DClinPsych Assignment Cover Sheet

A completed copy of this cover sheet must be included at the front of all submissions. Your assignment will not be accepted without this attached.

Student Number	32232187
Module Code and Name	PSYC8047 Research Thesis
Cohort Year	2020
Submission Date	August 2023
Assignment Title	Self-states, attachment and dissociation: relationships and measurement
Word Count	28,685

University of Southampton Research Repository

University of Southampton

Faculty of Environmental and Life Sciences

School of Psychology

Self-states, attachment and dissociation: relationships and measurement

by

Clarissa Anne Lord

ORCID ID: 0000-0002-9413-3466

Thesis for the degree of Doctorate in Clinical Psychology

August 2023

Word count: 28,685

University of Southampton

<u>Abstract</u>

Faculty of Environmental and Life Sciences

School of Psychology

Thesis for the degree of Doctorate in Clinical Psychology

Self-states, attachment and dissociation: relationships and measurement

by

Clarissa Anne Lord

Within theoretical approaches established links have been found between individual's self-states, dissociative experiences, and attachment style. However, stigmatisation and the lack of awareness around dissociative experiences is mirrored in the limited evidence base surrounding the measurement of dissociation, self-states and the part attachment plays.

A systematic review was completed which aimed to understand the relational processes between attachment and dissociation in clinical samples. A total of 16 papers were reviewed and there was evidence that anxious, avoidant, and fearful attachment were directly linked with dissociative experiences. There were also several indirect associations within different clinical presentations between attachment and dissociation, such as trauma, psychosis, and substance misuse. The benefit of measuring dissociation and attachment style within clinical intervention to inform treatment planning was highlighted.

As a result of this, the empirical paper focuses on assessing the psychometric properties of a new tool to measure dissociation at the personality level, between modes or self-states, rooted in cognitive behavioural theory (Dissociation – Integration of Self-States Scale; D-ISS). An exploratory factor analysis was conducted on Sample 1 (344 young adults), and a confirmatory factor analysis and psychometric tests were conducted on Sample 2 (383 adults). The five-factor model showed an overall good fit from the CFA. Additionally, the D-ISS showed good internal consistency and test-retest reliability. Low to null correlations were found with divergent subscales, and low to moderate correlations with the DES-II.

These papers have contributed to the dissociation literature base by the consideration of relational factors between attachment and dissociation, as well as providing a new valid and reliable measure for clinical use of dissociation between modes/self-states.

Table of Contents

Table of Contents

Table of Contents

Table of Tables

Table of Figures

x

Research Thesis: Declaration of Authorship

Print name: Clarissa Anne Lord

Title of thesis: Self-states, attachment and dissociation: relationships and measurement

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

 Signature: Clarissa Lord ....Date: 15.05.2023 ....

Acknowledgements

I would like to thank my supervisors Dr Tess Maguire and Dr Fiona Kennedy for their unwavering support throughout my thesis journey. I am so grateful for their knowledge and experience within this field which was always delivered with such kindness and compassion. The excitement we shared together developing this research will always be a memory that I hold dearly.

A big thank you to Dr Katy Smart who provided a great deal of support with the development of the measure. I would like to thank Dr Clare Hart & Dr Sarah Kirby for their knowledge and wisdom for any statistical queries.

I would like to thank my participants that took part in the questionnaires, without them, developing and validating our new measure would never have been possible, so thank you.

A special thanks to my mum, dad, sister, and brother. None of this would have been possible without their motivational speeches and magical ability to always make me laugh. A big thank you to my friends for their continuous support throughout this process, my sanity and I are so grateful for you. Finally, to my partner Callum, your kindness & unconditional support will always be cherished.

Definitions and Abbreviations

AAI...................................... Adult Attachment Interview

BPD..................................... Borderline Personality Disorder

CAV..................................... Cognitive Attachment model of Voices

CDS..................................... Cambridge Depersonalisation Scale

CES .... Curious Experiences Survey

CFA .... Confirmatory Factor Analysis

CFI .... Comparative Fit Index

COSMIN............................... Consensus-based Standards for the selection of health Measurement Instruments

D-ISS .... Dissociation – Integration of Self-states Scale

DEMO.................................. Dissociative Experiences Measure, Oxford

DES/DES-II........................... Dissociative Experiences Scale

DID .... Dissociative Identity Disorder

DIS-Q................................... Dissociation Questionnaire

DSM-5 .... Diagnostic and Statistical Manual of Mental Disorders (5th edition)

ECR/ECR-R........................... The Experiences in Close Relationships-Revised

EEG..................................... Electroencephalogram

EFA .... Exploratory Factor Analysis

EPHPP.................................. Effective Public Health Practice Project

ERGO................................... Ethics and Research Governance Online

FND .... Functional Neurological Disorder

SPSS.................................... Statistical Package for the Social Sciences

ICC...................................... Intra-class Correlation Coefficient

ISSTD .... The International Society for the Study of Trauma and Dissociation

KMO .... Kaiser-Meyer-Olkin

MI....................................... Modification Indices

Definitions and Abbreviations

MID .... Multidimensional Inventory of Dissociation

NICE .... National Institute for Health and Care Excellence

PAS...................................... Perceptual Alteration Scale

PRISMA .... Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PROSPERO........................... International Prospective Register of Systematic Reviews

PTM..................................... Power Threat Meaning Framework

PTSD.................................... Post-Traumatic Stress Disorder

QED..................................... Questionnaire on Experiences of Dissociation

RMSEA .... Root Mean Squared Error of Approximation

RQ .... Relationship Questionnaire

SCID-D .... Structured Clinical Interview for DSM-IV Dissociative Disorders

SCM..................................... Sociocognitive Model

SDQ-20................................ Somatoform Dissociation Questionnaire

SEM..................................... Structural Equation Modelling

SRMR .... Standardised Root Mean Square Residual

TLI .... Tucker-Lewis Index

TM....................................... Trauma Model

VIF .... Variance Inflation Factor

WDS .... Wessex Dissociation Scale

Chapter 1   Attachment style and dissociative experiences: a systematic review of relational processes and a guide to future enquiry

The following paper was written to follow the 'Psychology and Psychotherapy: Theory, Research and Practice' journal author guidelines. The guidelines can be found at:

https://bpspsychub.onlinelibrary.wiley.com/hub/journal/20448341/homepage/forauthors.html

Chapter 1

1.1   Abstract

Purpose. Theoretical evidence has documented the relationship between attachment and dissociation, with empirical studies identifying the relationships between both concepts and how they may impact mental health experiences. This systematic review aims to understand the relational processes between attachment and dissociation in clinical samples, as well as present a guide to future inquiry.

Method. A database search was undertaken (APA PsychINFO, Medline, Web of Science) for papers that matched the inclusion criteria. Relevant data was extracted from the papers, and they were quality assessed using the EPHPP Tool for quantitative studies. Narrative synthesis was used as the method of analysis.

Results. In total, 16 papers were eligible for the review, which provided a total of 2,294 participants. There is evidence that anxious, avoidant, and fearful attachment are directly associated with increased risk and severity of dissociative experiences. Dissociation and attachment were involved in several different relational processes within differing clinical samples. Biological factors were explored due to tentative evidence suggesting dissociation and attachment can impact brain activity, and also be influenced by genetic factors.

Conclusions. Anxious, avoidant, and fearful attachment styles increase the risk of having dissociative experiences. There are various mental health problems in which attachment and dissociation play a part, including, trauma, psychotic symptomology, and substance misuse. Tentative evidence was found between certain biological factors, dissociation and attachment. Replication studies are needed so that conclusions can be drawn more confidently, and the findings can contribute towards psychological intervention for individuals experiencing dissociation.

1.2 Introduction

1.2.1 Dissociation

1.2.1.1 Definition of dissociation

The clinical term dissociation was first documented by Pierre Janet in the late 1800s (Van der Hart & Horst, 1989). Janet defined dissociation as an "abnormal mental integration of the different contents resulting in a lack of integration among two or more systems of ideas and functions that constitute personality" (Janet, 1907, cited in Scalabrini et al., 2020 pg. 2). More recently, the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013, p. 291) defines dissociation as a "disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior".

1.2.1.2 Models of dissociation

There are two main theoretical models of dissociation within the literature. The first relating to Janet's definition documented above, named the Trauma Model (TM). This is the idea that dissociation is best understood from a defence model, that those who are exposed to experiences of trauma, develop dissociation as a defensive mechanism (Liotti, 1992). It is theorised that this occurs from a failure to associate overpowering emotions and memories and acts as a coping strategy to allow detachment from insufferable experiences (Janet, 1889; Kennedy et al., 2004; Van der Kolk et al., 1989). Alternatively, the Sociocognitive Model (SCM) is mostly linked with dissociative identity disorder (DID) and suggests that the diagnosis is a construct formed by society/popular culture, a fantasy experienced by the individual, or has been implied by the health care professional (Stokoe, 2014).

However, both of these models have criticisms within the literature. Firstly, there are concerns raised around the research for the TM as some research contains highly variable correlations, with the majority being based on cross-sectional self-reporting data (Lynn et al., 2022). Additionally, the TM does not account for those individuals who develop severe dissociative experiences with no report of trauma, as well as limited consideration of whether the relationship has direct associations or whether they associate through mediating factors (Lynn et al., 2022). Regarding the SCM, weak correlations have been found in research between dissociation and suggestibility (Lynn et al., 2022), and those countries with limited awareness of dissociation, such as Turkey and China, shows diagnoses of DID are present (Chui et al., 2017). This highlights that the contrasting models for dissociation both have criticisms. Taking these into account and the stance of the

systematic review, it was decided that the trauma model is most fitting and will be how dissociation is formulated due to the relationship with trauma that is discussed within the paper.

1.2.1.3 Dissociative experiences and treatment guidance

Examples of dissociative experiences include amnesia, identity confusion, derealisation, and depersonalisation. These experiences are required in specific diagnoses including acute stress disorder, borderline personality disorder (BPD), and post-traumatic stress disorder (PTSD) (Rădulescu et al., 2020). Research has been completed which shows links between dissociation and other mental health diagnoses including anxiety and depression, as well as impacting paranoia, grandiosity, and cognitive distortion (Černis et al., 2021; Longden et al., 2020). Furthermore, severe experiences of dissociation have been associated with dissociative disorders, PTSD, BPD, and somatoform disorders, and mid-range experiences have been linked to anxiety, eating disorders, and psychosis (Rădulescu et al., 2020).

However, despite research indicating the presence of dissociation in the above psychopathology, treatment related research in this area is sparce (Sar, 2014; Černis et al., 2021), with no treatment guidance from the National Institute for Health and Care Excellence (NICE). Yet, dissociative experiences are often the antecedents that are reported prior to formal diagnosis of mental health presentations such as PTSD, personality disorder, and dissociative disorders (Carrion & Steiner, 2000). This highlights the importance of early identification and intervention for individuals with experiences of dissociation, with research showing a reduction in suicidal ideation, and an improved overall treatment cost in these populations (Rădulescu et al., 2020).

1.2.2 Attachment

Attachment theory, developed originally by Bowlby (1977), defines attachment as an innate developmental survival mechanism, where the infant develops a strong bond with the primary caregiver (Bretherton, 1992). The interactions between caregiver and infant result in 'internal working models' being created of the infant's view of themselves and the world around them (Bowlby, 1982; Bretherton, 1992). Secure attachment occurs when a caregiver has the ability to respond with sensitivity to their child's distress (De Wolff & van Ijzendoorn, 1997). This attachment representation is reliant on the development of a secure base, with availability, flexibility, sensitivity, and reliable interaction from the caregiver (Bowlby, 1977; Bucci et al., 2015; Svanberg et al., 2010). This attachment style in adulthood is linked to the "ability to regulate affect and manage distress, a positive self-image and security and autonomy in forming relationships with others" (Pollard et al., 2020, pg. 336).

Insecure attachment occurs as a result of unresponsiveness from caregivers during times of distress for the infant (Pollard et al., 2020). There are two attachment styles which are classified under the umbrella of insecure attachment, which includes attachment anxiety and attachment avoidance (Mikulincer & Shaver, 2008). These attachment terms are taken from the two-dimensional model of attachment, a framework which suggests that individuals vary in security on a continuum between attachment anxiety and attachment avoidance (Brennan, Clark, & Shaver (1998); Frayley et al., 2015).

As a result of the unresponsiveness from the caregiver, infants with an anxious attachment style would show escalated levels of distress in an effort to meet their attachment needs (Pollard et al., 2020). In adulthood, attachment anxiety is classified as experiencing high levels of anxiety which usually results in individuals having a negative view of themselves and an increased sensitivity to rejection (Shaver & Mikulincer, 2002). Attachment anxiety is also termed preoccupied attachment in the attachment literature (Bartholomew & Horowitz, 1991).

On the other hand, individuals with an avoidant attachment style would detach from their attachment system to manage the unresponsive caregiver and in adulthood is characterised by traits such as complete self-reliance and disinterest in relationships (Bowlby 1982), with a negative view of others (Blatt and Levy, 2003). Attachment avoidance is also termed dismissive attachment within attachment literature (Bartholomew & Horowitz, 1991). If individuals score highly on the two-dimensional continuum questionnaire, it is representative of an insecure attachment, while lower scores represent a secure attachment (Partridge et al., 2021).

