorising and research describes how difficulties understanding oneself and others are common to EUPD and Autism (Bateman & Fonagy, 2004; Frith & Frith, 2003), albeit with different proposed underpinnings. In both there are problems with establishing and maintaining interpersonal relationships, problems with identity development, difficulties managing emotions as well as self-injurious behaviour (Fitzgerald, 2005; Lavery, Oliver, Moss, Nelson, & Richards, 2020; Lugnegård, Hallerback, & Gillberg, 2012; Pelletier, 1998; Steinfeldt-Kristensen, Jones, & Richards, 2020). Meanwhile, concerns regarding

misdiagnosis of Autism as EUPD are increasingly reported (Aggarwal & Angus, 2015; Auyeung & Cassidy, 2018; Gordon, Lewis, Knight, & Salter, 2020; Takara, Kondo & Kuba, 2015). This issue is thought to be more pronounced in women than men, due to an under-recognition of Autism in females (Bargiela, Steward, Mandy, & Mandy, 2016; Lai et al., 2015; Loomes, Hull, & Mandy, 2017; Mandy et al., 2012). Increasingly, it is understood that Autism presentations in females do not correspond to male-centric conceptualisations and, relatedly, women with Autism are more likely to camouflage their autistic traits (Allely, 2019; Bargiela et al., 2016).

Collectively, this suggests the importance of directly comparing social-cognitive profiles of women with EUPD and women with Autism in order to provide greater clarity on issues involved in differential diagnosis. The present study therefore aims to examine similarities and differences in mentalizing and ToM, and the extent to which they are associated with psychological distress in either group. This study seeks to answer the following research questions:

- (1) What are the socio-cognitive traits of women diagnosed with Autism as compared to women diagnosed with EUPD?
- (2) What is the relationship between reflective functioning and psychological distress in women with EUPD diagnoses as compared to women with Autism and Community Controls?

Based on the existing research, it is hypothesised that

1. Both clinical groups will show greater levels of hypo- and hypermentalization relative to the control group, as well as a deficit in ToM as measured by the RMET; women with a diagnoses of EUPD will show higher levels of hypermentalization on the RFQ relative to women with Autism, whilst women with diagnoses of Autism will show greater levels of hypomentalizing.

2. Women in the Autism group will have a significant impairment in ToM relative to the EUPD group.
3. Impairments in reflective functioning will be significantly associated with psychological distress in women with EUPD compared to women with Autism.

Method

Design. This study used a cross-sectional design based on diagnostic groups (Autism, EUPD/BPD, and community controls) with measures obtained at a single time point. Participants completed the same questionnaires in a randomised order to prevent a risk of confounds via order effects, with the exception of demographics and CORE-10 which were consistently presented first. The study was designed with feedback from experts-by-experience, who reviewed the initial protocol.

Participants. A power analysis using G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) found that a minimum sample size of $N=20$ per group would be required for 80% power to detect a medium effect size of 0.5 with an Alpha of .05. This effect size was selected due to the study's exploratory nature. A total sample size of $N= 65$ ($N= 21$ for each clinical group and $N=23$ for community controls) was recruited. The two clinical participant groups were identified within adult Autism services and adult Personality Disorder services. Clinicians were made aware of inclusion/exclusion criteria (Table 1) and asked to identify individuals who fit the relevant profile. Patients who expressed interest were contacted via email with further information and engaged in a brief telephone screening to determine suitability for the study based on inclusion/exclusion criteria. The community control sample was identified by self-referral in response to advertising via social media and snowball sampling. Participants within this group were required to meet inclusion criteria and not to identify with either an Autism or EUPD diagnosis. All participants were required to give informed consent to take part in the study, after which clinical notes were checked to verify means of diagnosis of members of the EUPD group.

Table 1. Inclusion and exclusion criteria across groups

Inclusion criteria for clinical groups
- Meets criteria for acceptance under either an Autism or PD service within adult mental health - Having received a diagnosis of Autism, as confirmed by diagnostic tools such as the ADOS and ADI/3DR or EUPD as confirmed by a psychiatrist or psychologist involved in their care, as informed by a structured clinical interview (such as the Structured Clinical Interview for DSM or full International Personality Disorder Examination) for EUPD/BPD. - Is over the age of 18 and under the age of 65, to limit heterogeneity of the sample regarding life stage - Is able to speak English - Is able to provide consent to take part in the study
Inclusion criteria for community control groups
- Is over the age of 18 and under the age of 65, to limit heterogeneity of the sample regarding life stage - Is able to speak English - Is able to provide consent to take part in the study
Exclusion criteria for all groups
- Specific presentations will be excluded to prevent underlying mechanisms of each confounding results, including: - o active psychosis and Bipolar Disorder (e.g. delusional beliefs; Wright, Fowler, & Greenwood, 2018); - o substance misuse (e.g. impulsivity; Bornovalova, Lejuez, Daughters, Rosenthal, & Lynch, 2005); - o intellectual disability (e.g. executive dysfunction; Hartman, Houwen, Scherder, & Visscher, 2010) - o Dual diagnosis of both EUPD and autism. - Significant physical instability (for example, in the context of a low body mass index) that may impact socio-cognitive processes.

Ethics. Potential participants were informed of the nature and aims of the study via a Participant Information Sheet. Written consent was obtained electronically from all participants prior to participation. Ethical approval for this study was granted by West Midlands Solihull Research Ethics Committee (REC reference: 20/WM/0114, project ID: 273962). The study was sponsored by the University of Oxford.

Procedure. Participants completed three questionnaires via an online platform (Qualtrics®) to assess for reflective functioning capacity, ToM and psychological distress. Study materials were presented in a randomised fashion to control for order effects, except for demographics

and CORE-10 which were presented at the beginning of the set. Participants were asked to give a response to all items to proceed with the study.

Instruments

Demographic measures. Ethnicity, employment status, highest level of educational attainment and psychiatric diagnoses was collected. Owing to the high degree of overlap in Autism and EUPD presentations, screening tools e.g. the 10-item AQ, (AQ10; Allison et al., 2012) and the McLean Screen for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003) were not used in this study, as it was deemed unlikely that brief self-report instruments would adequately differentiate between the two diagnoses in a female population.

The Clinical Outcome Measure in Routine Evaluation (CORE-10; Connell & Barkham, 2007). The CORE-10 is a 10-item questionnaire measuring psychological well-being; its psychometric properties have been comprehensively investigated, with estimations of internal reliability (alpha) at .90. In this study, the alpha value was .92. The clinical cut-off score for general psychological distress is 11.0. A CORE-10 score below 10 suggested non-significant difficulties; a score between 11-15 indicates mild distress, a score between 16-20 indicates moderate distress, between 21-25 suggests moderately-severe distress, and between 26-40 is indicative of severe psychological distress.

Reflective Functioning Questionnaire (RFQ; Fonagy & Ghinai, 2008). The RFQ is a 54-item self-report questionnaire used to measure capacity for mentalization. It has two main factors: “certainty about mental states” (RFQc, corresponding to hypermentalizing), capturing on the extent to which individuals disagree with items such as “*I don’t always know why I do what I do*”, and “uncertainty about mental states” (RFQu, corresponding to

hypomentalizing), which involves agreement with statements including “*Sometimes I do things without really knowing why*”. Higher scores on the RFQc are thought to demonstrate a more authentic level of mentalizing via a recognition of the opacity of mental states, whilst lower scores reflect hypermentalizing (the tendency to over-attribute mental states via ‘pseudomentalizing’, associated with ‘pretend mode’ and considered to be a feature of EUPD presentations). Meanwhile, the RFQu is used to assess of hypomentalizing (a deficit in understanding mental states, with higher scores associated with concrete modes of functioning that include ‘psychic equivalence’ and ‘teleological mode’), and lower scores indicating an acknowledgement of the opaqueness of mental states. There are no clinical cut-offs. The internal consistency and test–retest reliability of the RFQ and its subscales has been shown to be satisfactory to excellent (Fonagy et al., 2016). In this study, Cronbach’s alpha was .93 for the RFQu and .91 for the RFQc.

Reading the mind in the eyes test-revised (RMET-R; Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001). The RMET-R is a 36-item measure of Theory of Mind (ToM). Each trial requires that participants match pictures of eyes showing different mental states, with the one of four words representing different ‘complex mental states’. Higher scores suggest a better ability to identify and attribute mental states to other people. There are no clinical cut-offs. Previous research provided evidence for adequate test–retest reliability ($ICC = .83$) as well as internal reliability of this measure ($\alpha = .60$). In this study, Cronbach’s alpha was .73 for the RMET.

Data analytic plan. Analyses were carried out using IBM SPSS v24 to compare groups on demographic and descriptive measures. The two main analyses investigated the effect of group (EUPD, Autism, CC) on the three dependent variables (ToM; RFQ-Uncertainty and

RFQ-Certainty). The RFQ variables were included in a mixed-model ANOVA with subscale as the within subject factor, while ToM was a one-way ANOVA. An alpha level of .05 was used for all analyses. For the RFQ, it was planned that simple main effects and planned comparisons Fisher Least Square Difference (LSD) (or Dunnett's T3 if Levene's test indicated issues in equality of variance) would be done. Multiple regression analyses were planned to examine the association between psychological distress on social cognition.

Results

Demographic and descriptive characteristics of the sample are presented in Table 2. To check that groups were similar in age, a one-way analysis of variance (ANOVA) was conducted, showing no significant main effect of group, $F(2,62)=2.50$, $p=.09$. Similarly, differences in CORE-10 score across groups were investigated. The assumption of homogeneity of variance was violated and could not be corrected using transformation, so a Kruskal-Wallis test was carried out. Results showed a significant effect of group on CORE-10 score, $H(2)=33.18$, $p<.001$. Pairwise comparisons found no significant difference between the clinical groups ($p>.05$), whereas both clinical groups differed from controls ($p<.001$). Due to the small cell sizes, employment status was collapsed into ‘employed/student’ vs. not employed. A Pearson chi-square test showed a significant association between employment status and group, $X^2(2) = 6.22$, $p = .045$. Partitioned Chi-squared tests showed differences between the clinical groups ($p<.05$), the EUPD group and controls ($p<.05$) but not the Autism group and controls ($p>.05$).

Table 2. Sample demographics and descriptive statistics

		Group		
		Autism	EUPD	Community controls
N		21	21	23
Age in years (M, SD)		36.05 (12.69)	36.05 (11.92)	43.65 (14.45)
Participants with multiple diagnoses (N)		13	14	1
Anxiety disorder (N, %)		10 (47.6%)	7 (33.3%)	2 (8.6%)
Mood disorder (N, %)		2 (9.5%)	6 (28.6%)	0
Ethnicity	White British	17	20	18
	White European	3	1	3
	White other	0	0	1
	Asian other	1	0	0
Educational attainment	Secondary school	7	9	4
	Diploma or equivalent	2	5	6
	Undergraduate degree	8	5	8
	Postgraduate degree	4	2	5
Employment status	Employed fulltime	10	4	12
	Employed parttime	1	4	4
	Unemployed and looking for work	1	1	0
	Unemployed not looking for work	4	7	2
	Student	4	0	0

	Disabled and unable to work	1	5	0
	Retired	0	0	5
CORE-10	Mean score (SD)	18.57 (8.02)	23.76 (7.94)	7.70 (5.70)
	Median	18.00	24.00	7.00
	Upper-bound	22.22	27.37	9.69
	Lower-bound	14.92	20.15	5.70

Table 3 presents the unadjusted means, standard deviations, and confidence intervals for all dependent variables.

Table 3. Means and standard deviations of RMET and RFQ subscales by group

Dependent variable	Group	<i>M</i>	<i>SD</i>	95% C.I.	
				LB	UB
RFQu	Autism	37.19	12.13	31.66	42.71
	EUPD	31.71	17.23	23.87	39.56
	Community controls	10.34	8.39	6.71	13.97
RFQc	Autism	10.62	6.18	7.80	13.43
	EUPD	15.29	10.97	10.29	20.28
	Community controls	26.83	15.55	20.10	33.55
RMET	Autism	24.38	5.93	21.68	27.08
	EUPD	25.52	4.65	23.42	27.64
	Community controls	28.57	2.50	27.48	29.65

Note: M= Mean, S = Standard Deviation, C.I. = Confidence Interval, LB = Lower Bound, UB= Upper Bound.

Main analysis

First, we compared social cognition between women with Autism, EUPD and community controls across two constructs: mentalizing, as measured by the hypermentalizing and hypomentalizing RFQ scales, and theory of mind, as measured by the RMET.

For mentalizing, a mixed-model analysis of variance (ANOVA) was conducted with one between-subjects factor (group), with three groups, (Autism, EUPD and controls); and one within-subjects factor (RFQ) with two subscales, (RFQc and RFQu). The assumption of

homogeneity of covariance was met as assessed by Box's test of equality of covariance matrices, $p = .058$, as was homogeneity of variances for the RFQc and RFQu as assessed by Levene's test of equality of error variance ($p = .159$ and $p = .146$ respectively). There was a significant main effect of group $F(2,62)=5.71$, $p < .005$). There was also a significant main effect of subscale $F(1,62)=10.70$, $p < .005$. These main effects were modified by a significant subscale by group interaction $F(2,62)=23.76$, $p < .001$. This interaction is shown in Figure 1.