Additionally, a fourth disorganised attachment style has been added which describes the infant as showing various conflicted, disoriented, and fearful behaviours (Main & Soloman, 1986; Granqvist et al., 2017), usually as a result of childhood trauma and maltreatment (Main and Soloman, 1990). These behaviours are seen to be a response of the infant trying to attach to the caregiver for safety and security, an evolutionary predisposition, yet with the contradiction that they are also the infant's cause of fear (Pollard et al., 2020). Therefore, those with a disorganised attachment style in adulthood fluctuate between wanting connection with others, but apprehensive due to possibilities of rejection and intimacy (Bartholomew & Perlman, 1994). These individuals have both a negative view of the self and others, thus scoring highly on both anxiety and avoidance traits (Liotti & Gumley, 2009).

Chapter 1

Unresolved attachment style is mentioned in the Adult Attachment Interview (AAI; George et al., 1996) and is understood to be theoretically consistent with disorganised attachment. Additionally, fearful attachment style has been referenced as the adult equivalent of a disorganised / unresolved attachment style in childhood, and is often used interchangeably (Simpson & Rholes, 2002). The definitions of attachment used in this review have been collated into a glossary table for quick reference if needed (Table 1) and an attachment flow chart can be seen below (Figure 1).

However, criticisms of this theory do suggest that the view of the self and others are multidimensional concepts which can differ depending on context and interaction. For example, from a sociocognitive viewpoint, self-report measures provide a reductionist picture of attachment (Pietromonaco & Barrett, 2000). Additionally, there is limited information within attachment theory of how attachment develops through life and the possibility of reorganisation of attachment structures as relationships are developed over someone's life course (Thompson & Raikes, 2003). This can be particularly harmful with the classification of disorganised attachment due to the myths which are associated with this style, this includes, thinking that measures of attachment can be used as definitive assessments and that the infant has experienced childhood maltreatment (Granqvist et al., 2017). It is often assumed within attachment theory that the infant's classification of attachment is 'fixed' or 'static' which minimises the positive impact that development, changes in support, or therapeutic intervention can have (Granqvist et al., 2017).

Table 1

Glossary of attachment terms

Attachment term	Definition for this review
Secure attachment	For a secure attachment, the infant feels comfortable and safe in the presence of the caregiver, as well as when beginning to explore the environment. This attachment representation is reliant on the development of a secure base, with availability, flexibility, sensitivity, and reliable interaction from the caregiver (Bowlby, 1977; Bucci et al., 2015; Svanberg et al., 2010).
Insecure attachment	Insecure attachment within adults can be separated into three types of styles, anxious, avoidant, and fearful (Bartholomew & Horowitz, 1991). Occasionally in the review, some papers only measure anxiety and avoidance attachment as insecure, without the inclusion of fearful attachment. This is stated clearly in the text if this is the case and

therefore when insecure is used without clarification it includes anxious, avoidant, and fearful.

Attachment anxiety / preoccupied attachment	Attachment anxiety is classified as experiencing high levels of anxiety and low levels of avoidance. This usually results in individuals having a negative view of themselves (Shaver & Mikulincer, 2002). Attachment anxiety is also termed preoccupied attachment in the attachment literature (Bartholomew & Horowitz, 1991).
Attachment avoidance / dismissive attachment	Attachment avoidance is characterised by traits such as complete self-reliance and disinterest in relationships (Bowlby 1982), with a negative view of others (Blatt and Levy, 2003). Attachment avoidance is also termed dismissive attachment within attachment literature (Bartholomew & Horowitz, 1991).
Fearful /disorganised / unresolved attachment	Fearful attachment style is the adult equivalent of a disorganised / unresolved attachment style in childhood, and is often used interchangeably (Simpson & Rholes, 2002). Within this attachment style individuals have both a negative view of self and others, thus scoring highly on both anxiety and avoidance traits (Liotti & Gumley, 2009).

Figure 1

Attachment flowchart
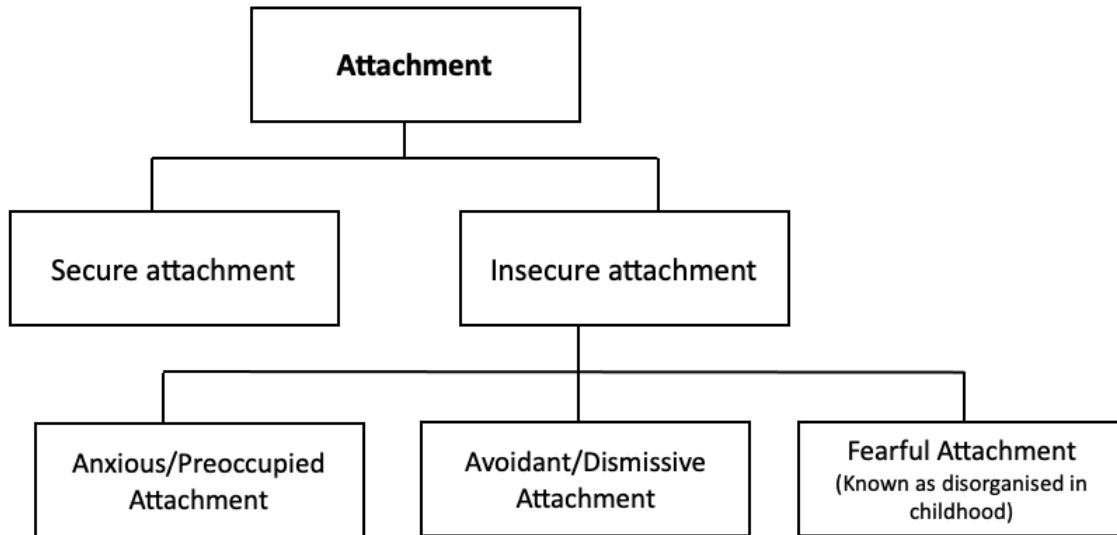
1.2.3   Dissociation and Attachment

There are various empirical reviews investigating dissociation and relationships with differing psychological factors such as childhood trauma (Rafiq et al., 2018), personality disorder (Scalabrini et al., 2016), PTSD (Atchley & Bedford, 2021), and psychosis (Longden et al., 2020). For dissociation and attachment, the research features a large theoretical evidence base which suggests a disorganised attachment style as an infant can drastically alter the internal working models of self, resulting in an increased likelihood of developing dissociative disorders later in life (Liotti, 2006; Liotti, 2009).

Liotti hypotheses that the interactions between a caregiver and infant with a disorganised attachment are likely to create certain internal working models including a threatening/evil self, a rescuer/powerful self, or a victim/helpless self (Liotti 2000). This can be formulated as a result of the failure of integration and coherence within the developing mental processes which an individual experiences as a result of disorganised attachment (Lyons-Ruth et al., 2006). This theory linking disorganised attachment and dissociative experiences has been supported by longitudinal studies which followed infants from at-risk families into adulthood (Dutra et al., 2009; Ogawa et al., 1997).

Additionally, Fonagy (1998) has hypothesised that internal working models of the self are not the only affected cognitive process linking attachment and dissociation. Fonagy (1998) highlights that within insecure / disorganised attachments, the ability for the infant to mentalise about themselves and others can increase their vulnerability if their caregiver is abusive. Therefore, this process is often inhibited or under-developed which effects the individual's ability to use mentalisation in other relationships they form an attachment with (Fonagy 1998).

When considering insecure attachment styles, dissociation can also be linked to individuals with attachment avoidance traits and their ability to disconnect from emotional experiences (Mikulincer & Shaver, 2008). This is a result of ongoing suppression during infancy of pain and distress related to a rejecting caregiver, therefore, those with avoidant attachment style will inhibit emotional experiences related to attachment through a method of defence and dissociative abilities to protect from triggers in relationships (Shaver & Mikulincer, 2007).

Over time, there has been an increasing number of empirical studies which have investigated dissociation and attachment and how these concepts could be associated. However, to the authors' knowledge, no systematic review has been completed investigating the relational processes between dissociation and attachment. Conducting a systematic review of the relationships between these two factors appears a priority, as it would not only allow possible maintenance factors of dissociation to be highlighted but would also inform future clinical intervention (Lynn et al., 2019).

1.2.4 Aim

There is no current systematic review exploring the relationships between dissociation and attachment styles. This review aims to collate the research, synthesise the data, and present a future guide to enquiry to further develop dissociation and attachment research.

1.3 Method

1.3.1 Search Strategy

This systematic review was conducted in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). The systematic review protocol was registered on the International Prospective Register of Systematic Reviews (PROSPERO; ID: CRD42022361231). Three online databases of published material were searched, namely APA PsychINFO, Medline, and Web of Science. ProQuest Dissertations & Theses Global (doctoral level only) were searched to identity appropriate grey literature. The searches were

completed on the 31st October 2022. The searches combined the use of free text and subject headings to maximise the likelihood of obtaining all relevant literature. Table 2 details the full search strategies for all databases.

Table 2

Search Terms for Databases

	Terms for Dissociation	Terms for Attachment[†]
Free text used for all database[‡]	Dissociat* OR depersonali* OR dereali* OR "dissociative identity disorder" OR "multiple personalit*" OR somatoform OR "somatoform disorder*" OR "somatization disorder*" OR "somatisation disorder*"	"attachment theo*" OR "attachment styl*" OR "adult attachment" OR "insecure attachment" OR "disorganised attachment" OR "disorganized attachment" OR "secure attachment" OR "attachment representation" OR "attachment behavio*"
Subject Headings (MEDLINE)	(MH "Somatoform Disorders") OR (MH "Dissociative Disorders")	(MH "Object Attachment")
Subject Headings (APA PsychINFO)	DE "Dissociation" OR DE "Dissociative Disorders" OR DE "Dissociative Amnesia" OR DE "Dissociative Identity Disorder" OR DE "Depersonalization/Derealization Disorder"	DE "Attachment Disorders" OR DE "Attachment Style" OR DE "Attachment Behavior" OR DE "Attachment Theory"

Note. Although somatoform was originally in the search terms and subject headings, this was removed due to the large number of papers that were found.

[†] Initially, the term "attachment*" was used as the main free text, however, this caused difficulty due to electron attachment and dissociation being a key concept within physical science research. With assistance from the librarian at the University of Southampton, it was decided that psychological attachment related phrases could be used with relevant subject headings to ensure relevant literature was found.

[‡] Web of Science, ProQuest and OpenGrey do not use subject headings, therefore, only the free text was used for these databases.

1.3.2   Inclusion and Exclusion Criteria

Within the review, there was no criteria set for publication status or date to try and gather an extensive selection related to the topics, and to reduce publication bias (Adams et al., 2016). Dissociative experiences can be described on a continuum from 'normal' to clinical; however, clinical experiences of dissociation are often found in those with mental health difficulties (Lyssenko et al., 2017) with literature supporting a cross-over between dissociative experiences and mental health conditions (Černis et al., 2021; Rădulescu et al., 2020). Considering this and our interest in the clinical application of these findings, it was decided that clinical samples would form part of the inclusion criteria (See Table 3).

Table 3

Inclusion and Exclusion Criteria

Inclusion	Exclusion
(i) Published and unpublished empirical studies	(i) Participants under 18, including pre-natal and parent-child dyads
(ii) Quantitative studies	(ii) Conference posters, abstracts, reviews, and proposals
(iii) Participants were ALL Adults (18 years or over) and human (e.g., not pets)	(iii) Qualitative studies, mixed method design, development of questionnaire studies (e.g., EFA), case studies, pilot studies, and any secondary literature analysis (e.g., meta-analysis/SR)
(iv) A standardised adult measure of attachment style is used in the paper A standardised adult measure of dissociation is used in the paper	(iv) Studies that do not directly measure dissociation *(e.g., somatoform, absorption)*
(vi) A mental health clinical sample (to have visited mental healthcare professional or received treatment as an inpatient or outpatient from a mental health service AND/OR received a mental health diagnosis)	(v) Studies that do not focus on or have aspects that focus on the relationship between dissociation and attachment (e.g., *Studies which focus on treatment-based outcomes, studies that do not use statistical analysis that directly assess relational processes between attachment and dissociation)*
(vii) For studies to be in English language	

Note. Abstracts which used participants with a dissociative disorder diagnosis, and included an attachment measure were added for full text review due to the increased likelihood of there being a dissociation measure to assess severity.

1.3.3 Study Selection

A total of 1,639 papers were found and uploaded to a reference system. Duplicates were removed and all the remaining titles and abstracts of the journal articles were screened against the inclusion and exclusion criteria. The final papers reference lists were checked to identify possible papers that would fit the inclusion criteria. To reduce the risk of bias, 10% of the papers were screened by an independent reviewer which resulted in good agreement (98.2%). The full selection process can be seen below in the PRISMA Flow Diagram (Figure 2).

Figure 2

PRISMA Flow Diagram
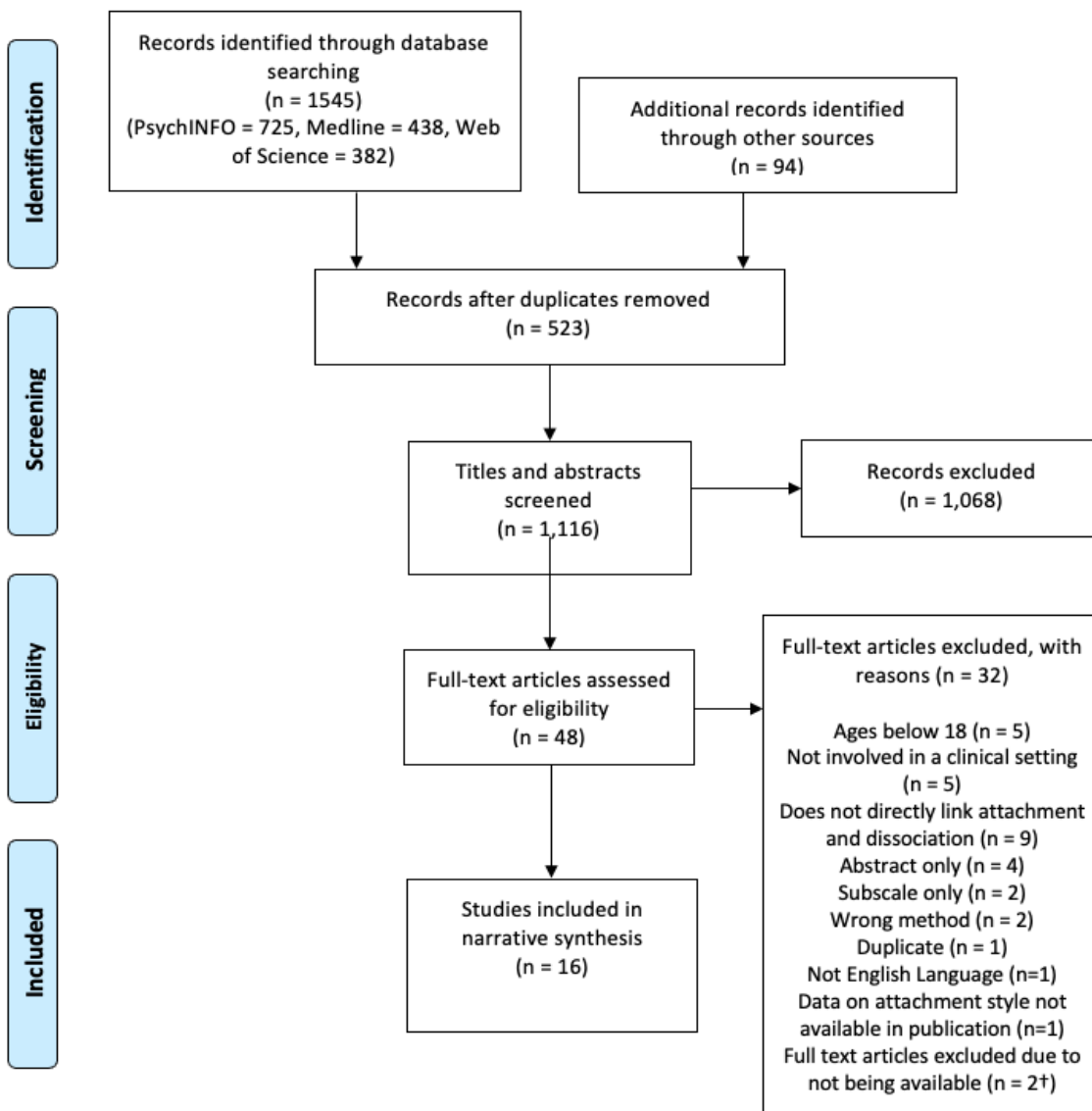
†No available contact details were available for the authors and the University Library was not able to find the full text.

1.3.4   Data Extraction

Data extraction used an Excel Spreadsheet which extracted the following information: study characteristics (year, journal, country, number recruited, design, analysis, results); participant characteristics (age, ethnicity, gender, clinical setting and/or diagnosis); and measures used for attachment, dissociation, and any others that were included. The results of the articles were extracted specifically with the aim of having a narrative framework which allowed comparison of the papers. Narrative synthesis was chosen due to a lack of homogeneity within the data, including outcome measures, analysis, and population characteristics.

1.3.5   Quality Assessment

The Effective Public Health Practice Project (EPHPP; Thomas et al., 2004) Quality Assessment Tool for Quantitative studies was used to assess the quality of the included papers. This tool has been shown to have good content and construct validity (Armijo-Olivo et al., 2012), inter-rater reliability (Thomas et al., 2004), and has been deemed appropriate for the assessment of non-randomized studies (Evans et al., 2015). The EPHPP has seven sections, namely (1) selection bias (2) study design (3) confounders (4) blinding (5) data methods (6) withdrawals (7) analysis. Each of these sections is rated as weak, moderate, or strong and then an overall global result is calculated (strong = zero weak ratings, moderate = one weak rating, weak = two or more weak ratings).

The tool has been adapted for use in cross-sectional study designs by the removal of the 'blinding' domain (Lavin et al., 2020; Rafiq et al., 2018; Partridge et al., 2021; Williams et al., 2018). When rating the study design, the EPHPP tool states that randomised and case-controlled trials receive a strong rating, those with an interrupted time series (e.g., case control) receive a medium rating, and any other design receives a weak rating (e.g., cross sectional; Thomas et al., 2004).

Quality assessment was completed by the first author. To reduce the risk of bias, 25% of the papers were screened by an independent reviewer, which resulted in good agreement (92.86%). Any discrepancies were discussed thoroughly with the second and third author. Overall, two papers received a moderate rating, and fourteen papers received a weak rating (see Appendix A).

1.4   Results

Table 4 provides key characteristics of the final 16 studies which met the inclusion criteria and were included in the review.

1.4.1   Study Characteristics

Most of the papers (n = 12) were published in the last ten years (2013-2022), with the remaining four papers between 2001 and 2007. The papers that were published between 2001-2007 studied dissociation and attachment in people with substance misuse diagnoses or in inpatient settings; more recently, broader clinical samples have been studied. The majority of papers (n = 12) were in peer-reviewed journals; the remaining four were unpublished doctoral theses obtained through grey literature searches. The two most common origins of the papers were United Kingdom (n = 6) and United States (n = 5), with the rest originating from Poland (n = 1), Germany (n= 1), Korea (n = 1), Italy (n = 1) and Iran (n = 1).

All sixteen of the studies used a cross-sectional design which meant that data was collected at a single time point. Eight different types of analysis were used. Mediation was the most common form of analysis (n=5), while structural equation modelling (SEM) and regression models were used three times. The remaining papers used chi-squared analysis, Pearson's correlations, paired t-tests, ANOVA, and MANOVA.

Table 4

Summary of the studies characteristics included in the systematic review

Name, Author, Country	Participant Information	Design and Analysis	Attachment Measure[†]	Dissociation Measure[†]	Other measures[†]	Relevant findings
Degnan et al., (2022); UK	Total n = 242. Mean age - 33.17 (SD - 13.06). Female = 30.6% Diagnosis - Psychosis; Population - received mental health support or prescribed antipsychotic medication	Cross-sectional, mediation	PAM-R	DES-II	BBTS; CAPE; SNS; PSQ	Childhood trauma significantly predicted disorganised attachment (β = 0.18, p = 0.001). Disorganised attachment (β = 0.32, p < 0.001) and dissociation (β = 0.16, p = 0.042 fully mediated the relationship between childhood trauma and negative symptoms of psychosis. There was no direct effect between childhood trauma and negative symptoms. The relationship between dissociation and disorganised attachment was not directly assessed.

Farina et al., (2013); Italy	Total = 26 (Clinical sample n = 13, healthy controls n = 13). Aged 24-65 (M = 38.97, SD = 11.55). Female = 54%. Diagnosis: Disorders characterised by severe dissociative symptoms (diagnosed with the DSM-IV TR) Population – Outpatients	Cross sectional, paired t statistics & non-parametric tests	AAI	DES	SDQ	All but one patient from the clinical group had disorganised attachment style (92.3%). The control group consisted of healthy subjects which had no Axis I and II DSM-IV diagnosis. Significant change (p < 0.01) in EEG frequencies were found in the control group after completing the AAI. In the patients' group, no significant change was observed after completing the AAI in the EEG.
Golshani et al., (2021); Iran	Total n = 300. Aged 18-65 (M - 31.31, SD - 11.02). Female - 41.3% Diagnosis - Major Depressive Disorder; Population – Outpatients	Cross-sectional, chi square test	AAS (Farsi Translated Version)	DES	TEC (Farsi Translated Version)	A significant relationship was found between dissociative experiences and attachment style (p < 0.01) with higher scores on the dissociative measure being linked with an anxious attachment style.

Gottfried (2004); USA	Total n = 292. Aged 18-60 (M = 40.2, SD = 8.6). Female - 100% Population - Inpatient & outpatient substance abuse programmes	Cross-sectional, mediation	ECR	DES	Child Sexual Abuse Interview; Structured Clinical Interview for DSM-IV	Childhood sexual abuse (β = 0.22 , p <.05), and both an anxious (β = 0.22 , p <.05) and avoidant attachment (β = 0.12 , p <.05) were significantly related to dissociation. The effects of childhood sexual abuse and insecure attachment styles (anxious and avoidant only) on substance misuse was fully mediated by dissociation (β = 0.24 , p <.05).
Huang et al., (2020); UK	Total n = 295 (Clinical sample n = 184, healthy controls = 111). Mean age = 29.69 (SD = 9.58). Female – 58% Diagnosis - BPD or Anti-Social Personality Disorder Population - Specialist Personality Disorder Mental Health Services or Probation Trust.	Cross-sectional, SEM	ECR-R	DES	CTQ; RFQ; PCL-5	Initial correlations found significant associations between the DES subscales with both anxious and avoidant attachment style (p = .001). The SEM found that childhood trauma and dissociative experiences were fully mediated by decreased mentalising abilities and insecure attachment (anxious and avoidant only; β = 0.32 , p <.01).

Kong et al., (2018); Korea	Total n = 115. Aged 19-61 (M = 33.6, SD = 10.60). Female - 66.1% Diagnosis - trauma related disorders; Population - Outpatients from a specialised trauma clinic	Cross-sectional, SEM and path analysis	RAAS	DES-II	CTQ	Attachment anxiety fully mediated the relationship between childhood trauma and dissociation (ß = 0.10, p = 0.018), but attachment avoidance did not. The indirect effect of trauma subcategories, including emotional abuse, physical abuse, sexual abuse, and physical neglect, on dissociation via the combination of both anxious and avoidant attachment were significant (ß = 0.17, p = 0.001; ß = 0.11, p = 0.001; and ß = 0.10, p = 0.004; ß = 0.14, p = 0.001, respectively) The combination of both anxious and avoidant attachment mediated the effect between childhood sexual abuse and dissociation (ß = 0.10, p = 0.004), however, individually, attachment anxiety and avoidance did not.

McAnena (2001); UK	Total n = 48 (Clinical group n = 24, healthy controls = 24). Aged 22-56 (M = 37.3, SD = 11.86). Female – 18.75% Population - local alcohol services, including the local Community Alcohol Team (CAT), inpatient detoxification units, and voluntary alcohol services.	Cross-sectional, Pearson's correlations	ASQ	CES	YSQ; SADD; HADS	There were no statistically significant results when comparing attachment anxiety or attachment avoidance with dissociation in the clinical group. The subscale of depersonalisation was significantly associated with attachment anxiety (r = .57, p = 0.004) in the control group.
McGonagle (2017); UK	Total n = 230. Aged 18-73 (M = 36.95, SD = 11.60). Female - 80% Population - received treatment in a mental health unit, community team, or therapeutic input for experiences related to psychosis AND/OR prescribed antipsychotic medication for psychosis.	Cross-sectional, mediation	RQ	DES-II	BBTS; CAPE; CEQ	Fearful attachment style was significantly associated with the dissociative experiences scale total score (r = 0.418, p= .000). Fearful attachment style and dissociation fully mediated the relationship between childhood trauma and auditory hallucinations (ß = 0.001, p= .000). This result stayed significant after controlling for paranoia, fantasy-proneness, and ethnicity.