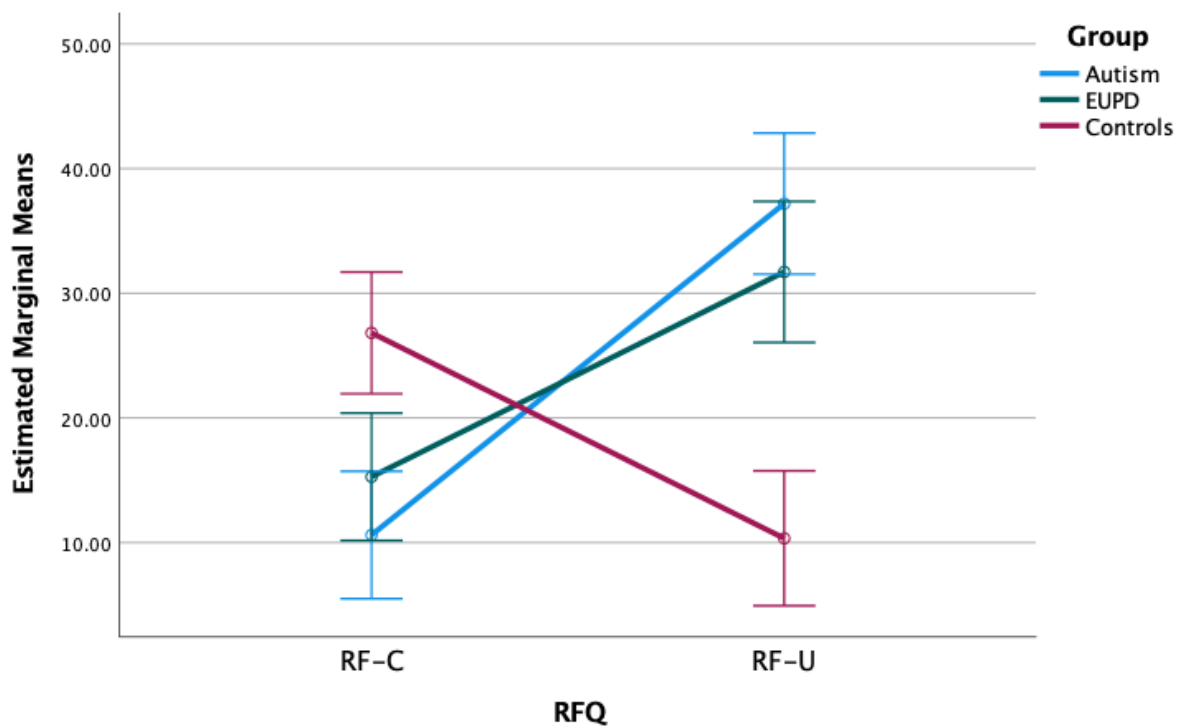


Figure 1. Graph showing mean scores on RF-C and RF-U subscales across groups. Error bars indicated a CI of 95%

Because the interaction was significant, simple main effects analysis were run across the three groups (Table 4). There was a significant main effect of group for both uncertainty (hypomentalizing) $F(2,62)=26.58$, $p < .001$, $\eta^2 = .46$ and certainty (hypermentalizing) $F(2,62)=11.26$, $p < .001$, $\eta^2 = .27$. The multiple comparisons indicated that for both measures the two clinical groups did not differ from each other ($p > 0.05$) but both differed from the community controls ($p < .01$).

As the main hypothesis concerned differences between Autism and EUPD groups, a subsidiary analysis was conducted without the control group. There was a significant effect of scale ($F(1,40)=39.70, p<.001$); there was no significant effect of group ($F(1,40)=0.06, p>.5$) and no significant interaction $F(1,40)=2.20, p=.145$) so no further analyses were completed.

In terms of theory of mind, there was a significant main effect of group on the RMET ($F(2,62)=5.05, p=.009, \eta^2=.14$). Multiple comparisons indicated no difference between the two clinical groups ($p>0.05$), with both being significantly different from controls ($p<.05$).

Table 4. Multiple comparisons using Fisher's LSD tests

Dependent variable	Group 1	Group 2	Mean difference	Standard error	Significance level (.05)	95% C.I.	
						LB	UB
RMET	Autism	EUPD	-1.14	1.40	.417	-3.94	1.65
		Community controls	-4.18*	1.37	.003*	-6.92	-1.45
	EUPD	Autism	1.14	1.40	.417	-1.65	3.94
		Community controls	-3.04*	1.37	.030*	-5.78	-0.31
	Community controls	Autism	4.18*	1.37	.003*	1.45	6.92
		EUPD	3.04*	1.37	.030*	0.31	5.78
RFQc	Autism	EUPD	5.48	4.00	.176	-2.53	13.48
		Community controls	26.84*	3.92	.001*	19.01	34.67
	EUPD	Autism	-5.48	4.00	.176	-13.48	2.53
		Community controls	21.37*	3.92	.001*	13.54	29.19
	Community controls	Autism	-26.84*	3.92	.001*	-34.67	-19.01
		EUPD	-21.37*	3.92	.001*	-29.19	-13.54
RFQu	Autism	EUPD	-4.67	3.61	.201	-11.89	2.55
		Community controls	-16.21*	3.53	.000*	-23.27	-9.15
	EUPD	Autism	4.67	3.61	.201	-2.55	11.89
		Community controls	-11.54*	3.53	.002*	-18.60	-4.48
	Community controls	Autism	16.21*	3.53	.001*	9.15	23.27
		EUPD	11.54*	3.53	.002*	4.48	18.60

* the mean difference is significant at the 0.05 level

Association between psychological distress and social cognition.

Review of skewness and kurtosis indicated a violation of the assumption of normality for RFQc. Examination of histograms indicated there was a significant outlier in the EUPD group for hypermentalizing (RFQc), more than three standard deviations from the mean of the subgroup. After further investigation, which demonstrated no difference between the analysis with or without its inclusion, the outlier was removed from the EUPD dataset, following which kurtosis and skewness indices fell within the acceptable range.

The tertiary question concerned the extent to which reflective functioning capacity was associated with variance in levels of psychological distress across the clinical groups. Three hierarchical linear multiple regressions were carried out with social cognition measures as the dependent variables (RFQu, RFQc and RMET). In each instance, age was entered followed by group (as a dummy variable) and finally CORE-10. For RFQc the model was significant, with psychological distress accounting for 11% of the variance in hypermentalizing; this was again significant for RFQu, with distress accounting for 37% of the variance in hypomentalizing. In each analysis, group did not make a separate contribution to variance in social cognition.

Table 5. Relationship between psychological distress as measured by the CORE-10 in EUPD and Autism groups (IV) and social cognition (DV)

DV †		Df	R²	Adjusted R²	F change	p
Hypermentalizing (RFQc)	Age	1,40	.024	.000	1.003	.323
	Age, clinical group,	1,39	.092	.045	2.888	.097
	Age, clinical group, CORE-10	1,38	.181	.116	4.123	.049*
Hypomentalizing (RFQu)	Age	1,40	.012	-.012	.525	.473
	Age, clinical group,	1,39	.047	-.002	1.401	.244
	Age, clinical group, CORE-10	1,38	.413	.366	23.633	.001*
Theory of mind (RMET)	Age	1,40	.000	.000	.005	.945
	Age, clinical group,	1,39	.012	.012	.471	.497
	Age, clinical group, CORE-10	1,38	.098	.086	3.630	.064

*significant at $p < .05$ level, †DV; Dependent variable

Discussion

This study sought to investigate similarities and differences in reflective functioning and theory of mind in women with Autism compared to those with EUPD diagnoses, with the aim to better understand the comparative profile at the level of social cognition. As predicted, both clinical groups showed greater levels of hypo- and hypermentalization and lower ToM scores relative to controls. Unexpectedly, however, the clinical groups did not differ from each other on any social cognition variable. Impairments in reflective functioning (particularly hypomentalizing) were shown to be significantly associated with psychological distress, but this was not impacted by group membership when both EUPD and Autism groups were analysed. Whilst prior research has found evidence that impairments in ToM might be associated with low mood (Colle et al., 2019; Fertuck et al., 2009), no association was found in the present study with regards to psychological distress.

Social cognition in women with Autism and EUPD diagnoses

Contrary to hypotheses, no significant difference was observed between groups for either measure of social cognition. This can be understood in context of previous research, which has found deficits in reflective functioning in EUPD (e.g. Sharp et al., 2011, 2016; Sharp & Vanwoerden, 2014) as well as emerging evidence that women with Autism may show a mixed profile featuring both hyper- and hypomentalization (Isaksson et al., 2019). Consistent with the current findings, there is previous evidence of deficits in ToM in women with EUPD relative to healthy controls (e.g. Ghiassi, Dimaggio, & Brüne, 2010; Harari et al., 2010; Mitchell, Dickens, & Picchioni, 2014). However, in the present study, we found that women with EUPD diagnoses showed a comparable ToM profile to women with Autism. It may be that the nature of errors made on the RMET task fit a profile of negatively biased over-attributions (in keeping with hypo- and hypermentalizing), given previous findings that

women with EUPD have a tendency to misinterpret emotional expressions (Bland et al., 2004; Levine et al., 1997) as well as showing a negative bias in response to ambiguous or neutral facial expressions (Daros, Zakzanis, & Ruocco, 2013; Daros, Uliaszek, & Ruocco, 2014; Domes, Schulze, & Herpertz, 2009; Fertuck, Grinband, & Stanley, 2013; Minzenberg, Poole, & Vinogradov, 2006; Murphy, 2006). Findings build upon the unidimensional conception of ToM deficits in Autism, where underperformance is attributed to uncertainty and lack of awareness of others' minds (Baron-Cohen, 1995). Owing to a mentalizing profile featuring both hypo- and hypermentalization, it is suggested that the clinical understanding of mentalization in Autism should be conceptualized as one of over-attribution and heightened certainty without sufficient evidence. Whilst this is comparable to the mentalization difficulties observed in EUPD, findings here do not necessarily mean that the same underlying mechanisms are involved, nor that the experience of women with Autism is similar (Mitchell, Sheppard, & Cassidy, 2021).

Association between psychological distress and social cognition

As predicted, psychological distress was associated with reflective functioning, but not theory of mind. This is consistent with existing evidence that demonstrates a relationship between reflective functioning deficits and psychological distress. Depressed patients exhibit greater mentalization deficits in terms of both hypo- and hypermentalization (Fischer-Kern et al., 2013; Fischer-Kern & Tmej, 2019; Taubner et al., 2011). Deficits in reflective functioning have also been associated with greater levels of psychopathology including PTSD and depression (Huang et al., 2020; Rifkin-Zybutz et al., 2021) whereas, in healthy populations, robust mentalizing is associated with improved emotion regulation (Schwarzer et al., 2021a) and coping (Schwarzer et al., 2021b). These results therefore build on our knowledge about the role of psychological distress in mentalization, relating this to women

with Autism as well as EUPD. Indeed, the finding that there was no significant between group difference in the association between reflective functioning and psychological distress was surprising and may suggest that the typical social cognition profile in Autistic women should be revised from a more unidimensional conceptualization of deficits in ToM (Arnaud, 2020; Chapman, 2019). Indeed, the relationship between psychological distress and reflective functioning deficits reported here might correspond to recent theories in the Autism literature which relate attenuated predictive processing to heightened levels of anxiety and a drive for greater certainty via ‘black-and-white thinking’ (Arnaud, 2020; Stark et al., 2021). This stands in contrast to theories of mentalization in EUPD, where deficits instead are thought to relate to epistemic hypervigilance (Fonagy et al., 2015, 2017; Luyten et al., 2020).

Implications for clinical practice and research

Findings suggest that women with Autism and EUPD may present with a similar profile of mentalizing and ToM, characterized by both hypo- and hypermentalization. This is an important finding, as it can support clinicians in recognising this specific mentalizing profile in women with Autism, where it might usually be understood as indicative of EUPD. Whilst the underlying mechanisms may be quite different, mediators specific to each group are yet to be established. Thus, future research should focus on disambiguating the pathways through which mentalization is impaired in Autism and EUPD respectively, investigating the comparative nature of and response time associated with errors on the RMET, to identify the presence of a ‘negativity bias’ on positive or neutrally valenced emotional expressions for EUPD participants (e.g. Mitchell et al., 2014). It may be errors of this nature are associated with levels of epistemic trust via the Epistemic Trust, Mistrust and Credulity Questionnaire (ETMCQ; Campbell et al., 2021). Furthermore, future research should explore the possibility that hypermentalizing in women with Autism may be a form of camouflaging behaviour

(Allely, 2019; Bargiela et al., 2016). Camouflaging, therefore, requires further investigation as a construct that may distinguish the mentalization profile between groups. Relatedly, findings point to a need to further explore the features of social cognition in women with Autism, considering deficits compared to the more well-established male-centric profile.

In terms of the extent to which psychological distress is associated with impairments in mentalizing, findings from this study suggest that treatments targeted at addressing failures in mentalizing, particularly hypomentalizing, may be a treatment target to reduce in distress across both groups. In other words, mentalizing failures and distress are significantly related, and both Autism and EUPD are associated with deficits or losses in mentalizing where severity of distress is higher, then treatments may need to focus on addressing mentalizing factors that might compromise treatments contingent on metacognition (Newton-Howes, Tyrer, & Johnson, 2006). Indeed, research shows that Mentalization Based Therapy (MBT) is effective in reducing distress in EUPD, as well as improving the primary symptoms of EUPD itself (Bateman & Fonagy, 2009). This treatment has yet to be evaluated for people with Autism and emotional dysregulation.

Strengths and limitations

Social cognition has not previously been compared in women with Autism and EUPD diagnoses, and the RFQ has not been previously used to investigate reflective functioning in women with Autism. Both groups were diagnosed within specialist clinical services. The failure to find significant differences in terms of social cognition may have provided some empirical evidence for the factors influencing diagnostic ambiguity. It also demonstrates the relationship between psychological distress as associated with both hypo- and hypermentalizing in both groups, suggesting that it may be reductionistic to ascribe the mentalization profile in Autism to a sole failure of ToM.

Whilst sufficient power was achieved to conduct statistical analyses, sample size was relatively small and low on diversity. The diagnostic groups were based on the evaluation of the clinical services from which they were drawn; although these were highly specialist services who confirmed diagnoses during clinical assessments, it is possible that some misdiagnosis or co-morbidity may be present. Specifically, it is possible that women recruited to the study from the services may have also met criteria for either Autism or EUPD (Anckarsäter et al., 2012; Dell’Osso et al., 2018; Rydén, Rydén, & Hetta, 2008) simply because of the narrow focus in such specialist settings. A replication of the present study with robust diagnostic measures to screen out differential diagnosis of either condition is recommended.

Conclusion

Impairments relative to community controls in terms of mentalizing (hyper- and hypo-mentalizing) and ToM were found at similar levels in women with both Autism and EUPD diagnoses. Surprisingly, there were no differences between the clinical groups, with a similar profile of impairment. Degree of psychological distress was associated with variance in both hypo- and hypermentalizing in both groups, suggesting a relationship between distress and reflective functioning in women with Autism as well as women with EUPD. It is possible that different mechanisms are involved if these metacognitive problems underpin diagnoses, which requires further investigation in research. Mentalizing may represent a final common pathway for other metacognitive issues in both diagnoses suggesting that it may be a potential treatment target in women with Autism in addition to women with EUPD. Future research should seek to evaluate the delivery of MBT with women with autism as a potential treatment pathway to enhance emotional regulation.

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Executive Summary

It has been suggested that there are differences in the thinking patterns between women with long-standing difficulties managing their emotions and relationships, commonly known as the diagnosis of Emotionally Unstable Personality Disorder (EUPD) and women with an established diagnosis of Autism. It may be that the similar thinking pattern between these two groups contributes to Autism being misdiagnosed as EUPD. This is a problem, because such traits in women tend not fit the traditional picture of Autism, and what's more, women have been known to 'camouflage' their Autistic traits by imitating the mannerisms, voice and personality of individuals without Autism. Together with the fact that the difficulties managing emotions and relationship problems are also common to EUPD, it is thought that some women with Autism may not be getting the support they need. Therefore, we need to better understand similarities and differences between the two presentations, in order that people can access to the appropriate services and interventions when they need them.

One key area which of research literature relates to the way these groups think about themselves and other people, termed 'social cognition'. By this, we mean the way in which people use an understanding of thoughts, feelings and intentions to make sense of their own and others' behaviours. Social cognition has been investigated in slightly different ways in Autism and EUPD. In Autism research, this has been studied with respect to the ability to make sense of *others'* thoughts, feelings and behaviour, known as 'theory of mind'. It is thought that people with Autism have underlying problems with theory of mind, which can make it more difficult to accurately understand why others behave as they do. In research into EUPD, social cognition has been studied with respect to the way in which old emotions and memories can get in the way of how we make sense of our own and others' thoughts, feelings

and behaviours. This ability – called ‘mentalization’ or ‘reflective functioning’ - looks like an openness and curiosity to understand ourselves and others, whilst also acknowledging that we might not always be able to know. Problems with mentalization are thought to get worse when people are upset. Taken together, it has been assumed that people with Autism find it difficult to make sense of others’ actions due to underlying difficulties in the ability to mentalise, whereas people with EUPD mostly struggle to make sense of their own and others’ minds when they’re experiencing intense emotions.

Our study investigated what differences there were between women with Autism, women with EUPD. ‘Theory of mind’ was evaluated using a questionnaire called the ‘Reading the Mind in the Eyes Test’. Mentalization was measured by a questionnaire called the Reflective Functioning Questionnaire. General distress was measured using a questionnaire called the CORE-10. We expected that women with Autism would have lower scores on the measure of ‘theory of mind’ compared to women with EUPD and people without either diagnosis, whilst women with EUPD diagnoses would show a greater tendency to ‘overthink’ on the measure of reflective functioning, and that this effect would be stronger the more upset they were when compared to women with Autism.

Results were surprising; unexpectedly, there were no statistically significant differences on any measure of social cognition – either theory of mind or reflective functioning – between women with Autism or women with EUPD. Compared to women without diagnoses, both groups showed difficulties identifying emotions in others, as well as feeling overly certain about their knowledge of mental states, alongside a lack of awareness of the relationship between thoughts and feelings on behaviour. The level of distress was not statistically different between either women with Autism and women with EUPD. There was

a link between level of distress and difficulties in reflective functioning (understanding both oneself and others) in both groups.

Whilst our results did not find any differences, this finding helps show that the thinking styles of women with Autism and women with EUPD look similar, with a surprisingly comparable ‘profile’ of difficulties. It indicates that both groups may find it particularly difficult to think about themselves and others when they are more upset. This is an important finding, as it can support clinicians in recognising that this particular style of thinking in people with Autism, which might normally be understood as a sign of EUPD. It might also help to inform the type of intervention that might be helpful. One intervention widely used for people with EUPD is called Mentalization Based Treatment (MBT). It is possible that MBT, if specially adapted for people with Autism, could help them learn how to separate out their own thoughts and feelings from the situation they are in. We suggest that further research should be conducted to look for any differences which might underly difficulties with understanding others between women with Autism and women with EUPD diagnoses. If these key differences are better understood, then treatments targeting social cognition, such as MBT, could be adapted to consider the underlying causes of difficulties mentalizing in women with Autism as well as in women with EUPD.

Connecting Narrative

Critical review of the literature

The first of my projects, a systematic review on the maternal-foetal relationship, was developed from a long-standing interest in the psychoanalytic concept of internal representations as predictive of developmental outcomes. In my initial planning, I had thought that I might do a meta-analytic review, examining the concordance between maternal representation in pregnancy, parent-infant interaction and infant attachment and exploring the extent to which this could be explained by maternal mentalization. I recall sharing the enthusiasm of my supervisors Becca Knowles Bevis and Jane Barlow as we reviewed some impressive research in the same area published in 2018. Yet, as the project developed, and I became more realistic about the scope of research on the DClinPsych programme (and initial submission date), it was agreed that the project should be refined to a more focal (and feasible) scope. I was therefore appreciative of Jane's suggestion to redevelop the project with a directly clinical emphasis, aiming to support clinicians in identifying tools to recognise mothers at-risk of bonding difficulties in the perinatal period. Although some of the breadth and complexity remained – attempting a systematic review of thirteen tools across four theoretical constructs – the scope of the project had narrowed, and I was ready to make a start.

With each stage of the systematic review being novel to me, this was at first quite daunting. I became heavily reliant on daily 'to do' lists, guiding me through each research day, narrowing and chunking my tasks for each stage. Reviewing methodological quality of papers within the quality appraisal stage enriched my understanding of the systematic review process and drew my attention to the core components that comprise methodological rigour across different study designs. Theoretical synthesis of the study felt like a particular challenge, when the paper integrated multiple constructs along with psychometric and

feasibility considerations. I was extremely grateful for Becca and Jane's responsive and thoughtful input on early drafts – including supportive feedback on how to file what felt like a rather 'busy' paper down into a shape that fits the 7,000-word limit.

Service improvement project

The development of my second research project spanned multiple iterations across different services, including an adult mental health team, a specialist safeguarding service and finally a CAMHS neurodevelopmental conditions (NDC) service where initially it took the form of evaluating and refining a newly established emotion regulation group based on DBT principles. Unfortunately, COVID-19 hit and all groups in the service were postponed. Thus I was again tasked with another rapid redevelopment, this time supported by my external supervisor James Stacey who had the idea to focus on the efforts of the service to adapt to remote working in context of the pandemic. A review of existing literature on remote working helped me to direct the focus towards developing a competency framework for telehealth in CAMHS NDC settings, with data drawn from clinician interviews. I felt I learned so much from the team during this process, furthering my own understanding for best practice in engaging individuals with NDCs from my time on placement in the service.

I felt daunted to share my findings with the team when I had undertaken the work in position of an external consultant. Yet, I found presenting the findings to the service might have been one of my favourite experiences in research to date. It was an inspiring collaborative, creative process - the team themselves had lots of interesting ideas as to how findings fit with their experience and hopes for the future development of the team. The project developed my understanding of organisational change processes within services. Further, it drew my attention to the markers of 'high-functioning' teams, where an

atmosphere of collaboration and support drives creative, flexible and person-centred quality improvement.

Main research project

My empirical research project was borne out of discussion with a close friend and mentor some eight years ago, following an undergraduate lecture at UCL on Autism in women by Professor Will Mandy. I was intrigued by the differences in presentation between males and females that have been proposed to contribute to diagnostic under-identification of Autism in women. At the same time, I have held a long-standing interest in mentalization theory as a transdiagnostic concept and have been curious about the supposed overlap in socioemotional and behavioural presentations in women with Autism and women with diagnoses of EUPD. Initial development of the project was challenging, partially due to my own ambitiousness in hoping to answer several theoretical questions relating not only to mentalization and theory of mind but also to attachment, emotion regulation and risk. My internal supervisors, Paul Salkovskis and Sasha Walters, helped me to refine the project to a more singular focus, whilst Steve Pearce, external supervisor, encouraged me to investigate the extent to which deficits in social cognition across the two groups varied with psychological distress.

Recruiting from clinical services brought with it the added challenge of an IRAS Ethics Application, which in retrospect was a fantastic learning experience. Data collection itself was a lengthy and uncertain process, hampered by the added pressures of COVID-19 on services which made it more difficult to identify eligible participants. I particularly valued the telephone contact I had with participants in the screening process, many of whom shared interesting and meaningful reflections on their journeys to diagnosis. I was grateful for

support during the data analysis, given my seven-year sojourn from statistics, and found myself doing a lot of re-learning during the process. Interpretation of the results, and synthesis with existing literature, proved a final challenge at the end of my DCLin research journey. It was in the final few days of writing-up that the paper came together. I hope that it will be a meaningful contribution to the field and one that, despite its narrow focus, goes some small way to evidencing the nuance in socio-emotional experiences for both clinical groups. Overall, I learned a huge amount during the process and hope to take these insights forwards in both clinical and research practice post-qualification.

Acknowledgements

Research

Thank you to my research supervisors for their support and guidance over these past three years. Thank you first to Becca, who started me off on my research journey and whose rich, perceptive feedback helped me find my feet in (and passion for) the perinatal field. I have been so grateful for your ongoing support as I draw nearer to qualification. Thank you to Jane, whose steering, expertise, feedback, and encouragement were again invaluable – not just for the project, but also for my morale at points of seemingly indelible stuckness. I feel lucky to have worked with you both and have learned so much in the process.

Thank you to Sasha, for all your problem-solving, support and thoughtful feedback in navigating everything SIP and MRP related. Thank you for normalising the rockier parts of the journey and for helping me give myself permission to set my pen down, so to speak, on weeks where I was flagging. Thank you to Paul, for giving much needed steer and statistics expertise to help me power through this final stage. Thank you to James, for helping me refine and develop the SIP through COVID-19, and to the team, whose commitment to supporting children, young people and families with NDCs has been an inspiration. Thank you to Steve, for your support shaping up the MRP and help thinking through some of the theoretical technicalities relating to mentalization theory. Thank you to all the services I recruited from, for all your help identifying participants amongst the extra pressures of the pandemic. And, of course, thank you to the participants themselves. The telephone conversations we had were amongst some of the highlights of the process, connecting me back into purpose behind the research.

Thank you to Helen, for helping me get to this point in one piece, walking with me through the challenges and offering a regular space to be open and reflect.

Placement supervisors

Thank you to all my placement supervisors along the way, from whom I have learned so much. Thank you to Laura, Alex, Lissy, Sue, James, Janet, Alessia and Nicola for your inspiring, encouraging, stimulating guidance through my core placements. Thank you to Clare and Alice for your support and encouragement this past year; supervision has been a welcoming and enriching space to learn and reflect, and I have especially appreciated your support and solidarity over these past few months. Thank you also to Sarah Coles, whose provision of ongoing systemic supervision over this last year was invaluable.

To each of those I have seen for therapy, I am grateful; whatever task we undertook together, each of you taught me something new.

Friends and family

Thank you to everyone who has been part of the journey – three years and twenty-five before– and stayed with me through the peaks and troughs. Thank you to each of you for your part in helping me to grow through this process, whatever form that has taken so far.