Study	Sample	Design/Analysis	Attachment measure	Dissociation measure	Other measures	Key findings
Pearce et al., (2016); UK	Total n = 112. Aged 18-72 (M = 40.26, SD = 12.5). Female - 72%. Diagnosis - Schizophrenia spectrum diagnosis AND/OR Population - received treatment in a mental health unit, community team, or therapeutic input for experiences related to psychosis.	Cross-sectional, mediation	RQ	DES-II	BBTS; CAPE	Higher scores on the dissociative measure were significantly associated with fearful attachment (r = .42, p <.01). No significant associations between preoccupied and dismissive attachment with dissociative scores. Fearful attachment (ß = 0.05) and dissociation (ß = 17) significantly mediated child trauma and paranoia. Fearful attachment did not significantly mediate the relationship between childhood trauma and voices, but dissociation did (ß = 0.09).
Reiner et al., (2016); Germany	Total n = 5 (Clinical group n = 43, healthy controls = 42). Aged 19-52 (M = 30.10, SD = 9.00). Female - 100% Diagnosis - Clinical Depression; Population - Inpatient unit of a Department of Psychosomatic Medicine and Psychotherapy	Cross-sectional, ANOVA	AAI	CDS	STAI; PHQ	No significant associations between depersonalisation and unresolved attachment. The relationship between attachment status and the OXTR rs53576 genotype was significant (F = 8.36, p ≤ .01). Therefore, those with an unresolved status and a GG-allele were significantly more likely to be experience depersonalisation.

| Riggs et al., (2007a); USA | Total n = 80. Aged 18 - 66 (M = 36.56, SD = NR). Female - 92.5% Diagnosis - Trauma related disorders; Population – inpatients | Cross-sectional, MANOVA | AAI; ECR | DES | DDIS; MCMI-IV | The negative other model (avoidant attachment) was significantly associated with dissociation (F = 7.50, p <.01), as well as major depression (F = 5.43, p <.05), PTSD (F = 8.80, p <.01), dysthymia (F = 8.98, p <.01), and somatoform (F = 3.87, p <.05). |
| Riggs et al., (2007b); USA | Total n = 80. Aged 18 - 66 (M = 36.56, SD = NR). Female - 92.5% Diagnosis - Trauma related disorders; Population - inpatients | Cross-sectional, logistic regression | ECR | DES | DDIS; MCMI-IV; FES | Avoidant attachment significantly associated with dissociative identity disorder (χ2 = 6.68, p <.001), increasing the likelihood of diagnosis by 84% (OR = 6.68, p <.01). |

Simeon & Knutelska (2022); USA	Total n = 90 (Clinical group n = 42, healthy controls = 53). Aged 18-60 (M = 32.12, SD = 10.32) Female = 45.28% Diagnosis - Depersonalization Disorder	Cross-sectional, linear regression	RQ; RSQ	DES	CTQ	For healthy controls, the direct effect between fearful attachment on dissociation was significant (ß = 0.25, p <.05) For the clinical group, fearful attachment and dissociation severity were significantly associated (ß = 0.05, p <.01). Additionally, childhood trauma significantly mediated the relationship between fearful attachment and dissociation severity (ß = 1.1876).
Williams (2017); UK	Total n = 50. Mean Age = 41.60 (SD = 13.41). Female = 32% Diagnosis - Schizophrenia spectrum diagnosis Population - Mental health trusts and the voluntary section across North West of England (mix of inpatient and outpatient)	Cross-sectional, mediation	RQ	DES-II	LSHS-R; CDSS	Significant association found between fearful attachment and dissociation (r = .327, p< .05). No relationship found between dissociation and preoccupied or dismissive attachment. Secure attachment negatively correlated with dissociation (r = -0.353, p <.05). Dissociation significantly mediated the relationship between fearful attachment and hallucinations (ß = 0.37, p = <.05). When controlling for age, gender, and ethnicity, the effects were significant (ß =

					0.38, p <.05). When controlling for age, gender, ethnicity and depression, the effects were no longer significant.
Williams et al., (2019); USA	Total n = 56. Mean age = 40.20 (SD 13.00). Female = 73.21% Diagnosis - Motor FND Disorders; Population - Massachusetts General Hospital FND Clinic	Cross-sectional, Correlations & multivariate linear regression	RSQ	DES	PHQ-15; SDQ-20; SOMS:CD; SF-36; BDI; STAI; NEO; TAS; BIS; CD-RISC; CTQ; LEC; PCL-5	Fearful (r = 0.57, p < .001) and preoccupied (r = -.38, p = <.05) attachment significantly correlated with dissociation scores. No relationship found between dissociation and dismissive attachment. When further multivariate regression analysis was completed, dissociation no longer correlated with fearful or preoccupied attachment.
Zdankiewicz-Ścigała & Ścigała (2020); Poland	Total = 268 (Clinical group = 178, healthy controls = 90). Aged 18-73 (M = 39.19, SD = 13.45). Female = 43% Population - Alcohol inpatient treatment programme	Cross-sectional, SEM	ASQ	CES	TAS; MAST; TES	Significant direct effect between anxious attachment and dissociation (r = 0.145, p <.01). Significant direct effect between avoidant attachment and dissociation (r = 0.138 p < .05). Alexithymia (r = 0.275, p <.01) and trauma intensity (r = 0.258, p <.01) significantly mediated the relationship between anxious attachment and dissociation

Alexithymia (r = 0.263, p <.01) and trauma intensity (r = 0.251, p <.01) significantly mediated the relationship between avoidant attachment and dissociation

No significant results between secure attachment style with dissociation and alexithymia.

[†]AAI = Adult Attachment Interview; AAS = Adult Attachment Scale; ASQ = Attachment Style Questionnaire; BBTS = Brief Betrayal Trauma Survey; BDI = Beck Depression Inventory-II; BIS= Barrett Impulsivity Scale; CAPE = Community Assessment of Psychic Experiences; CD-RISC = Connor-Davidson Resilience Scale; CDS = Cambridge Depersonalization Scale; CDSS = The Calgary Depression Scale; CEQ = The Creative Experiences Scale; CES = The Curious Experiences Survey; CTQ = The Childhood Trauma Questionnaire; DDIS = The Dissociative Disorders Interview Schedule; DES = The Dissociative Experiences Scale; DES-II = The Dissociative Experiences Scale Revised; ECR = Experiences in Close Relationships Scale; ECR-R = Experiences in Close Relationships Scale Revised; FES = Family Environment Scale; HADS = Hospital Anxiety and Depression Scale; LEC = Life Events Checklist; LSHS-R = The Launay -Slade Hallucination Scale Revised; MCMI-IV = Millon Clinical Multiaxial Inventory-IV; NEO = NEO Five-factor Inventory; PAM-R = Psychosis Attachment Measure Revised; PCL-5= Post Traumatic Stress Disorder Checklist Scale; PHQ = Patient Health Questionnaire; PSQ = Personality Structure Questionnaire; RAAS = Revised Adult Attachment Scale; RFQ = Reflective Functioning Questionnaire; RQ = The Relationship Questionnaire; RSQ = The Relationship Scales Questionnaire; SADD = Short Alcohol Dependence Data Questionnaire; SDQ-20 = Somatoform Dissociation Questionnaire; SF-36 = Short Form Health Survey; SNS = Self-Evaluation of Negative Symptoms; SOMS:CD = Somatoform Symptoms Conversion Disorder Subscale ; STAI = State-trait Anxiety Inventory; TEC = Traumatic Experiences Checklist; YSQ = Youngs Schema Questionnaire

Note. Any missing data in the table was a result of the information not being reported in the original paper.

1.4.2   Sample Characteristics

The total number of participants in this review was 2,294[†]. Six of the papers included both a clinical and control group within their research, where the overall clinical group population was slightly higher (n = 407) than the total control group population (n = 343). The overall mean age for the sixteen papers was 35.17 (SD = 11.03[‡]) which ranged from 18 - 73. Ethnicity was reported in nine out of the sixteen papers with the majority identifying as white (65%), the remaining 35% identified as other ethnic origins. Out of the 2,294 participants, 61.9% of the population was female, 37.5% was male, and 0.6% identified as other.

Ten out of sixteen papers required a specific mental health diagnosis within the clinical samples, this included depressive disorder (n = 344), trauma related disorders (n = 198), personality disorders (n = 187), motor functional neurological disorder (FND; n = 56), schizophrenia spectrum disorders (n = 50), depersonalisation disorder (n = 45), dissociative disorder not otherwise specified (n = 3), somatoform disorder (n = 2), conversion disorder (n = 2), and dissociative identity disorder (DID; n = 1). The majority of the papers (n = 12) detailed where their clinical sample was from, which included inpatient (n = 304), outpatient (n = 484), mix of inpatient and outpatient (n = 366), specialist personality disorder services (n = 184), and substance misuse clinical treatment centres (n = 490).

Three papers (Pearce et al., 2016; Degnan et al., 2022; McGonagle, 2017) had a total of 584 participants and their inclusion criteria was more flexible due to participants being included if they have one or more of the following: a schizophrenia spectrum diagnosis (n = 555); past or current treatment from community or inpatient settings (n = 932); being prescribed anti-psychotic treatment (n = 584). In two of the studies, participants were able to select both past and current treatment from mental health settings if applicable which explains the result being higher than the total sample (Pearce et al., 2016; McGonagle, 2017).

[†] Two papers published by the same author and publication year (Riggs et al., 2007a; Riggs et al., 2007b) used samples that had the same number of participants and same demographics. Therefore, it was assumed that this was the same dataset and was only counted once within the overall total population. The authors of the study were contacted for clarification; however, no reply was received prior to submission.

[‡] This excludes the papers that did not include a standard deviation for their sample population (n=2).

1.4.3 Measures of attachment style

There was a total of nine instruments used to measure attachment style. The details of these measures can be seen in Appendix B and have been extended from Partridge et al., (2021) to include the dissociation measures present in this review. The two most popular instruments used were the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) and the Experiences in Close Relationships Scale (ECR; Brennan et al., 1998). All the studies used self-report measures other than Reiner et al., (2016) and Farina et al., (2013) who used the adult attachment interview (AAI) which uses a semi-structured interview format. There is a wide range of evidence supporting the psychometric properties of the questionnaires used.

1.4.4 Measures of dissociation

There was a total of four instruments used to measure experiences of dissociation (See Appendix C). The most common measure used was the Dissociative Experiences Scale (DES), which included the original (n = 8, Bernstein & Putman, 1986) and the revised version (n = 5; DES-II, Carlson & Putnam, 1993). The Curious Experiences Survey (CES) is also classified as a revised version of the DES-II as it adds a further three items to the questionnaire and describes itself as written in a more user-friendly design (Goldberg, 1999). Thus, 15 out of 16 papers used a version of the dissociative experiences survey. The remaining paper (Reiner et al., 2016) used the Cambridge Depersonalisation Scale (CDS), depersonalisation being a common feature within dissociative experiences (Sar, 2014). All of the measures used are well known and have good psychometric properties.

1.4.5 Other measures

All 16 papers included a variety of other measures in their studies (n = 25). As the systematic review is looking into the relational processes of dissociation and attachment, it was thought to be helpful to document the other questionnaires used within the studies in the main characteristics table (See Table 4).

1.4.6   Synthesis examining the relationships between attachment style and dissociative experiences

1.4.6.1   Direct associations between attachment style and dissociative experiences

1.4.6.1.1   Anxious / Preoccupied Attachment

Aspects of anxious/preoccupied attachment style such as increased sensitivity towards rejection, and an increased desire for approval, have been linked to dissociative experiences (Gušić et al., 2016; Lorenzini & Fonagy, 2013). Two papers (Golshani et al., 2021; Huang et al., 2020) found significant relationships between attachment anxiety and dissociative experiences. Specifically, Golshani et al (2021), found that for participants with major depressive disorder, attachment anxiety was more prevalent in those that experienced severe dissociation, whereas low dissociative experiences were more prevalent in individuals with a secure attachment. Huang et al (2020) found significant correlations between the anxious subscale on The Experiences in Close Relationships-Revised (ECR-R) questionnaire for all three subscales of the DES (amnesia, depersonalisation, and absorption). However, several papers found no significant correlations between dissociation and preoccupied attachment in psychosis and FND samples (Pearce et al., 2016; Williams, 2017; Williams et al., 2019).

Most of the studies which investigated the relationship between anxious attachment and dissociation received a weak overall rating for their quality assessment as they were cross-sectional designs and the reported details of sample recruitment were minimal increasing the risk of selection bias. Huang et al., (2020) received a moderate rating due to the consideration of confounders and a detailed report of sampling procedures.

1.4.6.1.2   Avoidant / Dismissive Attachment

Attachment avoidance has been linked to dissociative experiences as a result of disconnection to emotional reactivity (Blatt and Levy, 2003; Mikulincer & Shaver, 2008). Significant results were found between dissociation and attachment avoidance in trauma related disorders (Riggs et al., 2007a; Riggs et al., 2007b), personality disorder (Huang et al., 2020), and psychosis (Degnan et al., 2022).

Riggs et al., (2007b) found that the likelihood of receiving a DID diagnosis increased by 84% when the individual had an avoidant attachment style. Additionally, Riggs et al., (2007a) found that attachment avoidance was significantly associated with other disorders which tend to have

dissociative experiences such as somatoform disorder, dysthymia, PTSD and major depression. Several papers found no significant correlations between dissociation and dismissive attachment in psychosis and FND clinical samples (Pearce et al., 2016; Williams, 2017; Williams et al., 2019).

Riggs et al., (2007a) received a moderate quality assessment rating. The cross-sectional design of their study was the only factor that precluded an overall strong global rating, whereas Riggs, et al., (2007b), and Degnan et al., (2022) received weak overall ratings.

1.4.6.1.3   Fearful / disorganised attachment

There is a large evidence base stemming from the 1990s, including longitudinal studies, which suggests that a disorganised attachment is associated with increased vulnerability to developing dissociative disorders (Liotti, 1992; Ogawa et al., 1997; Carlson 1998). Fearful, disorganised, and unresolved attachment have been included together in this section of the review due to the theoretical relationship that they share (Simpson & Rholes, 2002).

Seven papers found significant associations between dissociation and fearful or disorganised attachment (Degnan et al., 2022, Farina et al., 2013; McGonagle 2017; Pearce et al., 2016; Simon and Knutelska, 2022; Williams, 2017; Williams et al., 2019), with four of these having psychosis samples. One study found no significant relationships between depersonalisation and disorganised attachment within a clinically depressed sample (Reiner et al., 2016), which contrasts with most of the evidence. However, Reiner et al., (2016) only assessed depersonalisation, one concept of a larger picture when looking at dissociative experiences. All the above papers received a weak global quality assessment rating.