Appendices

DClinPsych Portfolio

Bryony Insua-Summerhays

May 2021

(i) Critical Review Appendices

CRL Appendix A: Acronyms and explications

Table 8. *Acronyms and their associated explications*

Acronym	Explication
IRMAG	Interview of Maternal Representations
IRMAG-R	Interview of Maternal Representations revised
MAAS	Maternal Antenatal Attachment Scale
MFA	Maternal foetal attachment
MFAS	Maternal Foetal Attachment Scale
MFR	Maternal-foetal relationship
P-PRFQ	Prenatal Parental Reflective Functioning Questionnaire
PAI	Prenatal Attachment Inventory
PI	Pregnancy Interview
PI-R	Pregnancy Interview revised
PMAS	Prenatal Maternal Attachment Scale
PRAM	Pictorial Representation of Attachment Measure
WMCI	Working Model of the Child Interview
WMCI-D	Working Model of the Child Interview disorganised

CRL Appendix B: Prisma checklist

Table 2. *PRISMA checklist*

SECTION/TOPIC	#	CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	2
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3-12
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	12
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	N/A
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	13
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	13-14
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	17

Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	18
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	18
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	18
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	18-19
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	N/A
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	N/A
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	18-19
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A

ADDITIONAL ANALYSIS

Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	20
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	21-27 (Tables 3-5)
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	21-29 (Tables 3-5)
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	30 (Table 6)
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	N/A

Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	N/A
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DISCUSSION

Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	39-41
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	43-44
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	44-45

FUNDING

Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	N/A
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CRL Appendix C: Quality ratings for included studies

Table 9. QATSSD ratings for each included study

Study author	Instrument	The Fr.	Ai ms	Res. Set	SS	Rep sam p	Data Coll	Choice tool	Recr uitm	Relia bVal	RQData Colle.	Analysis RQfit	Justif ica	SU inv.	Streng. Lim	TOT.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Ammaniti et al., (2013)	Interview of Maternal Representations (IRMAG; Ammaniti et al., 1992; Ammaniti, Tambelli, & Perucchini, 1998).	2	3	3	0	2	3	3	3	3	3	3	3	0	2	33
Arnott & Meins (2008)	"Describe your child" question	3	3	3	0	2	3	3	3	3	3	3	3	0	1	33
Atkinson et al., (2009)	Working Model of the Child Interview (WMCI; Zeanah et al., 1993)	3	3	3	0	3	3	3	3	2	3	3	3	0	3	35
Benoit et al., (1997)	Working Model of the Child Interview (WMCI; Zeanah et al., 1993)	2	3	3	0	0	2	3	3	3	3	3	3	0	2	30
Bloom (1995)	Maternal Foetal Attachment Scale (MFAS; Cranley, 1979, 1981)	3	2	2	0	3	2	3	3	3	2	3	3	0	1	30

Condon & Corkindale, (1997)	Maternal Antenatal Attachment Scale (MAAS; Condon, 1993)	1	2	1	0	1	2	3	2	2	3	3	3	0	3	26
Crawford & Benoit (2009)	Working Model of the Child Interview-D (based on WMCI; Zeanah et al., 1986)	3	3	2	0	2	2	3	3	3	3	3	3	0	3	33
Damato (2004)	Prenatal Attachment Inventory (Muller, 1989, 1993)	3	3	3	3	3	3	3	3	3	3	3	3	0	3	39
Dayton et al., (2010)	Working Model of the Child Interview (WMCI; Zeanah et al., 1993)	3	2	2	0	2	3	3	3	3	3	3	3	0	3	33
Flykt et al., (2012)	Interview of Maternal Representations (IRMAG; Ammaniti et al., 1992; Ammaniti, Tambelli, & Perucchini, 1998).	3	3	3	2	2	3	3	3	3	3	3	3	1	3	38
Fowles (1996)	Prenatal Maternal Attachment Scale (LoBiondo-Wood & Vito-ORourke, 1990)	1	2	3	0	2	3	3	3	3	3	3	3	0	3	32

Gau & Lee (2003)	Prenatal Attachment Inventory (Muller, 1989, 1993)	3	3	3	0	3	3	3	3	3	3	3	3	3	0	3	36
Huth-Bocks et al., (2004)	Working Model of the Child Interview-D (based on WMCI; Zeanah et al., 1986)	3	3	3	0	3	3	3	3	3	3	3	3	3	0	3	36
Huth-Bocks et al., (2011)	Working Model of the Child Interview-D (based on WMCI; Zeanah et al., 1986)	3	3	3	0	3	3	3	3	3	3	3	3	3	0	3	36
Lannert et al., (2013)	Working Model of the Child Interview-D (based on WMCI; Zeanah et al., 1986)	3	3	3	0	3	3	2	3	3	3	3	3	3	0	3	35
Madigan et al., (2015)	Working Model of the Child Interview-D (based on WMCI; Zeanah et al., 1986)	3	3	3	0	2	3	3	3	3	3	3	3	3	0	3	35
Mercer & Ferketich (1995)	Maternal Foetal Attachment Scale (MFAS; Cranley, 1979, 1981)	2	2	2	0	2	3	3	3	3	3	3	3	3	0	1	30
Pajulo et al., (2012)	Pregnancy Interview	3	3	3	0	2	3	3	3	3	3	3	3	3	0	3	35

Pajulo et al., (2015)	Prenatal Reflective Functioning Questionnaire	3	3	3	0	3	3	3	3	3	3	3	3	0	3	36
Sadler et al., (2016)	Pregnancy Interview with Reflective Functioning (Slade et al; 2002; Slade et al., 2005)	2	3	3	0	1	3	3	1	3	2	3	3	0	2	29
Salo et al., (2019)	Pregnancy Interview with Reflective Functioning (Slade et al; 2002; Slade et al., 2005)	3	3	3	0	3	2	3	2	3	3	3	3	0	3	34
Schwerdtfeger & Goff (2007)	Maternal Foetal Attachment Scale (MFAS; Cranley, 1979, 1981)	2	3	3	0	3	3	3	3	3	3	3	3	0	3	35
Smaling et al., (2015)	Dutch translation of Pregnancy Interview with Reflective Functioning (Slade et al; 2002; Slade et al., 2005)	3	3	3	0	3	3	3	3	3	3	3	3	0	3	36
Smaling et al., (2016)	Dutch translation of Pregnancy Interview Revised with Reflective Functioning (Slade et al; 2002; Slade et al., 2005)	3	3	3	0	3	3	3	3	3	3	3	3	0	3	36

Theran et al., (2005)	Working Model of the Child Interview-D (based on WMCI; Zeanah et al., 1986)	3	3	0	0	3	1	3	3	3	3	3	3	0	3	31
van Bakel et al., (2013)	Pictorial Representation of Attachment Measure (PRAM; van Bakel, Maas, Vreeswijk & Vingerhoets, 2013)	3	3	3	0	3	3	3	3	3	3	3	3	0	3	36
Vreeswijk et al., (2015)	Working Model of the Child Interview (WMCI)	3	3	3	0	3	3	3	2	3	3	3	3	0	3	35

Domains: 1) guided by a theoretical framework; 2) delineation of study aims; 3) documentation of research setting; 4) statistical consideration of size of sample; 5) consideration of representativeness of sample; 6) documentation of sampling methods; 7) appropriateness of choice of tool; 8) recruitment process; 9) reporting of reliability and validity; 10) appropriateness of data collection method to research question; 11) match between aims, data collection and analysis; 12) justification of analytic method; 13) involvement of experts-by-experience in conducting the study; 14) strengths and limitations addressed

CRL Appendix D: Definitions of psychometric properties

Validity describes the degree to which the instrument measures what it is intended to measure. The validity extracted includes **content, criterion, factorial and construct validity**. Briefly, content validity is defined as the extent to which the tool measures content according to expert-opinion, criterion validity is the extent to which responses to the tool correspond with responding patterns on other similar tools, structural validity is the degree to which scores of an instrument reflect the dimensionality of the concept under study, whilst construct validity is the extent to which the tool measures what it purports to measure.

Reliability describes the consistency of a measure. This includes **test-retest reliability** (consistency over time), **internal consistency** (across items) and **inter-rater reliability** (across different researchers). In terms of how reliability properties are measured, Cohen's kappa (Cohen, 1960), observed agreement and Pearson's correlation coefficient can be used to report inter-rater agreement or reliability. Cohen's kappa designates whether agreement between raters of an instrument is due to more than chance. Kappa values are categorised as slight ($\leq .20$), fair ($\leq .40$), moderate ($\leq .60$) and substantial ($\geq .80$) (Landis & Koch 1977). Pearson's correlation coefficients (r) are characterised as strong (> 0.75), moderate ($.50-.74$) and weak ($.25-.49$). Observed agreement describes the percentage of cases where raters' answers agree. Internal consistency can be calculated with Cronbach's alpha (Cronbach, 1951). A Cronbach's alpha of $> .70$ is considered acceptable. Pearson's correlation coefficient can also be used to either report test-retest reliability. It characterises $\geq .90$ as excellent, $\geq .80$ as good, $\geq .70$ as questionable and $< .60$ as poor.

Figure 2. *Definitions of psychometric properties*

CRL Appendix E: Author Guidelines for Infant Mental Health Journal

1. Article Types

Original Papers are reports of new research, empirical findings or conceptual analyses that make a significant contribution to knowledge, to the extant literature, and to the science of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. Abstracts are unstructured and no more than 225 words. All manuscripts must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health.

Brief Reports are no more than 5,000 words and are appropriate for preliminary findings of cutting-edge pilot studies. Case reports reflecting novel or highly significant clinical approaches may be considered as well. Abstracts are unstructured and no more than 225 words. All brief reports must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health.

Review Articles reflect critical, thorough literature reviews or theoretical/conceptual articles that synthesize and critique the research literature to date or offer new theoretical and conceptual frameworks that are highly relevant to the field of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. All manuscripts must include a data availability statement (if applicable), an ethics statement (if applicable), key findings, and statement of relevance of the work for infant and early childhood mental health.

Special Collections/Special Sections are collections of three to five manuscripts on a topic highly relevant to the field of infant and early childhood mental health. Authors interested in submitting special sections should contact the editor. The editor will require a brief proposal include the proposed focus of the collection/section, working titles/foci of the manuscripts, rationale for the collection/special section. If the collection/special section is approved by the editor, each manuscript will go through the standard review process.

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Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online

at <https://mc.manuscriptcentral.com/imhj>

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Free-format submission

Infant Mental Health Journal now offers free-format submission for a simplified and streamlined submission process. Although authors are not required to format their manuscript according to specific style guidelines, references should be formatted according to APA Publication Manual: 7th Edition. Formatting changes needed in manuscripts to comply with APA 7th edition guidelines will be made by the Wiley production team after a manuscript is accepted for publication. This applies to all article types.

(Important: this journal operates a double-blind peer review policy. Please anonymize your manuscript and prepare a separate title page containing author details.)

Infant Mental Health Journal operates a double-blind peer review process, so please ensure that all identifying information such as author names and affiliations, acknowledgements, or explicit mentions of authors' institutions in the text are on a separate page.

Your manuscript: This can be a single Word file including text, three key findings and statement of relevance to infant and early childhood mental health, figures, and tables, or separate files—whichever you prefer. All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends. References may be submitted in any style or format, as long as it is consistent throughout the manuscript. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers. If your manuscript is difficult to read, the editorial office may send it back to you for revision.

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The title page of the manuscript with author/coauthor information, including statements relating to our ethics and integrity policies as follows:

Data sharing and data availability statement

Funding statement

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The title page should contain:

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Relevance and Key Findings

3 key findings/practitioner points appearing below the abstract: Authors will need to provide no more than 3 ‘key points’, written with the practitioner in mind, that summarize the key messages of their paper to be published with their article. Each finding should be one sentence in length.

Statement of relevance to the field of infant and early childhood mental health (no more than 75 words) appearing below the abstract. Explain why the research topic is relevant to infants and early childhood mental health.

Main body: formatted as introduction, methods, results, discussion, conclusion and implications for practice and/or further research.

In support of fully transparent research, please make sure to fully describe recruitment processes, data collection methods, data analyses, and results. Please include reports of effect sizes, confidence intervals, or other information that provides additional context for the interpretation of findings.

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(ii) Service Improvement Project Appendices

SIP Appendix A: Interview participant details

Table 1. Participant details

Professional title	Sex	Interview Length
Speech and language therapist	Female	45 minutes
Consultant Psychiatrist	Female	51 minutes
Nurse Prescriber	Male	42 minutes
Lead Clinical Psychologist	Male	53 minutes
Clinical Psychologist	Female	33 minutes
Clinical Nurse Specialist and Deputy Team Manager	Female	74 minutes
Service Manager	Female	48 minutes
Occupational Therapist	Female	59 minutes

SIP Appendix B: Semi-structured interview schedule

Practical adaptations

1. How do you assess suitability for remote intervention?
2. How do client interests/abilities influence choice of modality?
3. What opportunities does online working afford?
4. What are the limitations?
 - a) What did you see as being important to consider when developing and/or adapting assessment and intervention for online?
5. What practical/technical adaptations do you make? Why are these important for this population?
 - a) How do you manage a lack of access to non-verbal cues, such as eye gaze and body orientation?
 - b) How do you manage turn-taking in individual and group work?
 - c) How do you approach positioning on camera?
 - d) How do you manage attentional issues?

Therapeutic adaptations

6. How do you manage engagement and boundaries?
 - a. How does this differ between groups and individual sessions?
 - b. What about when young people in a group have different needs and expectations? (Inhibition/disinhibition)
7. NICE guidance recommends (insert guidance here). How have you been applying (guidance) to working remotely?
 - a. More cognitively concrete and structured approach
 - b. Greater use of written and visual information - how have you modified the material used in online sessions?
 - c. Simplifying cognitive activities - how have you modified the style of delivery of material in online sessions?
 - d. Maintaining attention by offering frequent breaks
 - e. Spending a greater proportion of the intervention on emotion recognition
 - f. Involving a parent/carer in implementing the intervention
8. How do you integrate and use creative non-verbal visual digital tools to complement online psychological interventions?
9. How do you adapt communication style and employ different functionalities of the technology concerned to promote the formation of a therapeutic relationship?
10. How do you deliver e-learning related to clinical practice and psychoeducation through synchronous and asynchronous methods (e.g. ebooks, vlogs, live webinars) to clients and professionals?
11. Is there anything in terms of additional resources that has or would be of help when setting up and facilitating an online group in these populations?

12. Based on your experience so far, what would be your three top-tips for clinicians to hold in mind when delivering remote assessment and intervention for populations with autism or ADHD?

Organisational

13. How have decisions around adaptations in the service been made?
14. How has the service approached implementing these decisions?
15. How has supervision changed to support the transition to remote working?
16. What has leadership done to facilitate the team's adaptation to remote working?