1.4.6.2   Indirect associations between attachment style and dissociative experiences

1.4.6.2.1   Relationships between trauma, attachment, and dissociative experiences

Childhood trauma and insecure attachment have been found to negatively impact the development of mentalisation capabilities which increases the likelihood of disconnected or dissociated states (Fonagy et al., 1991; Fonagy et al., 2002). A longitudinal study showed that children with disorganised attachment who are then repeatedly exposed to trauma, were more likely to develop severe experiences of dissociation later in adulthood (Ogawa et al., 1997).

Three papers investigated the relationship between trauma, attachment, and dissociative experiences. The studies' participants had diagnoses of depersonalisation disorder (Simeon & Knutelska, 2022), trauma related disorder (Kong et al., 2018), and personality disorders (Huang et al., 2020). Simeon and Knutelska (2022) found an indirect effect of fearful attachment on

dissociation severity, mediated by childhood maltreatment. Significant positive correlations were also found between childhood trauma, dissociation, and attachment anxiety (Kong et al., 2017).

Effects of specific categories of trauma (emotional neglect, physical neglect, and emotional abuse) on dissociation were fully mediated by attachment anxiety but not by attachment avoidance. The effect of childhood sexual abuse on dissociation was fully mediated by combined attachment anxiety and avoidance, also known as fearful attachment (Kong et al., 2017).

Childhood trauma and dissociative experiences were mediated by decreased mentalising abilities and attachment insecurity (Huang et al., 2020). Attachment insecurity did not mediate the relationship between childhood trauma and dissociative experiences independently. This was unexpected by the researchers who reasoned that this could be due to the questionnaire measuring anxious and avoidant attachments rather than fearful or disorganised attachment style (Huang et al., 2020; Liotti 2006).

1.4.6.2.2 *Relationships between trauma, psychosis, attachment style and dissociative experiences*

Dissociative experiences have many similarities to both positive and negative symptoms in psychosis-related disorders (Moskowitz et al., 2005). Associations between experiences of dissociation and psychosis have been found in empirical papers (Vogel et al., 2013). Avoidant and fearful attachment styles as a result of childhood trauma, have been found to be key developmental mechanisms in the experience of dissociation, and negative and positive symptoms of psychosis in adulthood (Berry et al., 2017; Liotti and Gumley, 2009).

In this review, one paper studied negative symptoms in psychosis and found disorganised attachment and dissociation to significantly mediate the effect between childhood trauma and negative psychotic symptoms, with no direct effect between childhood trauma and negative symptoms (Degnan et al., 2022).

Three papers in total studied the relationship between positive symptoms in psychosis, attachment and dissociation. Williams (2017) found that dissociation mediated the relationship between fearful attachment and hallucinations, however the mediating effect was not significant when depression was controlled for. Williams (2017) did not consider the impact of trauma on this relationship, whereas McGonagle (2017) added trauma as a further variable and found evidence that both fearful attachment and dissociation significantly mediated the relationship between childhood trauma and auditory hallucinations. Pearce et al., (2016) found contrasting

evidence where dissociation was the only variable that mediated the relationship between auditory hallucinations and childhood trauma, with fearful attachment not being a significant mediator. When including paranoia with childhood trauma, dissociation and fearful attachment did significantly mediate this relationship (Pearce et al., 2016).

1.4.6.2.3 *Relationships between substance misuse, attachment style, and dissociative experiences*

A recent meta-analysis found a developmental link between those who misuse substances and insecure attachment styles (Schlinder, 2019), with experiences of dissociation being common in this population (Benishek & Wichowski, 2003). Substance misuse has also been classified itself as a form of "chemical dissociation" (Roesler & Dafler 1993, pg. 537).

When considering adult women in inpatient and outpatient alcohol services who reported sexual abuse during their childhood, it was found that dissociation was a mediator between anxious attachment style and increased likelihood of engaging in substance misuse. (Gottfried, 2004). This relationship was only significant for anxious attachment style, and not significant for avoidant attachment style.

McAnena, (2001) who investigated dissociation and attachment within a sample of individuals from a range of alcohol services found no significant associations between insecure attachment and dissociation in the clinical group. However, the dissociation subscale 'depersonalisation' significantly correlated with attachment anxiety in the control group. McAnena (2001) identifies that these are confusing results and replication studies with larger samples are suggested to increase reliability and to further develop the research in this area.

Zdankiewicz-Ścigała and Ścigała (2020) investigated the impact of dissociation, attachment, alexithymia, and trauma on alcohol addiction. Both anxious and avoidant attachment significantly correlated with dissociation, with an indirect effect of both alexithymia and trauma. Therefore, it was hypothesised that an anxious or avoidant attachment increases the risk of alexithymia and exposure to traumatic experiences, which then contributes to the development of dissociation and the likelihood of alcohol dependence. All three papers received a weak global rating from the quality assessment tool because of the cross-sectional design and limited detail on sample recruitment.

1.4.6.2.4   Relationships between biological factors, attachment style, and dissociative experiences

When considering possible contributing biological factors, research into the etiological mechanisms for dissociative experiences and attachment is limited. However, genetic studies have found that individuals who carry an adenine (A) allele (including AG and AA genotypes) have a hypersensitivity to stress, increased pessimism, decreased self-esteem, and an increased likelihood of experiencing mental health difficulties (Saphire-Bernstein et al., 2011).

Extending these findings, one of the studies in the review examined the relationship between dissociative experiences, unresolved attachment, and the frequency of the A-allele (Reiner et al., 2016). Depersonalisation experiences were found to be significantly worse when individuals had an unresolved attachment and were OXTR GG-allele carriers, when compared to those without an unresolved attachment style.

Farina et al., (2013) investigated the neurobiological relationship between dissociation and cortical networks with recall of attachment experiences, using electroencephalography (EEG), an area which has limited research. Within the control group, Farina et al., (2013) found that there was increased connectivity in EEG rhythms when remembering memories of attachment via the AAI. However, for patients with disorders characterised by extreme dissociative experiences, no increase in the EEG rhythms occurred after the AAI, but there was an increase in sympathetic activity post AAI. Farina et al., (2013) hypothesised that dissociative processes led to a failure of integration of traumatic memories, reflected in the lack of change in EEG rhythms for individuals with disorganised attachment. Both studies received a weak global quality assessment rating overall.

A table which lists each section of the direct and indirect associations and which papers supported this relationship can be seen below in Tables 5 & 6 for ease of the reader.

Table 5

A table to show the papers identified in the review which provide evidence for the direct relationship between attachment and dissociation.

Direct Associations		Clinical Groups	Supporting paper
	Anxious attachment and dissociation	Depression	Golshani et al., (2021)
		Personality Disorder	Huang et al., (2020)
	Avoidant attachment and dissociation	Psychosis	Degnan et al., (2022)
		Personality Disorder	Huang et al., (2020)
		Trauma	Riggs et al., (2007a); Riggs et al., (2007b)
	Fearful attachment and dissociation	Psychosis	Degnan et al., (2022); McGonagle. (2017); Pearce et al., (2016); Williams (2017)
		FND	Williams et al., (2019)

Table 6

A table to show the papers identified in the review which provide evidence for the indirect associations between attachment and dissociation.

Indirect Associations		Clinical Groups	Supporting Papers
Fearful attachment, dissociation &…			
	Trauma	Depersonalisation disorder	Simeon & Knutelska (2022)
		Psychosis	Degnan et al., (2022)
	Sexual Abuse	Trauma related disorders	Kong et al., (2018)
	Hallucinations	Psychosis	Williams (2017)
	Hallucinations & trauma	Psychosis	McGonagle (2017)
	Paranoia & trauma	Psychosis	Pearce et al., (2016)
Disorganised attachment, dissociation &…			
	Genetic differences	Depersonalisation disorder	Reiner et al., (2016)
	EEG brain activity	DSM-5 disorders with severe dissociative experiences	Farina et al., (2012)
	Trauma & negative symptoms	Psychosis	Degnan et al., (2022)

Anxious attachment, dissociation &...			
	Substance misuse	Alcohol disorder	Gottfried (2004); McAnena (2001)
	Trauma	Trauma related disorders	Kong et al., (2018)
Insecure[†] attachment, dissociation &...			
	Trauma & alexithymia	Alcohol disorder	Zdankiewicz-Ścigała & Ścigała (2020)
	Mentalisation & trauma	Personality disorders	Huang et al., (2020)

1.5   Discussion

This systematic review aimed to understand the relationships between attachment style and dissociative experiences by examining and synthesising the current literature. The review will also present a guide to future enquiry to help the development of dissociative and attachment-based research.

1.5.1   Summary of findings

From the synthesised literature, there was evidence that three different attachment styles, anxious, avoidant, and fearful, were directly associated with increased likelihood of dissociative experiences in different clinical samples. Psychosis-related samples had robust research supporting the link between fearful attachment and dissociative experiences. Depression, trauma, and personality disorder had links with anxious and avoidant attachment, however, these clinical groups had fewer papers, and may benefit from replication studies prior to conclusions being

---

[†] Only anxious and avoidant attachment styles were used in these studies

drawn. There were indirect associations including experiences of trauma, psychosis, and substance misuse in relation to dissociation and attachment. There were also significant effects of genetic make-up, and brain connectivity, in individuals with disorganised attachment and higher levels of dissociative experiences.

Childhood trauma increases the likelihood of insecure attachment styles in adulthood (Lahousen et al., 2019), both which have been linked to the development of mental health difficulties (Mikulincer & Shaver, 2012), including dissociative experiences (Lorenzini & Fonagy, 2013). The current review found evidence that dissociative experiences were associated with fearful, anxious, and avoidant attachment, mediated by childhood trauma. However, in some of the papers, significant associations were dependent on other factors, such as decreased mentalising abilities, or specific trauma categories, such as sexual abuse. The interaction of lower mentalisation and overwhelming emotions of differing traumatic events, can increase the likelihood of dissociation through fragmentation of the self as a reaction to the traumas that have occurred (Liotti & Gumley, 2009). Therefore, considering wider theoretical literature, the impact of trauma categories and mentalisation appears important in the activation of dissociative responses.

Linking to cognitive mechanisms, Farina et al., (2012) found that individuals with a disorganised attachment show no changes in brain activity when reminded of childhood trauma, using dissociation as a cognitive strategy. It has been suggested that dissociation can act as a defence against trauma, and thus, dissociation becomes a type of "metacognitive failure" (Liotti & Prunetti, 2010, pg. 197; Van der Kolk et al., 1989). Additionally, childhood trauma can further disrupt the internal working model of the self and the metacognitive abilities of the child, resulting in dissociative experiences such as fragmentations of the self (Liotti, 2006).

Within this present review, psychosis-related papers looked at negative and positive symptoms independently, with attachment and dissociation being key mediators between trauma and negative symptoms in psychosis (Degnan et al., 2022). On the other hand, mixed evidence was found for the relationship between positive symptoms, trauma, dissociation, and attachment style. Pearce et al., (2016) found both dissociation and fearful attachment significantly mediate the relationship between childhood trauma and paranoia, however, only dissociation was significant in the relationship between childhood trauma and hallucinations.

This contrasts with a recent cognitive attachment model of voices (CAV). This collated evidence suggesting trauma, disorganised attachment, and dissociation as key predisposing factors for the

development of auditory hallucinations in adulthood (Berry et al., 2017). However, there have been limited measures of attachment style within the psychosis population; this raises the question of whether attachment can be reliably measured in these populations (Pollard et al., 2020; Berry et al., 2017).

In the current review, three papers reported on substance misuse, dissociation, and attachment, with conflicting results. One paper found dissociation to mediate the relationship between anxious or avoidant attachment styles and substance misuse (Gottfried, 2004) whereas another paper found the depersonalisation subscale was the only significant mediating dissociative factor (McAnena, 2001). Anxious or avoidant attachment and dissociation were only related to alcohol addiction through the indirect effect of alexithymia and an increased likelihood of exposure to traumatic events (Zdankiewicz-Ścigała & Ścigała (2020). Interestingly, it is disorganised attachment which has theoretical links with misuse of alcohol (Liotti, 1992) which was absent in these papers. McAnena (2001) does highlight disorganised attachment and would have included this in the analysis, however, the sample size was too small for further exploration.

1.5.2   Limitations

Most papers that were included in the review received a weak quality rating. Their cross-sectional design, limited details of sampling recruitment, and the absence of consideration of confounding variables, affects the reliability of the results. Conclusions drawn from this review need to be taken with caution as they may not infer causality (Wang & Cheng, 2020).

A variety of measures were used for assessing attachment style and dissociative experiences. Many of these were self-report measures, which increases the likelihood of both report and recall biases (Althubaiti, 2016). Secondly, the attachment measures used are based on two separate theoretical models, dimensional and categorical, which may reduce the reliability of the connections made between studies due to different entities being measured (Barazzone et al., 2018).

Overall, there was a wide range of different clinical presentations and settings captured by the studies, however, most papers were conducted within Western countries and had a higher representation of White individuals, and therefore, the results may not generalise to different ethnic groups. There was a higher percentage of females within the overall review, which should also be considered when applying these findings.

1.5.3   Clinical implications

Currently, there is no specific treatment plan from the NICE Guidance for DID or dissociative experiences. Within the PTSD NICE Guidance (2018) dissociation is mentioned as a useful concept to measure within the PTSD assessment, however, for treatment it is seen as a barrier to engage in trauma-focused therapies with no direction on how to manage dissociative experiences. The International Society for the Study of Trauma and Dissociation (ISSTD; 2011) have issued guidance for treatment of DID which incorporates three phases; stabilisation, confronting traumatic memories, and identity rehabilitation, for both individual and group therapy. Research suggests that adapting varying therapeutic approaches such as cognitive and dialectal behavioural therapy, trauma-based therapy, psychotherapy, and psychosocial interventions such as yoga, may be beneficial to include as a treatment for dissociative experiences (Bækklund et al., 2022; Boyer et al., 2022; Goldstein et al., 2020; Foote & Orden, 2016; Willy-Gravley et al., 2021). However, there is still limited clinical research that considers treatment for dissociative disorders or dissociative experiences (Bækklund et al., 2022).

This review has highlighted that it would be beneficial for the individual's attachment style and dissociative severity to be considered in clinical settings when deciding on therapeutic options for certain mental health conditions. It appears that there is an increased likelihood of those with dissociative experiences to have an anxious, avoidant, or a fearful attachment style. Both dissociation and attachment can affect cognitive appraisals, social ability, and affect (Sheinbaum et al., 2015), thus, measuring both may help decisions on how to formulate difficulties or tailor the intervention accordingly. Additionally, a failure to consider dissociation and attachment could result in damaging effects to the individual (such as increased suicidal risk), and to the healthcare system (such as increased treatment cost) (Rădulescu et al., 2020).

It is important to consider a Power Threat Meaning (PTM) Framework (Johnstone & Boyle, 2018) perspective on the findings of this research. The PTM suggests a narrative formulation to understand "over-arching structure[s] for identifying patterns in emotional distress, unusual experiences and troubling behaviour, as an alternative to psychiatric diagnosis and classification" (Johnstone & Boyle, 2018). This is further enforced by a position statement by the BPS which highlights the restrictiveness of the psychiatric diagnosis and a need to move to a more conceptual understanding of an individual's mental health experience. It is highlighted in research the importance of attachment research as it can play a large role in the development of a clinical formulation within services (Granqvist et al., 2017). Therefore, this research highlights possible

hypotheses between the experience of attachment and dissociation which could be implemented into collaborative case formulation processes rather than a focus on psychiatric labelling or diagnosis.

1.5.4   Guide to future enquiry

From the systematic review, we aim to highlight the key areas in the literature that seem crucial to widening and furthering our understanding of the relationships between dissociation and attachment, to try and improve the quality of life for those with dissociative experiences.

Replication of studies is paramount so the evidence base can continue to be developed, and researchers are able to draw more confident and firm conclusions from these areas. Methodology should be improved by using experimental methods (i.e., randomised controlled trials), large representative samples, and identifying possible confounding variables. Qualitative research exploring individuals' experiences of dissociation and attachment would allow a fuller and richer understanding of how these processes affect individuals on a day-to-day basis.

Dissociation can be experienced by individuals across a large range of mental health conditions (Rădulescu et al., 2020); this review highlights some of these in clinical samples. However, dissociative experiences in some other mental health difficulties such as anxiety and eating disorders, have not featured within this review although they have been examined in other studies. Further research looking into both clinical and non-clinical samples may capture these varying mental health conditions and consider how relational processes between dissociation and attachment play a part in their development and maintenance.

This review has highlighted two key areas of development for dissociation and attachment literature (See Table 7). The first area focuses on replication, in the hope that this will create a solid foundation for understanding the relationship between these two domains and how they might be assessed in clinical practice. The second area is treatment studies which consider key processes, and maintenance factors. The treatment studies would benefit from developing therapeutic approaches and adaptations for individuals who have experiences of dissociation and attachment difficulties.

Table 7

A table to highlight the gaps in the literature and possible study ideas to be considered to aid the development of this research domain.

Gaps in research	Possible research questions
Replication Studies[†]	- What are the relationships between anxious, avoidant attachment and/or fearful attachment in those with dissociative experiences? - What are the relationships between psychosis symptoms (positive & negative), trauma, attachment and dissociative experiences? - What are the relationships between different trauma experiences, attachment and dissociation? - What are the relationships between other mental health experiences (e.g., anxiety, eating disorders), dissociation and attachment? - What are the relationships between mentalisation, dissociation and attachment? - What are the relationships between disorganised attachment, dissociation and substance misuse? - What are the relationships between attachment, dissociation and biological factors (e.g., genetic studies, EEG analysis).
Treatment Outcome[‡]	- Do therapies that place emphasis on relational/attachment factors (e.g., schema, cognitive analytic therapy) improve dissociative experiences? - Do trauma therapy techniques (e.g., stabilisation, grounding) reduce dissociative experiences? - Do cognitive techniques impact the view of self and others (attachment style) and what is the impact of this on dissociative experiences?

[†] *Replication studies need to be considered in varying mental health conditions, as well as in both clinical and non-clinical samples.*

[‡] *The assessment prior to treatment would benefit from including attachment and dissociation measures to continue to map the relationship and observe outcome changes.*

- Does using different therapeutic interventions (e.g., cognitive behavioural therapy, third wave approaches, trauma focused therapy, psychosocial therapies) reduce dissociative experiences?

1.5.5 Conclusions

From the 16 papers that have been identified in this review, it can be concluded that there are various relational processes that connect dissociation and attachment. The evidence shows direct associations between anxious, avoidant and fearful attachment styles and increased dissociation severity, as well as various other factors such as trauma, substance misuse, psychosis, and biological mechanisms, that may mediate or connect attachment style to an increased risk of dissociative experiences. This review highlights the necessity of further research in this area in order to draw clearer conclusions to assist application within clinical practice and intervention.

Chapter 2   Developing a scale to measure dissociation between self-states (Dissociation – Integration of Self-States Scale, D-ISS)

The following paper was written to follow the 'Journal of Behaviour Therapy and Experimental Psychiatry' author guidelines. The guidelines can be found at https://www.elsevier.com/journals/journal-of-behavior-therapy-and-experimental-psychiatry/0005-7916/guide-for-authors

2.1   Abstract

Background and objectives: There is a clinical and research need for a tool to assess dissociation at the personality level, between modes or self-states, rooted in cognitive behavioural theory. The study continued the development and assessed the psychometric properties of the Dissociation – Integration of Self-States Scale (D-ISS). This measure assists assessment of and interventions for between-mode dissociation in clinical practice.

Methods: Two samples consisted of 344 young adults (16-25 years) who had experienced stressful or difficult times, and 383 adults (18-65 years) who had experienced mental health difficulties. Sample 1 was used for the Exploratory Factor Analysis (EFA), Sample 2 for the Confirmatory Factor Analysis (CFA). Internal consistency, test-retest reliability, convergent validity, and divergent validity were assessed within Sample 2.

Results: The EFA showed a five-factor model, which was confirmed as a good fit by the CFA. The D-ISS demonstrated good internal consistency and test-retest reliability. The D-ISS showed low to null correlations with divergent subscales. For convergent validity, the D-ISS showed a low to moderate correlation with the DES-II.

Limitations: The sample was mainly White female adults between 16-25 years. Therefore, generalisability to other cultural and age groups needs to be done with caution until the measure has been validated within these populations.

Conclusions: The new D-ISS measure of between-mode dissociation has been shown to be reliable and valid. To the best of our knowledge, this is the first psychometrically robust measure of dissociation between modes/self-states that has been developed. Further research into the application of the measure in clinical settings would be highly desirable.

Keywords: Dissociation, Scale development, Factor analysis, Self-states, Mental health

2.2   Introduction

Pierre Janet was a pioneering researcher of dissociation and its conceptualisation in the 1800's, Janet defined dissociation as an "abnormal mental integration of the different contents resulting in a lack of integration among two or more systems of ideas and functions that constitute personality" (Janet, 1907, cited in Scalabrini et al., 2020 pg. 2). In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), dissociation is defined as a 'disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behaviour' (p.291).

Dissociative symptoms and disorders are being increasingly observed in clinical samples such as, people with personality disorder presentations, psychosis and trauma-related presentations (Lynn et al., 2022; Sar 2011). The prevalence of dissociative disorders varies between 1% – 20%. The large variance encompasses both clinical and non-clinical settings (i.e., the general population), as well as the varied understanding of and training in the assessment of dissociative experiences (Boyer et al., 2022). Although, fully understanding the prevalence of dissociation and dissociative disorders proves particularly difficult due to the comorbidities that are found between other mental health diagnoses and dissociative experiences. Previous research has suggested that dissociative disorders is a diagnosis that is made up from a selection of criteria from other mental health diagnoses with its content validity as a diagnosis questioned (North et al., 1993). This understanding of dissociation has limited research, however, it is important to hold in mind as the concept of dissociation is discussed.

There is a wide range of research which focuses on the relational link between trauma and dissociation (Dalenberg et al., 2012). This has been termed the Trauma Model (TM) which dates back to the late 1800s, when Janet first documented possible psychological understandings of dissociation (Janet, 1889). Over the past 30 years, research has supported the theory that recurrent trauma can cause a breakdown in the integration of the self, creating fractured dissociative self-states as a coping reaction to the consequences of trauma (Putnam, 1997; Van der Hart et al., 2004). Specifically, certain traumatic experiences have been related to the development of dissociative symptoms, including sexual, emotional, or physical abuse, child neglect, or other recurrent severe trauma such as witnessing domestic violence (Dalenberg et al., 2014).

However, critiques have arisen for this model of dissociation. The majority of research around the TM is reliant on self-report responses and cross-sectional data which increases the likelihood of recall bias and social desirability bias (Razavi, 2001). Additionally, Kennedy et al., (2004) highlight that this research heavily concentrates on more extreme forms of dissociative experiences, such as dissociative identity disorder (DID), or borderline personality disorder (BPD), whereas there is good evidence for dissociative symptomology being experienced by people with a wide range of mental health disorders (Kennedy et al., 2004; Sar 2011).

Although the TM allows a further understanding of dissociation, it does not consider fundamental psychological processes that provide an explanation of dissociation (Kennedy et al., 2004). These critiques can be generalised to the assessment of dissociation where 11 related measures have been found (See Table 8). The Dissociative Experiences Scale (DES-II; Carlson and Putnam, 1993) appears to be the most common scale used within dissociation literature, however, it was developed in the 1990s, therefore ongoing theoretical advancements of dissociation are not captured (Černis et al, 2018). A further five scales were developed between the 1980s and the 1990s (CES, Goldberg, 1999; SDQ-20, Nijenhuis et al 1996; QED, Riley, 1988; PAS, Sanders, 1996; DIS-Q, Vanderlinden et al 1993). These scales offer an out-dated understanding as over time dissociation research has evolved into a bigger and more complex system with processes such as memory, identity, consciousness, and somatic symptoms playing a part in dissociative experiences (Fung et al., 2022; Kennedy et al., 2013)

Table 8

Description of available dissociation assessment tools

Author & Date	Dissociation Assessment Tool	Description
Carlson and Putnam (1993)	Dissociative Experiences Scale (DES-II, including DES-Taxon, DES-T)	The DES is a 28 item self-report scale. The DES-II includes the DES-T (eight items within the scale that measure pathological dissociation). Good psychometric properties have been reported.
Carlson et al., (2018)	Dissociative Symptoms Scale (DSS)	The DSS is a 20 item self-report scale. It attempts to measure moderate to severe experiences of dissociation. Reliability and validity have been reported as good within PTSD non-clinical and clinical samples.
Černis et al (2018)	The Dissociative Experiences Measure, Oxford (DEMO)	A 30 item self-report scale. It was developed to measure the broad range of dissociative experiences. Reported to have good psychometric properties in non-clinical samples.
Dell (2006)	Multidimensional Inventory of Dissociation (MID)	A 218 item self-report scale to assess pathological dissociation and dissociative disorders. Reported to have good psychometric properties.
Goldberg (1999)	Curious Experiences Survey (CES)	The CES includes the 28 items from the DES and three additional items to make it a 31 item self-report measure of dissociative experiences with the aim of being more user-friendly. Shown to have good psychometric properties in non-clinical samples.

Kennedy et al (2004)	The Wessex Dissociation Scale (WDS)	A 40-item scale which measures dissociative experiences based on a cognitive behavioural model of dissociation. Good psychometric properties have been found for this scale.
Nijenhuis et al (1996)	Somatoform Dissociation Questionnaire (SDQ-20)	A 20 item self-report scale to measure specifically the severity of somatoform dissociation. Psychometric properties have been reported as good.
Riley (1988)	Questionnaire on Experiences of Dissociation (QED)	A 26 item self-report scale which draws on dissociative experiences from clinical literature in 1988. Good psychometric properties have been reported on a sample of individuals with multiple personality disorder.
Sanders (1996)	Perceptual Alteration Scale (PAS)	A 25 item self-report scale which aims to measure dissociative experiences. Psychometric properties have been reported as good in non-clinical eating disordered populations. It is reported that further analysis is required before use as a clinical measure.
Steinberg (1994)	The Structured Clinical Interview for DSM-IV Dissociative Disorders-Revised (SCID-D)	A semi-structured interview which can be used to assess both dissociative symptoms and diagnose dissociative disorders in adults and adolescents. It can also be used to inform treatment planning.
Vanderlinden et al (1993)	Dissociation Questionnaire (DIS-Q)	A 63 item self-report scale which aims to measure dissociation. Psychometric properties have been reported as good.

Additionally, two of the scales are lengthy instruments which make them difficult and impractical for clinical use (MID, Dell, 2006; DIS-Q, Vanderlinden et al., 1993), as well as one interview assessment tool which would require a larger amount of clinician time and specialist input for diagnosis (SCID-D, Steinberg, 1994). The two more recent scales appear to measure the general construct of dissociation rather than specific levels of severity (DEMO, Černis et al, 2018), or they aim to measure moderate to severe experiences of dissociation and are validated only in samples of individuals with PTSD (Carlson et al., 2018).