SIP Appendix C: NDC-P demographic data

Table 4. Primary diagnoses for young people under the NDC-P

Diagnosis	Frequency	%
F84.0 - Childhood autism	505	57.51
F90.0 - Disturbance of activity and attention	199	22.67
F90.8 - Other hyperkinetic disorders	25	2.85
Z13.4 - Special screening examination for certain developmental disorders in childhood	15	1.71
F41.2 - Mixed anxiety and depressive disorder	13	1.48
F41.1 - Generalized anxiety disorder	10	1.14
F90.1 - Hyperkinetic conduct disorder	7	0.80
Z03.2 - Observation for suspected mental and behavioural disorders	7	0.80
F98.9 - Unspecified behavioural and emotional disorders with onset usually occurring in childhood and adolescence	6	0.68
F32.0 - Mild depressive episode	4	0.46
F93.9 - Childhood emotional disorder, unspecified	4	0.46
F98.8 - Other specified behavioural and emotional disorders with onset usually occurring in childhood and adolescence	4	0.46
F32.1 - Moderate depressive episode	3	0.34
F41.9 - Anxiety disorder, unspecified	3	0.34
F91.3 - Oppositional defiant disorder	3	0.34
F95.2 - Combined vocal multip motor tic disorder [de la Tourette]	3	0.34
F40.1 - Social phobias	2	0.23
F43.1 - Post-traumatic stress disorder	2	0.23
F50.0 - Anorexia nervosa	2	0.23
F50.1 - Atypical anorexia nervosa	2	0.23
F91.0 - Conduct disorder confined to the family context	2	0.23
F92.9 - Mixed disorder of conduct and emotions, unspecified	2	0.23
F93.0 - Separation anxiety disorder of childhood	2	0.23
F93.2 - Social anxiety disorder of childhood	2	0.23
F94.1 - Reactive attachment disorder of childhood	2	0.23
F99 - Mental disorder, not otherwise specified	2	0.23
R62.0 - Delayed milestone	2	0.23

Z60.9 - Problem related to social environment, unspecified	2	0.23
F32.2 - Severe depressive episode without psychotic symptoms	1	0.11
F40.2 - Specific (isolated) phobias	1	0.11
F41.8 - Other specified anxiety disorders	1	0.11
F42.1 - Predominantly compulsive acts [obsessional rituals]	1	0.11
F42.2 - Mixed obsessional thoughts and acts	1	0.11
F43.2 - Adjustment disorders	1	0.11
F43.9 - Reaction to severe stress, unspecified	1	0.11
F50.9 - Eating disorder, unspecified	1	0.11
F51.2 - Nonorganic disorder of the sleep-wake schedule	1	0.11
F51.9 - Nonorganic sleep disorder, unspecified	1	0.11
F64.2 - Gender identity disorder of childhood	1	0.11
F70.0 - Mild mental retardation with the statement of no, or minimal, impairment of behaviour	1	0.11
F80.0 - Specific speech articulation disorder	1	0.11
F81.0 - Specific reading disorder	1	0.11
F81.3 - Mixed disorder of scholastic skills	1	0.11
F81.9 - Developmental disorder of scholastic skills, unspecified	1	0.11
F83 - Mixed specific developmental disorders	1	0.11
F84.9 - Pervasive developmental disorder, unspecified	1	0.11
F90.8 - Other hyperkinetic disorders	1	0.11
F93.8 - Other childhood emotional disorders	1	0.11
F94.0 - Elective mutism	1	0.11
F94.8 - Other childhood disorders of social functioning	1	0.11
F98.9 - Unspecified behavioural emotional disorder	1	0.11
F99.X - Mental disorder, not otherwise specified	1	0.11
G40.3 - Generalized idiopathic epilepsy and epileptic syndromes	1	0.11
Z55.9 - Problem related to education and literacy, unspecified	1	0.11
Z60.8 - Other problems related to social environment	1	0.11
Z61 - Problems related to negative life events in childhood	1	0.11

Z61.3 - Events resulting in loss of self-esteem in childhood	1	0.11
Z61.5 - Problems related to alleged sexual abuse of child by person outside primary support group	1	0.11
Z61.6 - Problems related to alleged physical abuse of child	1	0.11
Z61.7 - Personal frightening experience in childhood	1	0.11
Z61.9 - Negative life event in childhood, unspecified	1	0.11
Z62.0 - Inadequate parental supervision and control	1	0.11
Z62.4 - Emotional neglect of child	1	0.11
Z62.5 - Other problems related to neglect in upbringing	1	0.11
Z62.9 - Problem related to upbringing, unspecified	1	0.11
Z63.1 - Problems in relationship with parents and in-laws	1	0.11
Z63.8 - Other specified problems related to primary support group	1	0.11
Z63.9 - Problem related to primary support group, unspecified	1	0.11
Z65.9 - Problem related to unspecified psychosocial circumstances	1	0.11
Z73.8 - Other problems related to life-management difficulty	1	0.11
F20.6 - Simple schizophrenia	1	0.11
Grand Total	878	100.00

Table 5. Ethnicities represented in NDC-P caseload

Ethnicity	Frequency	%
White – British	1788	66.32
Mixed - Any other mixed background	310	11.50
Not Known (Not Requested)	124	4.60
White - Any other White background	65	2.41
Other Ethnic Groups - Any other Ethnic Group	38	1.41
Mixed - White and Asian	28	1.04
Mixed - White and Black Caribbean	28	1.04
Mixed - White and Black African	21	0.78
Not Stated (Client Refused)	17	0.63
White – English	13	0.48
Black or Black British – African	12	0.45
Asian or Asian British - Any other Asian background	11	0.41
Asian or Asian British – Pakistani	11	0.41
Not Known (Unable to Request)	11	0.41
White - Any other background	8	0.30
Asian or Asian British – Indian	6	0.22
Mixed - Other/Unspecified	6	0.22
Other Ethnic Groups – Chinese	5	0.19
White - Other European	5	0.19
Black or Black British – Caribbean	4	0.15
White – Irish	4	0.15
Asian or Asian British – Bangladeshi	2	0.07
Black or Black British - Any other Black background	2	0.07
Not Stated (Client unable to Choose)	2	0.07
White - Mixed White	2	0.07
Any Other Group	1	0.04
Black or Black British – Mixed	1	0.04
Mixed - Black and White	1	0.04
Mixed - Chinese and White	1	0.04

Not Stated (Not Requested)	1	0.04
Other Ethnic Groups – Iranian	1	0.04
White – Greek	1	0.04
White - Irish Traveller	1	0.04
White – Polish	1	0.04
None recorded	164	6.08
Grand Total	2696	100.00

SIP Appendix D: NDC-Pathway appointment data

Table 6. Appointment outcomes for the ten months prior to COVID-19, ending 14th March 2020

Month	Attended	Cancelled by client	Cancelled by service	DNA	Not yet outcomed	Totals
Jun-19	553	20	9	24	0	606
Jul-19	676	45	3	35	0	759
Aug-19	424	24	12	22	0	482
Sep-19	613	21	16	32	0	682
Oct-19	724	26	11	28	0	789
Nov-19	754	20	12	40	0	826
Dec-19	539	22	8	29	0	598
Jan-20	696	14	10	28	4	752
Feb-20	569	13	10	22	1	615
Mar-20	282	11	9	18	0	320
Total	5830	216	100	278	5	6429
% of total appointments	90.68	3.36	1.56	4.32	0.08	100.00

Table 7. Appointment outcomes for the ten months during COVID-19, beginning 15th March 2020

Month	Attended	Cancelled by client	Cancelled by service	DNA	Not yet outcomed	Totals
Mar-20	284	10	47	11	1	353
Apr-20	558	8	21	23	0	610
May-20	580	4	11	21	1	617
Jun-20	713	6	3	28	3	753
Jul-20	689	6	1	18	3	717
Aug-20	448	7	4	21	2	482
Sep-20	630	6	4	21	10	671
Oct-20	543	14	4	21	4	586
Nov-20	711	12	6	13	12	754
Dec-20	463	11	3	9	18	504
Total	5619	84	104	186	54	6047
% of total appointments	92.92	1.39	1.72	3.08	0.89	100.00

Table 8. Appointment classifications for ten months prior to COVID-19 lockdown, ending March 14th 2020

	TOTAL	Review	Advice	Consulta tion	Assessme nt	CBT	Carer- focused Educatio	Medicati on monitori ng	Multidisc iplinary Meeting	Safeguar ding & Risk Assessme	Telephon e Contact	CPA Review	Unspecifi ed Treatme nt	Group CBT
Jun-19	608	161	115	121	88	73	11	4	6	6	20	0	3	0
Jul-19	763	209	132	184	136	38	0	8	5	2	19	1	29	0
Aug-19	483	189	74	66	110	16	0	2	4	1	8	1	12	0
Sep-19	684	261	121	93	146	19	11	5	3	4	1	0	11	9
Oct-19	796	242	131	181	143	34	23	0	1	5	3	0	21	12
Nov-19	828	217	151	188	176	35	44	1	1	2	0	0	13	0
Dec-19	600	197	107	99	145	23	1	5	6	2	0	0	15	0
Jan-20	754	302	124	68	179	34	10	10	5	1	0	0	14	7
Feb-20	629	246	74	45	156	22	67	0	7	2	0	0	10	0
Mar-20	320	134	45	2	81	22	28	1	2	0	0	0	5	0
Total appts.	6465	2158	1074	1047	1360	316	195	36	40	25	51	2	133	28
% of total appts.	100. 00	33.3 8	16.61	16.19	21.04	4.89	3.02	0.56	0.62	0.39	0.79	0.03	2.06	0.43

Table 9. Appointment classifications for ten months during COVID-19 lockdown, beginning March 15th, 2020

	TOTAL	Review	Advice	Consulta tion	Assesse nt	CBT	Carer- focused Educatio n or Support	Medicati on monitori ng	Multidisc iplinary Meeting	Safeguar ding & Risk Assesse nt	Telephon e Contact	CPA Review	Unspecifi ed	Group CBT
Mar-20	351	143	60	6	92	7	28	2	2	0	0	0	11	0
Apr-20	611	293	117	8	148	20	0	4	0	1	1	0	19	0
May-20	620	271	91	16	170	27	24	6	2	0	0	0	13	0
Jun-20	754	330	117	8	228	30	1	24	3	1	0	0	12	0
Jul-20	717	307	113	9	199	54	1	21	6	0	0	0	7	0
Aug-20	482	199	50	14	146	47	2	18	1	1	0	0	4	0
Sep-20	667	280	89	15	162	42	25	28	9	2	0	0	15	0
Oct-20	588	221	85	17	173	27	24	25	7	2	0	0	7	0
Nov-20	754	380	91	8	171	32	21	21	15	1	0	0	13	1
Dec-20	502	266	55	6	99	19	10	16	12	0	0		19	0
Total appts.	6046	2690	868	107	1588	305	136	165	57	8	1	0	120	1
% of total appts.	99.97	44.48	14.35	1.77	26.26	5.04	2.25	2.73	0.94	0.13	0.02	0.00	1.98	0.02

SIP Appendix E: Summary of audit on the OVAAT (Stark, 2020)

A recent audit of the service reported on 40 assessments. It found the age range of children and young people (N=27 male) who received an Oxford Autism Assessment Tool (OVAAT) was 7 to 18 years old. It reported that younger children tended to be male (84%) whilst the older children were more evenly balanced in terms of gender (45% female, 55% male). Sessions ranged from between 20 minutes to 1 hour 50 minutes in length (M= 1 hour 30 minutes), with 87.5% of young people completing the full OVAAT. Problems with technology occurred in 50% of assessments, with the most common fault being screens freezing (accounting for 25% of faults). Occasionally, tasks were omitted from the OVAAT in response to the child's preference (e.g. not wishing to engage in reading or drawing tasks). In addition, clinicians reported diverting from the OVAAT to ask additional questions or do additional tasks. The majority of assessments gave conclusive evidence to support an ASD diagnosis (82.5%). Parents and clinicians were invited to make additional comments:

- *The young person made it clear that it was much better for him to do this online, rather than coming to an unfamiliar place.*
- *From his presentation I would imagine he found it easier than coming into a clinic. He was very comfortable with technology but slightly uncomfortable but compliant with me [the clinician].*
- *He finds it easier being with his things and is lively wherever he is.*
- *"My child was more comfortable at home and more able to be himself."*
- *They might have found coming into clinic easier, although actually as long as mum could be present and had toys they were okay. Finds it very difficult meeting new people.*
- *Mum felt that she wasn't sure as to whether she would recommend this assessment as she has nothing to compare it to. Mum said her son felt more comfortable at home, so she was worried the online assessment might not pick up his challenges.*
- *The child would have found going to a clinic appointment very difficult and anxiety provoking – they found it easier on a screen.*
- *Mum was not sure, but child said he would not have liked to come to clinic.*
- *More comfortable at home, would find it harder going to clinic.*
- *Might have been easier to see face to face, as he got distracted by his stuff, but he was overall more comfortable at home.*

SIP Appendix F: NDC-P codes corresponding to the DSCF

Table 10. Number of codes for items identified within NDC-P interview transcripts as relevant to the Digital Skills Competency Framework (DCSF)

Competency	Area	Item	Codes (N)
Assessment & Formulation	Knowledge	Knowledge of opportunities and limitations of technology related to clinical engagement and the therapeutic relationship	31
		Knowledge of opportunities and limitations of technology related to client factors	23
		Knowledge of clinical engagement issues when conducting online screening and psychological testing	20
		Knowledge of psychological assessment tools, available for online administration within one's own scope of practice	10
		Knowledge of clinical safety (risk) issues associated with digital/remote therapeutic work	6
		Knowledge of factors involved in choosing online platforms, ensuring their clinical safety	4
		Knowledge of inclusion and exclusion criteria for online psychological assessment and outcome monitoring	2
	Ability	Ability to assess and match client needs, interests and ability to suit digital modalities	28
		Ability to assess a client's suitability for online interventions, revising this as necessary on an ongoing basis	21
		Ability to administer psychological assessment tools via remote means	11
		Ability to select online psychological assessments appropriate to remote delivery	10
		Ability to conduct accurate risk and clinical safety assessments given limitations of digital technologies	9
		Ability to create and share a collaborative formulation with a client remotely e.g. using screen sharing of documents or white board function to draw out a formulation	3
Psychological Intervention	Ability	Ability to adapt digitally informed interventions to the needs of clients from a range of ages and abilities	8
		Ability to integrate and use creative, non-verbal visual digital tools to complement online psychological intervention	7

Metacompetencies	Knowledge	Ability to adapt evidence-based protocols to online delivery	4
		Ability to conduct therapy in individual and group format using digital technologies	3
		Ability to introduce the use of self-help and/or blended complementary materials to clients	1
		Knowledge of electronic self-help materials and platforms available to support the	3
		Knowledge of contemporary digital technologies used in the direct and indirect delivery of	3
		Knowledge of different digital tools for managing between-session therapeutic contact	2
		Knowledge of profession specific guidance regarding digital practice from accrediting body and how this interfaces with broader clinical competencies	8
		Knowledge of professional and boundary issues specific to online practice	6
		Knowledge of psychological frameworks specific to the online therapeutic relationship such as the online disinhibition effect and screen presence	6
		Knowledge of the evidence base for digital practice (process and outcome) and how this compares to in-person approaches	4
		Knowledge of the legal security requirements for conducting online psychological assessments, interventions and supervision	3
	Ability	Ability to recognise one's own competencies, training and supervision needs in relation to digital practice	3
		Ability to reflect on one's own digital practice	3
		Ability to work ethically, safely and effectively, attending to professional and clinical boundary issues relating to online practice	1
		Ability to appraise the advantages and drawbacks of digital tools with reference to the evidence base and recommend these to clients and services, in line with one's own clinical judgement	1
		Ability to adapt communication style and employ different functionalities of the technology	9
		Ability to deliver e-learning related to clinical practice and psychoeducation through synchronous and asynchronous methods (e-books, blogs, webinars) to clients and professionals	3

		Ability to manage boundaries if working remotely, e.g. conducting a video session via video chat from home	2
	Knowledge	Knowledge of communication processes which may affect digital practice across individual, system and group work (e.g. turn-taking and use of non-verbal information)	12
Leadership, consultation and supervision	Ability	Ability to engage in leadership and consultation to promote an open and curious approach amongst others to digital practice	11
		Ability to work in remote digital teams and participate in remote digital meetings	8
		Ability to follow organisational policies and procedures in the making, storing and sharing sensitive material for supervision or clinical purposes	1
	Knowledge	Ability to engage in remote supervision	1
		Knowledge of leadership and consultation as it relates to digital interventions	3
		Knowledge of digital supervision models and ways to adapt in-person supervision to online delivery	1
Personal and professional skills	Ability	An ability to reflect on one's own attitudes, skills and values regarding digital practice	12
		An ability to recognise and reflect on the limits of one's own competences when translating original in-person professional training to online work	12
	Knowledge	Knowledge of one's own attitudes, skills and values regarding digital practice	7
Evaluation and research	Ability	Ability to monitor patient experience and patient-reported outcomes using digital methods	1
		Ability to critically appraise digital tools and interventions and use evidence base to inform selection of these for clinical and research purposes	1
	Knowledge	Knowledge of the evidence base for digital practice (process and outcome) and how these compare to in-person approaches	1
Clinical Information Governance	Knowledge	Knowledge of information governance and legal context of information storage and sharing – including the Data Protection Act	2
		Knowledge of clinical governance and professional context in relation to digital practice, including the legal frameworks for practice, clinical risk management and clinical safety online	1

SIP Appendix G: Summary of features of clinical operations during remote-working

Table 11. Summary of features of clinical operations when working remotely with children and young people within the NDC-P

Theme	Content	Quote
Developing flexible clinical protocol for remote delivery	It is important that the design and application of the OVAAT as well as therapy intervention is flexible to correspond to the needs of each individual young person	<i>“As part of the OVAAT as well on the top, it says that you don't have to do the activities in order. You can you can do them in different orders. So it depends on some children are better with direct questions. Some are better with a more practical element. So you ideally use your judgement in how the child is doing to decide what order you do the activities in...”</i> Speech and Language Therapist <i>“So I think a lot of it was about checking with the young person and with their family about their preference and what they could do... trying to facilitate whatever they might need in order to do it this way. So changing length of sessions, time of day, or even day that I was offering to have a contact with them. And just allowing them more and even more space within the session to be dysregulated, I guess.”</i> Clinical Nurse Specialist <i>“I remember saying to [the young people], like, this is really weird, but we're doing it, so if you get freaked out, you don't have to stay on, and if you don't want to look at the camera, it's fine. If you want to turn your head and speak to me from the side, it's absolutely fine. If you want to go off screen, and that's also fine. As long as there's kind of a structure to the review, it can be really quite flexible...”</i> Lead Clinical Psychologist
	There should be a greater emphasis on theoretical knowledge required to deliver clinical protocol remotely	<i>“So I'd always want someone to have a really secure knowledge of the signs and symptoms of autism and the DSM criteria. And I think they've got to have really adequate skills in those areas.... But because the OVAAT is more informal [than the ADOS], I think you need even more secure knowledge. You're going more on your clinical experience and knowledge. You need both... to be evidence-based, you need the information.”</i> Speech and Language Therapist
Differential effects of	There can be clinical benefits of delivering	<i>“We can be there a bit when the parent is saying to their child, “come on, you need to be here.... Come on, the</i>

remote working on attendance	remote assessment and intervention for an NDC population	<i>professional has taken the time to see us” and you can just say, “Actually, you know what, let's not add that extra pressure in right now”. Now, obviously, you give people a bit of freedom because you want a bit of genuine courage. But if it's having to become “you've got to do this”, then we can offer a different solution at that point... I think that makes a big difference. And there's been a couple of occasions where I've advocated for the child in front of their parents, I think they'd be more likely to engage. Whereas I think if I'd have said “give it a go, let's see how it goes” it would probably put them off even more.”</i> Lead Clinical Psychologist <i>“We should probably make it clear that a child needs to be present [for medication reviews]. So I've been thinking about perhaps as a team, kind of writing that into the appointment letter, whatever they get. But, but personally, whether there's anything that I can add to my consultation over the phone, I haven't thought about that, in particular”.</i> Nurse Prescriber
	Remote attendance reduces pressure for some young people and families and facilitates engagement with services	<i>“The biggest plus for those kids who can do this is that they don't have to either come out of school, get in a car, come all the way to clinic, come into our building, sit in a cramped reception with other children who might be having difficulties, which isn't great for young people with neurodevelopmental difficulties - to meet a stranger, have no escape, and then go back home. I think with this client group it is such an advantage... [It] means that we can offer kids things in an environment which suits them.”</i> Lead Clinical Psychologist
	There is increased liaison with other professional teams when working remotely	<i>“I actually, you know, in some ways, it's felt much more productive and organised doing remote working... because the meetings have been really well attended, the liaison with school has been really good. And yeah, it just feels as though people are more able to dial into these meetings and feel able to be there. Rather than I guess in the past where people have said, I can't travel, it's too far I can't leave school or I can't leave my.... So I think the attendance at meetings and get to all professionals together has been hugely improved... That's been really effective because we're not waiting on hearing back from somebody or, you know, social So essentially, you've got Social Care, education, third sector and comes together making decisions. So it's been really helpful.”</i> Occupational Therapist
	There can be limitations of remote working	<i>“I've had to hold off on anything that's trauma based, or anything that's too sensitive. So it tends to be that we are</i>

	related to engagement, relationship building and negotiating endings in therapy	<i>doing the much more behavioural stuff. And for some young people, we are containing them until... So there's a couple of young people on the waiting list for psychology, and that will need to be face-to-face because it's trauma based intervention, and they think you just can't do that."</i>
Reviewing challenges in assessing and managing risk remotely	Clinicians should recognise when there is a need for face-to-face risk assessment to identify more subtle risk indicators or monitor risky cases	Occupational Therapist <i>"With risk, a lot of it is how I feel and how well I know the family. So recently, we actually got a family in they've moved from Wales, I've never met them... And the whole thing just felt too complicated and mum was quite limited in her ability. And I was like, 'okay, I don't feel safe...' So a lot of it is my intuitive feeling, too. I didn't feel safe. We needed to see them. So I think I go a bit on guard... But that's what you do, I think the more clinical experience you have, and I suppose it's about the number of concerns you've got..."</i> Consultant Psychiatrist
Identifying access and resourcing issues for families.	It is important to address access issues that would preclude engagement with remotely-delivered services	<i>"Sometimes they don't have computers. That's the other thing... I think we assume everybody has access and they don't. Or if you've only just got a computer and it's not in your world, it's not your way of working, it can be incredibly overwhelming to suddenly be expected to click on a link and understand how to do it all."</i> Occupational Therapist

SIP Appendix H: Summary of organisational issues related to remote-working

Table 12. Summary of organisational issues related to remote working in the NDC-Pathway

Theme	Content	Quote
Top-down versus bottom-up: supporting professional autonomy	Clinicians were supported to shape professional role and contribute to remote working in an autonomous manner	<i>"I think we've also set up a culture in the team. That means that everybody feels they have a voice and everybody is valued. So in some ways that there is a hierarchy but in other ways, we're quite flat. And that was set that was there before the pandemic... There's no way that the leadership could have done everything that happened. It was because we already had this culture that we can help ourselves and do things ourselves that then people did it... So I think that part of it is because people have felt they could do things to help themselves. They didn't have to wait for something on high to come and tell them what to do."</i> Consultant Psychiatrist
		<i>"We had two people leading on developing a protocol for online, we have a working group with quite senior people as well to give feedback to that. And those two people very much piloted putting that out there."</i> Service Manager
		<i>"There was definitely encouragement. So lots of sharing of reports and asking how we're getting on with this new model. So I'd say there was encouragement, but not it wasn't forced upon us... I think a lot of the ideas are probably top down. But there's also flexibility within that."</i> Clinical Psychologist
A focus on supporting the team to function safely and effectively.	Leadership aimed to focus on protecting staff wellbeing alongside meeting clinical targets	<i>"And I think I think the senior management team that was important because we focused absolutely on keeping the team and our patients safe. So we very quickly set up a check in system in the morning and a check in system in the evening. We've had concerns about team members doing difficult assessments dealing with, you know, challenging things like self-harm or child abuse when they were sitting in their home. So we thought about all of those issues, we set up weekly reflections for our team."</i> Consultant Psychiatrist
	There were added challenges in holding clinical and professional	<i>"I think I'm storing things up and trying to do stuff on my own a bit more. So I don't think that's always been helpful. Or you have to send an email, you might not hear back for two days. And it's probably more work for them"</i>

boundaries when
working remotely

to have to respond through email. So I think it's made it harder to have joined up thinking about the case. And probably just takes a bigger toll on your workload, because you're having to book in a time to chat rather than just catch someone." Clinical Psychologist

Prioritising
continued
adaptation to
changing
circumstances.

The process of
making
adaptations was
recursive and
responsive to
client feedback

"Obviously we kept on doing tweaks to the template in line with what [feedback] people kind of gave us: was it too lengthy, wasn't it, and we flipped the report to ensure that confidentiality was there, the recommendations were still good." Service Manager

SIP Appendix I: Summary of core competencies for telehealth in NDC populations

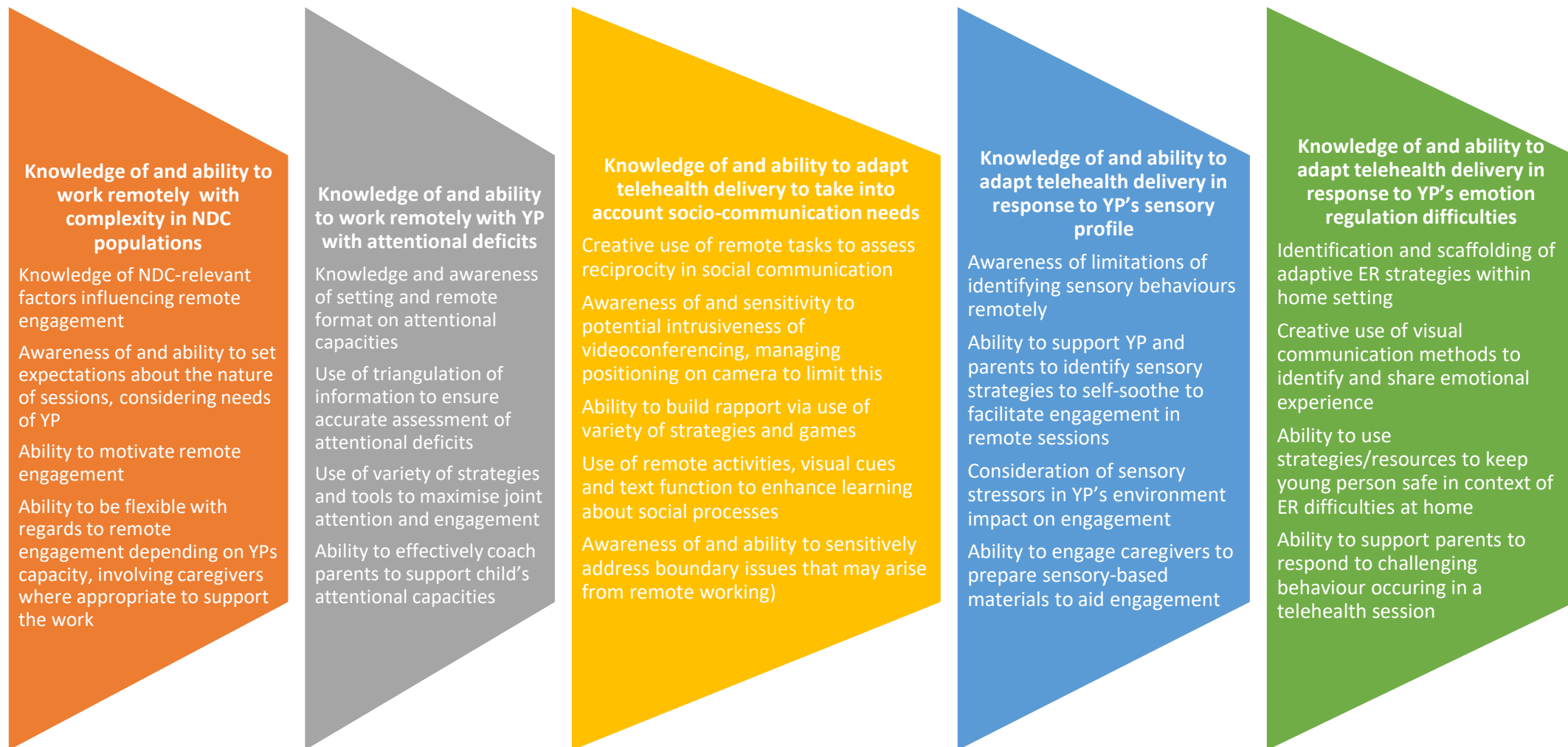


Figure 6. Condensed summary of core competencies from the NDC-DSCF

SIP Appendix J: Oxford Health NHS Foundation Trust, audit approval

From: Bryony Insua-Summerhays <bryony.insua-summerhays@psy.ox.ac.uk>
Sent: 26 May 2020 12:08
To: Clinical Audit (RNU) Oxford Health <Clinical.Audit@oxfordhealth.nhs.uk>
Subject: Clinical audit quality improvement form

Dear Clinical Audit team,

Please find the attached Clinical Audit Quality Improvement form for a project we are running in the Oxford Health Neurodevelopmental Conditions Pathways.