A cognitive behavioural model of dissociation was proposed by Kennedy et al., (2004). This was influenced by Beck's (1996) cognitive theory of personality and psychopathology and was used to identify key processes of dissociation. Beck's (1996) model suggests that personality is made up of "modes", which are described as "network[s] of cognitive, affective, motivational, and behavioural components… [which] are designed to deal with specific demands or problems" (Beck, 1996, pg. 2). Modes contain different schemas (underlying neurological structures and software) and engage in an automatic process where they collect cognitive, emotive, physical, and behavioural details from intrinsic and extrinsic events. Modes and schemas are described as having efficient communication systems, which can exchange information, and switch when necessary. For example, if the orienting schemas assess either the internal or external event as threatening, as soon as this is the case, the schema's stop associating information which leads to a dissociative mode response. Therefore, dissociation takes place when modes and schemas fail to associate what is normally associated. These failures to associate can occur at three different levels: automatic; within-mode; and between-mode (See Figure 2).

Automatic dissociation (Level I) - At this early level of information-processing, threatening stimuli are identified quickly via orienting schemas (pattern recognition schemas whose purpose is to recognise contexts based on previous learning). The speed of identification blocks the brain's ability to process the information in a coherent manner, resulting in 'spacing out', where the person seems not to be mentally present in the room. Information processing is incomplete, resulting in fragmented memory and intrusive images. Automatic dissociation results in lack of storage of information, as well as intrusions of visual, auditory, and olfactory hallucinatory fragments.

Figure 3

Cognitive behavioural model of dissociation (Kennedy et al., 2004).
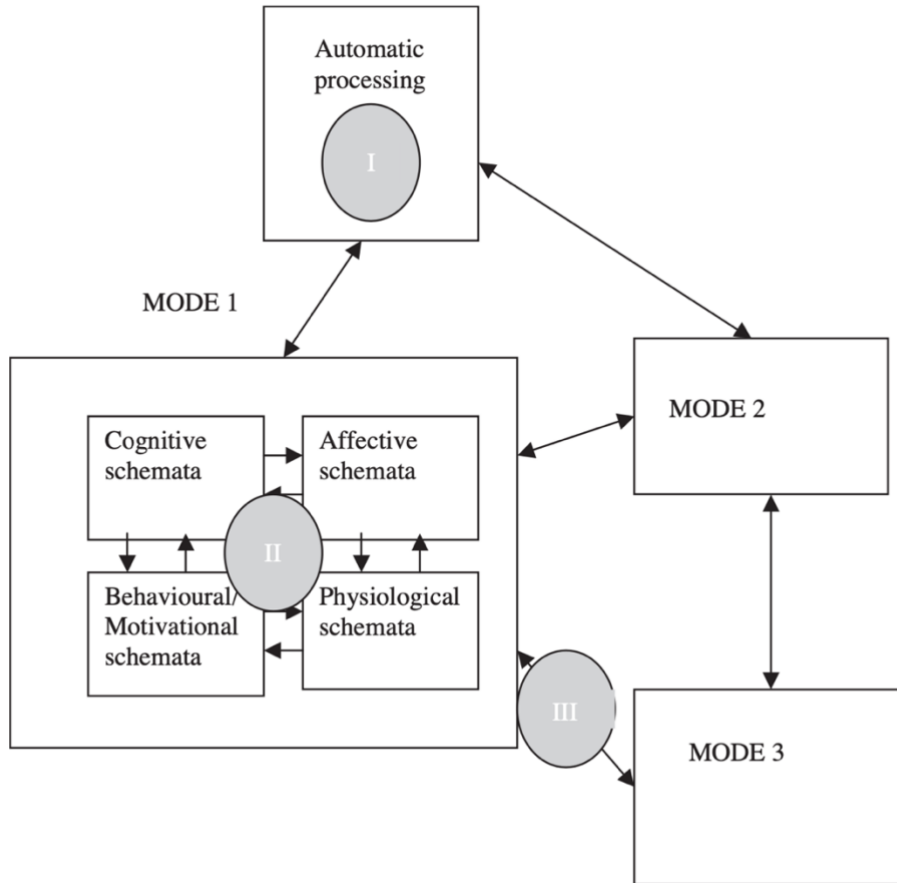
Within-mode dissociation (Level II) - For this level of dissociation there is compartmentalisation of emotional, cognitive, behavioural, or physiological schemas within a mode. Information is stored but cannot be accessed through an act of will. This means, for example, if cognitive schemas are dissociated/compartmentalised, an incapacity to think can occur. The corollary of this is that thought intrusion can also occur, where the person experiences unwanted and seemingly non-relevant thoughts. Dissociation of behavioural schemas can lead to an inability to perform certain behaviours, such as walking or speaking, as well as re-enactment, ritualistic and superstitious behaviours. Dissociation/compartmentalisation of physiological schemas can lead to out of body experiences, depersonalisation, and auto-analgesia, as well as intrusive, non-organic pain.

Between-mode dissociation (Level III) - This level of dissociation results in some or complete separation of modes on a personality level and is linked with complex mental health diagnoses. For example, some separation could be characteristic of Borderline Personality presentation. A

more extensive separation between modes is more likely to be associated with DID. This level of dissociation is linked with severe symptoms such as amnesia, losing time, fugue states and dissociative identity disorder. The separations that occur within these diagnoses is commonly termed as self-states and are defined as separate distinct personalities. Self-states are a result of fragmentation of the personality which can occur during key developmental periods of childhood (Nijenhuis et al., 2014). The TM conceptualises self-states as a coping mechanism which a child has learnt to switch between different personalities allowing quick adaption when contexts may be traumatising, distressing, or unpredictable (Stokoe, 2014). However, although self-states function as adaptive during childhood, this can quickly turn into maladaptive if they continue after the threat has been taken away. Self-states can then cause individuals to have a lack of integration, cohesion, control and awareness, all which can result in a frightening place to be (Stokoe, 2014).

However, the SCM offers a different understanding of self-states with them being described as metaphors created by suggestible individuals who have increased fantasy abilities (Merckelbach et al., 2002), or as a result of iatrogenesis (Loewenstein, 2018). The SCM suggest that there is limited research that supports the relationship between dissociative experiences and childhood trauma (Lilienfeld et al., 1999). Regardless of the model that is used to conceptualise self-states, there is still an importance to understand these experiences for an individual and to help manage distress (Stokoe, 2014). Therefore, a questionnaire which would help inform formulation of self-states and between-mode dissociation would be a useful tool in both clinical and research domains.

Kennedy et al., (2004) elaborated the cognitive behavioural model, as described above, by developing the Wessex Dissociation Scale (WDS), a measure which was specifically designed with the three different levels of dissociation in mind. The measure is a 40 item self-report scale and is based on the occurrence of dissociative experiences. The developmental paper of the WDS shows the scale to have good internal consistency, convergent validity, and concurrent validity (Kennedy et al., 2004). However, the factor structure of Level III (between-mode dissociation) was deemed inadequate, as the Level III items did not load significantly on just this factor. To the best of our knowledge, therefore, there is currently no reliable and valid scale that assesses personality level (between-mode) dissociation from a cognitive behavioural standpoint.

Developing a measure for between-mode dissociation is crucial for clinical practice. It is formulated within the cognitive behavioural model that between-mode dissociation is present

within the diagnoses of more complex dissociative disorders and borderline personality presentations (Kennedy et al., 2004). Individuals with these diagnoses have been found to have an increased likelihood of revictimization, suicidal ideation, self-harming behaviours, and poorer physical health (Bockers et al., 2014; Boyer et al., 2022; Rodante et al., 2019). As a result of these complex needs, these individuals have an increased demand on healthcare and social services causing them to be clinical groups associated with significant financial costs (Boyer et al., 2022; National Institute for Health and Care Excellence, NICE, 2009). However, due to stigma, misdiagnosis, lack of training, and lack of assessment of between-mode dissociation, it is calculated that individuals spend 5-12 years within services prior to getting the correct diagnosis, with symptomology worsening over time (Gleaves & Reisinger, 2023; Loewenstein, 2018). This is another reason to develop a measure which can assess and inform formulation and treatment for dissociation at the personality level (between-mode) which is based on robust psychological theory.

2.2.1 Aim

Our aim was to develop a scale to measure between-mode dissociation and assess its psychometric properties by analysing the following research hypotheses:

(1) Factor Structure

    a. The exploratory factor analysis (EFA) will demonstrate a clear factor structure.

    b. The confirmatory factor analysis (CFA) will confirm a good fit to the model.

(2) Reliability

    a. The scale will have good internal reliability.

    b. The scale will have good test-retest reliability.

(3) Validity

    a. The measure will show convergent relationships with existing dissociation scales.

    b. The D-ISS will show divergent validity against scales not explicitly measuring between-mode dissociation.

2.3 Material and Methods

2.3.1 Item generation – Development of the Dissociation-Integration of Self-States (D-ISS) Scale

Initial D-ISS items were developed based on the cognitive-behavioural model of dissociation and aimed to specifically describe features of level three (between-mode) dissociation. Items were

generated by the second author (a clinician with extensive experience of research and practice in this area) and a trainee clinical psychologist who led the initial study as part of their doctoral thesis project. The developers considered important targets of change frequently identified within clinical practice when working with level three dissociation. These included an individual's awareness, acceptance, and control of their self-states along with the degree of difference or 'psychological distance' between self-states, and the extent to which self-states were integrated into the 'self' or 'me' versus not experienced as part of the individual, or 'othered'. Using clinical experience and theoretical understanding of the cognitive model of dissociation, an item pool was created which seemed pertinent to the topic. Through several revisions, a final item pool of 55 items was created and was taken to a consultation with individuals of lived experience with dissociation through known clinicians for feedback. A five-point Likert scale was used ranging from 0 (strongly agree) to 4 (strongly disagree), with opposite scoring used for reversed items.

2.3.2   Sample 1

2.3.2.1   Participants and procedures

The first phase of the study employed a cross-sectional secondary data analysis design using survey-based questionnaire responses. The data used was collected by a previous doctoral trainee as part of their research thesis using the initial 55-item questionnaire (Smart, 2021). Originally, 474 individuals took part; because of missing data 130 questionnaire responses were removed, making the final sample 344 participants. Most participants identified as female (84.6%) and White (78.8%).

All participants had to confirm that they were aged between 16-25 years (M = 19.94, SD = 1.95) and that at some point in their life they had experienced difficult or stressful times. Once confirmed, access to the online self-report questionnaire was granted. Once finished, a mood repair task was given to participants, as well as the debriefing form.

Ethical approval was granted by the University of Southampton Ethics Committee to use results from this sample as secondary data in the present study (ERGO: 71854.A1; Appendix D).

2.3.2.2   Measures

The full questionnaire included demographic questions which asked about age, gender, ethnicity, and mental health diagnoses. Sample 1 completed the 55-item set comprising the D-ISS to be

assessed in this research. The D-ISS sat within a wider pool of measures which were not relevant to our study.

2.3.2.3 Data analysis – Exploratory Factor Analysis

Data analysis was conducted using SPSS Statistics for Windows, Version 29.0. Exploratory Factor Analysis (EFA) is a suitable and valuable analysis for the beginning stages of questionnaire development (Kishore et al., 2021). Sample size guidance suggests 100-200 participants (MacCallum et al., 1999), however between 300 and 500 participants constitutes a good to very good sample (Comrey and Lee, 1992). Sampling adequacy is considered suitable if the Kaiser Meyer-Olkin (KMO) value is higher than 0.5 and Bartlett's Test of Sphericity is significant ($p < .05$) (Tabachnick & Fidell, 2007).

Histograms were chosen to assess the distribution of data (Wilkinson and APA Task Force, 1999) with the majority showing normal distribution. A minority showed moderate negative and positive skew. However, the likelihood of skewness increases due to larger sample sizes and therefore, the central limit theorem allows for some deviation (Field, 2018).

Regarding factor extraction, Kaiser's criterion was set at an eigenvalue of 1. The scree plot was the chosen factor extraction method: research suggests that with sample sizes over 200 using a scree plot is the most appropriate method to decide the number of factors to retain (Stevens et al., 1992). The minimum communality cut-off figure was decided as 0.3 which is supported by literature, any items with a communality lower than this were dropped from the analysis (Zeller, 2005). Principal axis factoring with direct oblimin oblique rotation was selected as it was assumed that factors would correlate with each other (Field, 2018). The cut-off for loadings onto factors was .45, considered a fair loading by Comrey and Lee (1992). Cross-loadings which had a difference of >.2 were removed. The refinement of the questionnaire was undertaken which is detailed in Section 2.4.2.1 which resulted in the further refined 25-item questionnaire used with Sample 2.

2.3.3 Sample 2

2.3.3.1 Participant recruitment and procedures

The second phase of the study employed a cross-sectional survey-based mixed design. Participants were recruited using purposive recruitment, via MQ Participate, Call for Participants, University of Southampton Twitter, and the Southampton Psychology Undergraduate platform.

There was no missing data due to the forced choice method used. Ethical approval was granted by the University of Southampton Ethics Committee (ERGO: 72890, Appendix D).