Please let me know if anything further is required.

Kind regards
Bryony

Bryony Insua-Summerhays | Trainee Clinical Psychologist | The Oxford Institute of Clinical Psychology Training and Research | The Oxford Centre for Psychological Health

Oxford Health NHS Foundation Trust | University of Oxford | Isis Education
Centre | Warneford Hospital | Oxford | OX3 7JX

bryony.insua-summerhays@hmc.ox.ac.uk | <https://oxicptr.web.ox.ac.uk>

On 20 Jul 2020, at 10:23, Rhodes Katie (RNU) Oxford Health
<Katie.Rhodes@oxfordhealth.nhs.uk> wrote:

Good morning Bryony,

Your audit proposal has now been approved.

Please see attached copy of an Audit Report Template in which will need to be completed and returned once the project is complete.

Kind Regards,

Katie Rhodes
Senior Team Administrator
Oxford Health NHS Foundation Trust
The Whiteleaf Centre
Bierton Road
Aylesbury

HP20 1EG

SIP Appendix K: Author guidelines for Journal of Autism and Developmental Disorders

MANUSCRIPT FORMAT

All JADD manuscripts should be submitted to Editorial Manager in 12-point Times New Roman with standard 1-inch borders around the margins. Text must be double-spaced; APA Publication Manual standards must be followed. As of January 20, 2011, the Journal has moved to a double-blind review process. Therefore, when submitting a new manuscript, DO NOT include any of your personal information (e.g., name, affiliation) anywhere within the manuscript. When you are ready to submit a manuscript to JADD, please be sure to upload these 3 separate files to the Editorial Manager site to ensure timely processing and review of your paper:

A title page with the running head, manuscript title, and complete author information. Followed by (page break) the Abstract page with keywords and the corresponding author e-mail information.

The blinded manuscript containing no author information (no name, no affiliation, and so forth).

Articles, Commentaries Brief Reports, Letters to the Editor

The preferred article length is 20-23 double-spaced manuscript pages long (not including title page, abstract, tables, figures, addendums, etc.) Manuscripts of 40 double-spaced pages (references, tables and figures counted as pages) have been published. The reviewers or the editor for your review will advise you if a longer submission must be shortened.

Special Issue Article: The Guest Editor may dictate the article length; maximum pages allowed will be based on the issue's page allotment.

Commentary: Approximately 20-25 double-spaced pages maximum, with fewer references and tables/figures than a full-length article.

A Brief Report: About 8 double-spaced pages with shorter references and fewer tables/figures. May not meet the demands of scientific rigor required of a JADD article – can be preliminary findings.

A Letter to the Editor is 6 or less double spaced pages with shorter references, tables and figures.

Style sheet for Letter to the Editor:

A title page with the running head, manuscript title, and complete author information including corresponding author e-mail information

The blinded manuscript containing no author information (no name, no affiliation, and so forth):-

- 6 or less double spaced pages with shorter references, tables and figures
- Line 1: "Letter to the Editor"
- Line 3: begin title (note: for "Case Reports start with "Case Report: Title")
- Line 6: Text begins; references and tables, figure caption sheet, and figures may follow (page break between each and see format rules)

Review your manuscript for these elements

1. Order of manuscript pages

Title Page with all Author Contact Information & Abstract with keywords and the corresponding author e-mail information.

Blinded Manuscript without contact information and blinded Abstract, and References
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Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

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Please ensure you provide all relevant editable source files. Failing to submit these source files might cause unnecessary delays in the review and production process.

The title page should include: The name(s) of the author(s); A concise and informative title; The affiliation(s) and address(es) of the author(s); The e-mail address, telephone and fax numbers of the corresponding author

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Please provide an abstract of 120 words or less. The abstract should not contain any undefined abbreviations or unspecified references. Please provide 4 to 6 keywords which can be used for indexing purposes.

Manuscripts should be submitted in Word.

- Use a normal, plain font (e.g., 10-point Times Roman) for text.
- Use italics for emphasis.
- Use the automatic page numbering function to number the pages.
- Do not use field functions.
- Use tab stops or other commands for indents, not the space bar.
- Use the table function, not spreadsheets, to make tables.
- Use the equation editor or MathType for equations.
- Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

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- Please use no more than three levels of displayed headings.
- Abbreviations should be defined at first mention and used consistently thereafter.
- Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.
- Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.
- Always use footnotes instead of endnotes.

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

The body of the manuscript should begin on a separate page. The manuscript page header (if used) and page number should appear in the upper right corner. Type the title of the paper centered at the top of the page, add a hard return, and then begin the text using the format noted above. The body should contain:

- Introduction (The introduction has no label.)
- Methods (Center the heading. Use un-centered subheadings such as: Participants, Materials, Procedure.)
- Results (Center the heading.)
- Discussion (Center the heading.)
- Headings: Please use no more than three levels of displayed headings.
 - Level 1: Centered
 - Level 2: Centered Italicized
 - Level 3: Flush left, Italicized

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Center the label “Footnotes” at the top of a separate page. Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables. Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes. Type all content footnotes and copyright permission footnotes together, double-spaced, and numbered consecutively in the order they appear in the article. Indent the first line of each footnote 5-7 spaces. The number of the footnote should correspond to the number in the text. Superscript arabic numerals are used to indicate the text material being footnoted.

Author Note

The first paragraph contains a separate phrase for each author's name and the affiliations of the authors at the time of the study (include region and country).

The second paragraph identifies any changes in the author affiliation subsequent to the time of the study and includes region and country (wording: "authors name is now at affiliation".)

The third paragraph is Acknowledgments. It identifies grants or other financial support and the source, if appropriate. It is also the place to acknowledge colleagues who assisted in the study and to mention any special circumstances such as the presentation of a version of the paper at a meeting, or its preparation from a doctoral dissertation, or the fact that it is based on an earlier study.

The fourth paragraph states, "Correspondence concerning this article should be addressed to..." and includes the full address, telephone number and email address of the corresponding author. Please always use internationally accepted signs and symbols for units (SI units). Generic names of drugs and pesticides are preferred; if trade names are used, the generic name should be given at first mention. Please use the standard mathematical notation for formulae, symbols etc.: Italic for single letters that denote mathematical constants, variables, and unknown quantities Roman/upright for numerals, operators, and punctuation, and commonly defined functions or abbreviations, e.g., cos, det, e or exp, lim, log, max, min, sin, tan, d (for derivative) Bold for vectors, tensors, and matrices.

References

Cite references in the text by name and year in parentheses. Some examples:

Negotiation research spans many disciplines (Thompson, 1990).

This result was later contradicted by Becker and Seligman (1996).

This effect has been widely studied (Abbott, 1991; Barakat et al., 1995; Kelso & Smith, 1998; Medvec et al., 1999).

Authors are encouraged to follow official APA version 7 guidelines on the number of authors included in reference list entries (i.e., include all authors up to 20; for larger groups, give the first 19 names followed by an ellipsis and the final author's name). However, if authors shorten the author group by using et al., this will be retained.

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The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text.

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Journal names and book titles should be *italicized*.

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This journal is committed to upholding the integrity of the scientific record. As a member of the Committee on Publication Ethics (COPE) the journal will follow the COPE guidelines on how to deal with potential acts of misconduct.

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The manuscript should not be submitted to more than one journal for simultaneous consideration.

The submitted work should be original and should not have been published elsewhere in any form or language (partially or in full), unless the new work concerns an expansion of previous work. (Please provide transparency on the re-use of material to avoid the concerns about text-recycling ('self-plagiarism').

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Authors should avoid untrue statements about an entity (who can be an individual person or a company) or descriptions of their behavior or actions that could potentially be seen as

personal attacks or allegations about that person. Research that may be misapplied to pose a threat to public health or national security should be clearly identified in the manuscript (e.g. dual use of research). Examples include creation of harmful consequences of biological agents or toxins, disruption of immunity of vaccines, unusual hazards in the use of chemicals, weaponization of research/technology (amongst others).

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Upon request authors should be prepared to send relevant documentation or data in order to verify the validity of the results presented. This could be in the form of raw data, samples, records, etc. Sensitive information in the form of confidential or proprietary data is excluded.

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- an expression of concern may be placed with the article
- or in severe cases retraction of the article may occur.

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Authors are welcome to suggest suitable reviewers and/or request the exclusion of certain individuals when they submit their manuscripts. When suggesting reviewers, authors

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Authorship principles

These guidelines describe authorship principles and good authorship practices to which prospective authors should adhere to.

Authorship clarified

The Journal and Publisher assume all authors agreed with the content and that all gave explicit consent to submit and that they obtained consent from the responsible authorities at the institute/organization where the work has been carried out, **before** the work is submitted. The Publisher does not prescribe the kinds of contributions that warrant authorship. It is recommended that authors adhere to the guidelines for authorship that are applicable in their specific research field. In absence of specific guidelines it is recommended to adhere to the following guidelines: All authors whose names appear on the submission

- 1) made substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data; or the creation of new software used in the work;
- 2) drafted the work or revised it critically for important intellectual content;
- 3) approved the version to be published; and
- 4) agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Disclosures and declarations

All authors are requested to include information regarding sources of funding, financial or non-financial interests, study-specific approval by the appropriate ethics committee for research involving humans and/or animals, informed consent if the research involved human participants, and a statement on welfare of animals if the research involved animals (as appropriate).

The decision whether such information should be included is not only dependent on the scope of the journal, but also the scope of the article. Work submitted for publication may have implications for public health or general welfare and in those cases it is the responsibility of all authors to include the appropriate disclosures and declarations.

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One author is assigned as Corresponding Author and acts on behalf of all co-authors and ensures that questions related to the accuracy or integrity of any part of the work are appropriately addressed.

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- managing all communication between the Journal and all co-authors, before and after publication;*
- providing transparency on re-use of material and mention any unpublished material (for example manuscripts in press) included in the manuscript in a cover letter to the Editor;
- making sure disclosures, declarations and transparency on data statements from all authors are included in the manuscript as appropriate (see above).

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Examples of such statement(s) are shown below:

- Free text:

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by [full name], [full name] and [full name]. The first draft of the manuscript was written by [full name] and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

- Conceptualization: [full name], ...; Methodology: [full name], ...; Formal analysis and investigation: [full name], ...; Writing - original draft preparation: [full name, ...]; Writing - review and editing: [full name], ...; Funding acquisition: [full name], ...; Resources: [full name], ...; Supervision: [full name],....

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For articles that are based primarily on the **student's dissertation or thesis**, it is recommended that the student is usually listed as principal author:

Affiliation

The primary affiliation for each author should be the institution where the majority of their work was done. If an author has subsequently moved, the current address may additionally be stated. Addresses will not be updated or changed after publication of the article.

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Authors are strongly advised to ensure the correct author group, the Corresponding Author, and the order of authors at submission. Changes of authorship by adding or deleting authors, and/or changes in Corresponding Author, and/or changes in the sequence of authors are **not** accepted **after acceptance** of a manuscript.

Please make sure that the names of all authors are present and correctly spelled, and that addresses and affiliations are current. Adding and/or deleting authors at revision stage are generally not permitted, but in some cases it may be warranted. Reasons for these changes in authorship should be explained. Approval of the change during revision is at the discretion of the Editor-in-Chief. Please note that journals may have individual policies on adding and/or deleting authors during revision stage.

Authors are recommended to use their ORCID ID when submitting an article for consideration or acquire an ORCID ID via the submission process.

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To ensure objectivity and transparency in research and to ensure that accepted principles of ethical and professional conduct have been followed, authors should include information regarding sources of funding, potential conflicts of interest (financial or non-financial), informed consent if the research involved human participants, and a statement on welfare of animals if the research involved animals. Authors should include the following statements (if applicable) in a separate section entitled “Compliance with Ethical Standards” when submitting a paper:

- Disclosure of potential conflicts of interest
- Research involving Human Participants and/or Animals
- Informed consent

Please note that standards could vary slightly per journal dependent on their peer review policies (i.e. single or double blind peer review) as well as per journal subject discipline.

Before submitting your article check the instructions following this section carefully.

The corresponding author should be prepared to collect documentation of compliance with ethical standards and send if requested during peer review or after publication.

The Editors reserve the right to reject manuscripts that do not comply with the above-mentioned guidelines. The author will be held responsible for false statements or failure to fulfill the above-mentioned guidelines.

Authors are requested to disclose interests *that are directly or indirectly related to the work submitted for publication*. Interests within the last 3 years of beginning the work (conducting the research and preparing the work for submission) should be reported. Interests outside the 3-year time frame must be disclosed if they could reasonably be perceived as influencing the submitted work. Disclosure of interests provides a complete

and transparent process and helps readers form their own judgments of potential bias. This is not meant to imply that a financial relationship with an organization that sponsored the research or compensation received for consultancy work is inappropriate.

Interests that should be considered and disclosed but are not limited to the following:

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Primary research articles require a disclosure statement. Review articles present an expert synthesis of evidence and may be treated as an authoritative work on a subject. Review articles therefore require a disclosure statement.

Main Research Project Appendices **MRP Appendix A: CORE-10**

CLINICAL **O**UTCOMES in **R**OUTINE **E**VALUATION

CORE-10 **Screening** **Measure**

Site ID						Stage Completed S Screening R Referral A Assessment F First Therapy Session P Pre-therapy (unspecified) D During Therapy L Last therapy session X Follow up 1 Y Follow up 2				
Client ID										
	letters only	numbers only								
Sub codes										
	Therapist ID	numbers only (1)	numbers only (2)							
Date form given	/ /					Episode Stage				
	D	D	M	M	Y	Y	Y	Y	Gender ☐ Male ☐ Female	Age

IMPORTANT - PLEASE READ THIS FIRST

This form has 10 statements about how you have been OVER THE LAST WEEK.
 Please read each statement and think how often you felt that way last week.
 Then tick the box which is closest to this.
Please use a dark pen (not pencil) and tick clearly within the boxes.

Over the last week...

	Not at all	Only occasionally	Sometimes	Often	Most or all of the time
1 I have felt tense, anxious or nervous	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
2 I have felt I have someone to turn to for support when needed	☐ 4	☐ 3	☐ 2	☐ 1	☐ 0
3 I have felt able to cope when things go wrong	☐ 4	☐ 3	☐ 2	☐ 1	☐ 0
4 Talking to people has felt too much for me	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
5 I have felt panic or terror	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
6 I made plans to end my life	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
7 I have had difficulty getting to sleep or staying asleep	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
8 I have felt despairing or hopeless	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
9 I have felt unhappy	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
10 Unwanted images or memories have been distressing me	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

Total (Clinical Score*)

*** Procedure:** Add together the item scores, then divide by the number of questions completed to get the mean score, then multiply by 10 to get the Clinical Score.
Quick method for the CORE-10 (if all items completed): Add together the item scores to get the Clinical Score.

Thank you for your time in completing this questionnaire

CORE-10 Copyright CORE System Trust (February 2006)

DEACTIVATED

MRP Appendix B: Reflective Functioning Questionnaire

Please work through the next 54 statements. For each statement, choose a number between 1 and 7 to say how much you disagree or agree with the statement, and write the number beside the statement. Do not think too much about it – your initial responses are usually the best. Thank you.

Use the following scale from 1 to 7:

Strongly 1 disagree	2	3	4	5	6	7	Strongly agree
------------------------	---	---	---	---	---	---	-------------------

1. ___ People's thoughts are a mystery to me
2. ___ It's easy for me to figure out what someone else is thinking or feeling
3. ___ My picture of my parents changes as I change
4. ___ I worry a great deal about what people are thinking and feeling
5. ___ I pay attention to the impact of my actions on others' feelings
6. ___ It takes me a long time to understand other people's thoughts and feelings
7. ___ I know exactly what my close friends are thinking
8. ___ I always know what I feel
9. ___ How I feel can easily affect how I understand someone else's behaviour
10. ___ I can tell how someone is feeling by looking at their eyes
11. ___ I realise that I can sometimes misunderstand my best friends' reactions
12. ___ I often get confused about what I am feeling
13. ___ I wonder what my dreams mean
14. ___ Understanding what's on someone else's mind is never difficult for me

15. ___ I believe that my parents' behaviour towards me should not be explained by how they were brought up
16. ___ I don't always know why I do what I do
17. ___ I have noticed that people often give advice to others that they actually wish to follow themselves
18. ___ It's really hard for me to figure out what goes on in other people's heads
19. ___ Other people tell me I'm a good listener
20. ___ When I get angry I say things without really knowing why I am saying them
21. ___ I'm often curious about the meaning behind others' actions
22. ___ I really struggle to make sense of other people's feelings
23. ___ I often have to force people to do what I want them to do
24. ___ Those close to me often seem to find it difficult to understand why I do things
25. ___ I feel that, if I am not careful, I could intrude into another person's life
26. ___ Other people's thoughts and feelings are confusing to me
27. ___ I can mostly predict what someone else will do
28. ___ Strong feelings often cloud my thinking
29. ___ In order to know exactly how someone is feeling, I have found that I need to ask them
30. ___ My intuition about a person is hardly ever wrong
31. ___ I believe that people can see a situation very differently based on their own beliefs and experiences
32. ___ Sometimes I find myself saying things and I have no idea why I said them
33. ___ I like to think about the reasons behind my actions
34. ___ I normally have a good idea of what is on other people's minds

- 35. ___ I trust my feelings
- 36. ___ When I get angry I say things that I later regret
- 37. ___ I get confused when people talk about their feelings
- 38. ___ I am a good mind reader
- 39. ___ I frequently feel that my mind is empty
- 40. ___ If I feel insecure I can behave in ways that put others' backs up
- 41. ___ I find it difficult to see other people's points of view
- 42. ___ I usually know exactly what other people are thinking
- 43. ___ I anticipate that my feelings might change even about something I feel strongly about
- 44. ___ Sometimes I do things without really knowing why
- 45. ___ I pay attention to my feelings
- 46. ___ In an argument, I keep the other person's point of view in mind
- 47. ___ My gut feeling about what someone else is thinking is usually very accurate
- 48. ___ Understanding the reasons for people's actions helps me to forgive them
- 49. ___ I believe that there is no RIGHT way of seeing any situation
- 50. ___ I am better guided by reason than by my gut
- 51. ___ I can't remember much about when I was a child
- 52. ___ I believe there's no point trying to guess what's on someone else's mind
- 53. ___ For me actions speak louder than words
- 54. ___ I believe other people are too confusing to bother figuring out

MRP Appendix C: The Reading the Mind in the Eyes test

For each set of eyes, choose and circle which word best describes what the person in the picture is thinking or feeling. You may feel that more than one word is applicable but please choose just one word, the word which you consider to be most suitable. Before making your choice, make sure that you have read all 4 words. You should try to do the task as quickly as possible but you will not be timed.

Practice

jealous

panicked



arrogant

hateful

1

playful

comforting



irritated

bored

2

terrified

upset



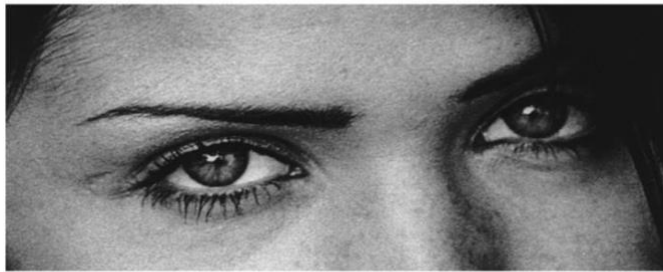
arrogant

annoyed

3

joking

flustered



desire

convinced

4

joking

insisting



amused

relaxed

5

irritated

sarcastic



worried

friendly

aghast

fantasizing



impatient

alarmed

7

apologetic

friendly



uneasy

dispirited

despondent

relieved



shy

excited

annoyed

hostile



horrified

preoccupied

cautious

insisting



bored

aghast

terrified

amused

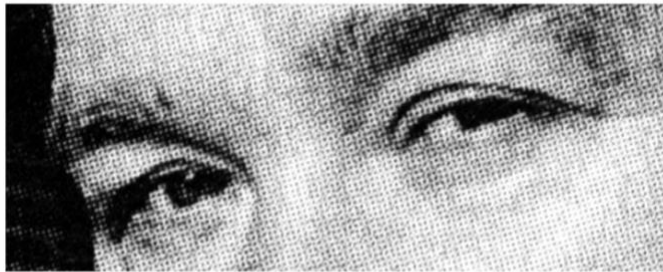


regretful

flirtatious

indifferent

embarrassed



sceptical

dispirited

13

decisive

anticipating



threatening

shy

irritated

disappointed



depressed

accusing

15

contemplative

flustered



encouraging

amused

irritated

thoughtful



encouraging

sympathetic

doubtful

affectionate



playful

aghast

decisive

amused



aghast

bored

arrogant

grateful



sarcastic

tentative

dominant

friendly



guilty

horrified

embarrassed

fantasizing



confused

panicked

preoccupied

grateful



insisting

imploring

contented

apologetic



defiant

curious

pensive

irritated

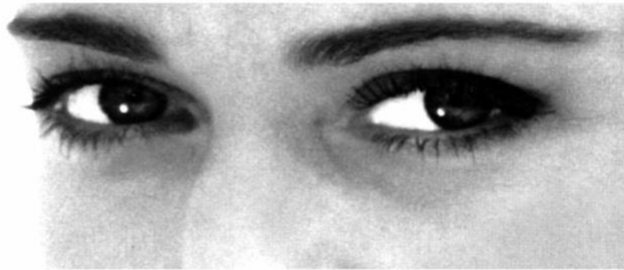


excited

hostile

panicked

incredulous



despondent

interested

alarmed

shy



hostile

anxious

joking

cautious



arrogant

reassuring

interested

joking



affectionate

contented

impatient

aghast



irritated

reflective

grateful

flirtatious



hostile

disappointed

ashamed

confident



joking

dispirited

serious

ashamed



bewildered

alarmed

embarrassed

guilty



fantasizing

concerned

aghast

baffled



distrustful

terrified

puzzled

nervous



insisting

contemplative

ashamed

suspicious



indecisive

nervous

		Answers - Adults			
P	jealous	panicked	arrogant	hateful	M
1	playful	comforting	irritated	bored	M
2	terrified	upset	arrogant	annoyed	M
3	joking	flustered	desire	convinced	F
4	joking	insisting	amused	relaxed	M
5	irritated	sarcastic	worried	friendly	M
6	aghast	fantasizing	impatient	alarmed	F
7	apologetic	friendly	uneasy	dispirited	M
8	despondent	relieved	shy	excited	M
9	annoyed	hostile	horrified	preoccupied	F
10	cautious	insisting	bored	aghast	M
11	terrified	amused	regretful	flirtatious	M
12	indifferent	embarrassed	sceptical	dispirited	M
13	decisive	anticipating	threatening	shy	M
14	irritated	disappointed	depressed	accusing	M
15	contemplative	flustered	encouraging	amused	F
16	irritated	thoughtful	encouraging	sympathetic	M
17	doubtful	affectionate	playful	aghast	F
18	decisive	amused	aghast	bored	F
19	arrogant	grateful	sarcastic	tentative	F
20	dominant	friendly	guilty	horrified	M
21	embarrassed	fantasizing	confused	panicked	F
22	preoccupied	grateful	insisting	imploring	F
23	contented	apologetic	defiant	curious	M
24	pensive	irritated	excited	hostile	M
25	panicked	incredulous	despondent	interested	F
26	alarmed	shy	hostile	anxious	M
27	joking	cautious	arrogant	reassuring	F
28	interested	joking	affectionate	contented	F
29	impatient	aghast	irritated	reflective	F
30	grateful	flirtatious	hostile	disappointed	F
31	ashamed	confident	joking	dispirited	F
32	serious	ashamed	bewildered	alarmed	M
33	embarrassed	guilty	fantasizing	concerned	M
34	aghast	baffled	distrustful	terrified	F
35	puzzled	nervous	insisting	contemplative	F
36	ashamed	nervous	suspicious	indecisive	M

MRP Appendix D: HRA ethical approval confirmation



Miss Bryony Insua-Summerhays
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HCRW.approvals@wales.nhs.uk

10 June 2020

Dear Miss Insua-Summerhays

**HRA and Health and Care
Research Wales (HCRW)
Approval Letter**

Study title:	Investigating differences in social cognition in women with diagnoses of Autism Spectrum Conditions and Emotionally Unstable Personality Disorder
IRAS project ID:	273962
Protocol number:	1
REC reference:	20/WM/0114
Sponsor	University of Oxford, Clinical Trials and Research Governance

I am pleased to confirm that [HRA and Health and Care Research Wales \(HCRW\) Approval](#) has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the “Information to support study set up” section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report

(including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see [IRAS Help](#) for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?

HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to [obtain local agreement](#) in accordance with their procedures.

What are my notification responsibilities during the study?

The standard conditions document "[After Ethical Review – guidance for sponsors and investigators](#)", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The [HRA website](#) also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?

Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **273962**. Please quote this on all correspondence.

Yours sincerely,
Rekha Keshvara

Approvals Manager

Email: approvals@hra.nhs.uk

MRP Appendix E: Author guidelines for Journal of Clinical Psychology

1. Submission and Peer Review Process

Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online at <https://mc.manuscriptcentral.com/jclp>. Please note: In Session articles are published by invitation only. Authors will receive an invitation with a custom link to ScholarOne. For help with submissions, please contact: Swathi Kumaran at JCLPjournal@wiley.com. For help with article preparation [Wiley Editing Services](#) offers expert help with English Language Editing, as well as translation, manuscript formatting, and figure preparation.

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The title page of the manuscript, including statements relating to our ethics and integrity policies (see information on these policies below in Section 1):

- data availability statement
- funding statement
- conflict of interest disclosure
- ethics approval statement
- patient consent statement
- permission to reproduce material from other sources
- clinical trial registration

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Your co-author details, including affiliation and email address.

An ORCID ID, freely available at <https://orcid.org>.

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This journal expects data sharing. Please review Wiley's policy [here](#), where you will be able to see and select the availability statement that is right for your submission.

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