The data was collected from a new sample and used the refined 25-item questionnaire output from the EFA. In total 383 participants aged between 18-65 years of age completed the online questionnaire, the majority aged between 18-25 ($n = 324$). Most of the participants were female (81.5%) and White (66.8%). To assess test-retest reliability, 77 of the 383 participants completed the questionnaire again at a second time-point, two weeks after their initial completion of the questionnaire.

Participants had to be aged between 18 – 65 years and reported experience of mental health difficulties. Participants completed the online self-report questionnaires. They were then given the debriefing form. Examples of the questionnaire layout, including the ethics documents can be seen in Appendix E & F. Participants had the option to click into a separate survey where they could enter their email into a prize raffle draw and have the option to consent to the researcher sending the questionnaire out again to complete in two weeks' time. If participants accessed the study via the Southampton Psychology Undergraduate platform, they received credits which contributed to one of their academic modules.

2.3.3.2 Measures

The full questionnaire included demographic questions which asked about age, gender, ethnicity, and mental health diagnoses. Sample 2 completed the 25-item set comprising the D-ISS to be assessed in this research and a further two measures, described below, to enable analysis of the psychometric properties of the D-ISS.

2.3.3.2.1 Dissociative Experiences Scale—revised version (DES-II: Carlson & Putnam, 1993)

The DES-II has 28 self-report items assessing the frequency and severity of an individual's dissociative experiences. The scale uses an 11-point Likert-type scale which measures the percentage of time the individual has these experiences, using increments of 10%, from 0% (never) to 100% (always). The scale has three subscales: amnesia (6 items); absorption (6 items); depersonalisation/derealisation (6 items). Additionally, Waller et al., (1996) identified the 'DES-Taxon' consisting of 8 items within the DES-II sensitive to more pathological dissociative experiences. The DES-II is an established measure with good psychometric properties (Carlson and Putman, 1993). *Cronbach's a* for Sample 2 at the first and second time point was 0.94 and 0.95 respectively.

2.3.3.2.2   Wessex Dissociation Scale (WDS: Kennedy et al., 2004)

The WDS has 40 self-report items assessing the severity of dissociation based on the cognitive-behavioural model. A six-point Likert-type scale assesses the frequency of each dissociative experience from 0 (never) to 5 (all the time). The WDS has three subscales, automatic (11 items), within-mode (12 items), and between-mode (17 items). Therefore, as well as an average total, the scoring of the scale can be broken down into the subcategories of dissociation proposed by the model. Therefore, an individual would score higher on the automatic subscale if they were experiencing spacing out, fragmentation of memory and intrusive imagery. Someone with within-mode dissociation may score highly on items related to pain, emotional numbness, or thought blocking. Those that experience between-mode dissociation may score higher with items related to amnesia, fugue states, and/or loss of time. The scale has been shown to have good psychometric properties (Kennedy et al., 2004). The Cronbach's *a* for Sample 2 at the first and second time point was 0.94 and 0.95 respectively.

2.3.3.3   Data analysis – Confirmatory Factor Analysis

The confirmatory factor analysis (CFA) was conducted using SPSS Amos Version 29.0. To further analyse the psychometric properties of the questionnaire all the refined items from the EFA output were analysed with a CFA using the data collected in Sample 2. Descriptive statistics including means and standard deviations were completed, to describe normative scores within the sample population. For CFA analysis, a minimum sample size of 150 to 315 participants is suggested within the literature (Muthén & Muthén, 2002). Our sample size was 383 participants. The CFA analysis showed maximum likelihood completed with no violations of normality. The goodness of fit parameters used in the study for the CFA were the comparative fit index (CFI) and a Tucker-Lewis index (TLI) over 0.9 (Bentler, 1990), a root mean squared error of approximation (RMSEA) below 0.08 (Fabrigar et al., 1999), and a standardised root mean square residual (SRMR) below 0.08 (Hu & Bentler, 1999). Respecifications were considered from the modification indices (MI) output for error covariations only if they improved the fit and made theoretical sense (Byrne 2010).

2.3.3.4   Reliability

Inter-item correlations were used to assess internal consistency of the D-ISS items. Cronbach's *a* was used on the new D-ISS overall questionnaire and the subscales at the first time point to assess internal consistency. Intra-class correlation coefficients (ICC) were deemed the most widely accepted for test-retest reliability analysis (Koo & Li, 2016). The Consensus-based Standards for

the selection of health Measurement Instruments (COSMIN) Checklist (Mokkink et al., 2019) suggests 50 – 99 participants for test-retest reliability shows good methodological quality. Our sample size was 77 participants. The second questionnaire for test-retest was sent out two weeks after first completion (Streiner and Norman, 2008).

2.3.3.5   Convergent and divergent validity

Pearson's correlation coefficient was used to analyse convergent and divergent validity between the newly developed D-ISS with already existing established measures of dissociation (WDS, Kennedy et al., 2004; DES-II, Carlson & Putnam, 1993). Moderate to strong correlations would suggest convergent validity, and weak to null correlations would suggest divergent validity.

For convergent validity, it was expected that the D-ISS would show moderate to strong correlations with the DES-II overall and the DES-Taxon. It was also expected that there would be moderate to strong correlations between the D-ISS and WDS, as well as the D-ISS and the between-mode subscale of the WDS. To assess divergent validity, weak or no correlations were expected between the D-ISS subscales and WDS automatic and within subscales.

2.4   Results

2.4.1   Demographic information

Demographic information for Sample 1 and Sample 2 can be seen in Appendix G.

2.4.2   Sample 1 analysis

2.4.2.1   Exploratory Factor Analysis and scale refinement

The KMO measure of sampling adequacy was .935 which is classified as a 'marvellous' rating (Sofroniou & Hutcheson 1999). Additionally, Bartlett's test of sphericity was significant ($p < .001$; Field, 2018). The .3 cut off that was used for communalities (Field, 2018) resulted in a total of two items being eliminated from the analysis.

The determinant value was not acceptable due to it being below .00001, suggesting multicollinearity or singularity within the data set. When this occurs, scanning the matrix for large correlational pairs greater than .8 or .9 is recommended, however, in the dataset, no variables were identified as correlating highly. It was decided to complete multiple regressions, with each

dependent variable in turn with all the remaining items as independent variables (Tabachnik & Fidel, 2007). From this output, if the variance inflation factor (VIF) exceeds 4.0, or the tolerance levels go below 0.2 then a problem with multicollinearity is assumed (Hair et al., 2010). To assess this, 55 multiple regressions were completed and this resulted in one item exceeding the VIF and tolerance levels on 53 out of 55 multiple regressions. This item was removed from the analysis.

The first EFA was completed with the remaining 52 items. The scree plot showed a levelling off after 6 which explained 56.79% of the total variance. In total there were 14 items that were removed due to low loadings (<.45), and three that were removed due to cross loadings (>.2). The factor analysis was repeated with the remaining 35 items. As a result of one further low loading, and three cross loadings, four items were dropped. A further six items were dropped due to the following reasons, not seeming theoretically meaningful and reducing face validity, or to reduce the number of reverse style questions to make it more efficient as a clinical measure. The final EFA with a total of 25 items had a scree plot with 5 factors prior to the point of inflexion and in combination explained 61.94% of the total variance (See Figure 3). A five-factor structure was further evidenced by Kaiser's criterion as only the first five items had eigenvalues greater than 1.

Figure 4

Scree Plot
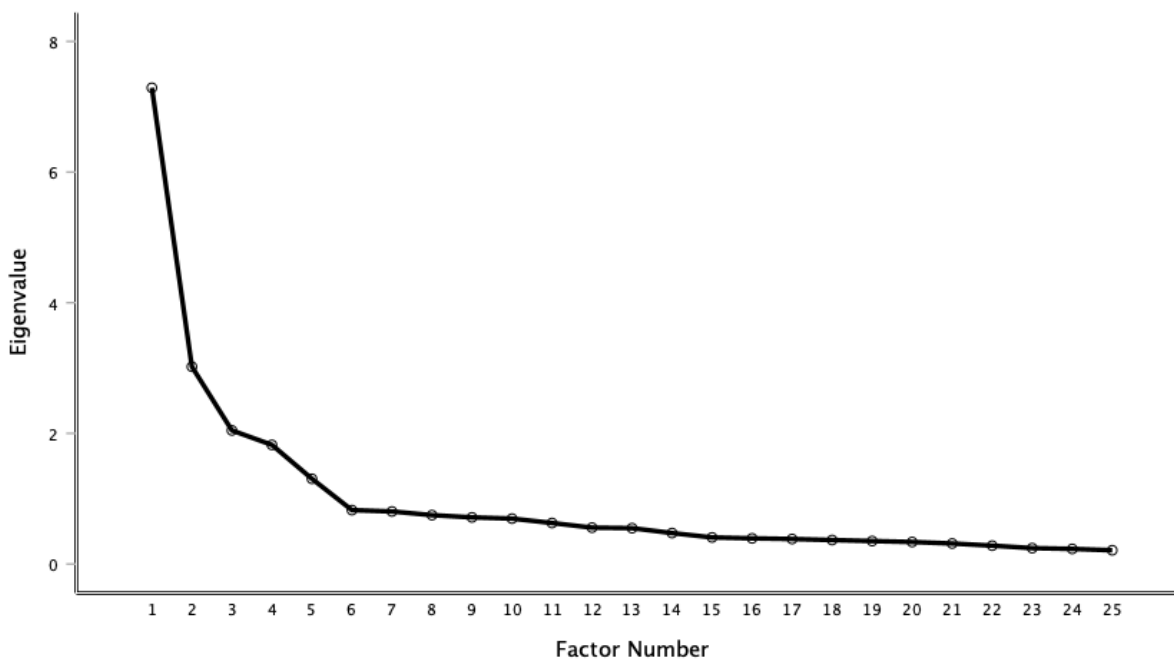
The final model consisted of 25 items with 5 items in each factor (see Table 9). The first factor was termed "Lack of Acceptance", second factor "Lack of Awareness", third factor "Lack of Integration", fourth factor "Difference/Distance", and finally the fifth factor "Lack of Control". The factor correlation matrix can be seen in Table 10.

Table 9

EFA Factor Loadings

Items	Factor				
	1	2	3	4	5
I hate some self-states (Acceptance 3)	.787				
I would like some self-states to disappear (Acceptance 5)	.728				
I would like to get rid of some self-states (Acceptance 1)	.676				
I feel like punishing some self-states (Acceptance 4)	.593				
The self-states cause problems in my life (Acceptance 2)	.468				
I am very aware of having different self-states (R) (Awareness 1)		.663			
I am aware of all my different self-states (R) (Awareness 3)		.643			
I know when I have shifted from one self-state to another (R) (Awareness 2)		.629			
I can tell when I have been in one self-state and then in another (R) (Awareness 4)		.571			
I am not aware of all the self-states (Awareness 5)		-.563			
I feel that the self-states are combined to form me as a whole (R) (Integration 1)			.785		
I am formed of all the self-states (R) (Integration 5)			.745		
The self-states are all aspects of me as a person (R) (Integration 3)			.633		
The self-states feel connected together in some way (R) (Integration 4)			.623		

The self-states are integrated together (R) (Integration 2)		.588	
The different self-states have different names (Difference 1)	.784	
When I'm in one self-state I often don't remember what happened when I was in a different self-state (Difference 2)	.576	
Some self-states are male and some are female (Difference 3)	.574	
Some self-states are children, some are more grown up (Difference 4)	.476	
Some self-states are dangerous to me or other people (Difference 5)	.467	
I have control over moving between self-states (R) (Control 1)		.710
I have no choice over whether I move between self-states (Control 2)		.695
I cannot control whether I end up in one self-state or another (Control 3)		-.653
I have no choice about what self-state I am in (Control 5)		-.634
I can choose what self-state I am in in any situation (R) (Control 4)		.600

Note. Text in brackets relates to the CFA items in Figure 5.

Table 10

Factor Correlation Matrix

Factor	1 (Acceptance)	2 (Awareness)	3 (Integration)	4 (Difference)	5 (Control)
1 (Acceptance)	1	-.033	-.198	.362	-.424
2 (Awareness)	-	1	.275	-.117	.318
3 (Integration)	-	-	1	-.116	.354
4 (Difference)	-	-	-	1	-.250
5 (Control)	-	-	-	-	1

2.4.3 Sample 2 analysis

Descriptive statistics for the overall D-ISS score and subscales can be seen in Table 11.

Table 11

Descriptive statistics for the D-ISS overall total and the five subscales

	Descriptive Statistics	
	M	SD
D-ISS Overall Total	39.05	12.83
Awareness	7.35	3.09
Integration	6.54	3.29
Difference	5.69	4.09
Acceptance	9.73	5.32
Control	9.73	4.13

M: mean; SD: standard deviation.

2.4.3.1 Confirmatory Factor Analysis

The initial model showed an overall poor fit (CFI - .874, TLI - .857, RMSEA -.071, SMRI - .067). It can be seen from these figures that the CFI and TLI were the reasons that the model was concluded as a poor fit as they were just below the .9 cut-off. Using the MI, seven respecification steps were conducted, which resulted in the final model showing an overall acceptable fit (CFI = .925, TLI = .912, RMSEA = .055, SMRI = .064; See Figure 4). The seven error covariances were added to the CFA model for those between the same factor, no error covariances were added between different factors as this may have reduced the interpretability of the factors (Bathe-Peters et al., 2023). Error covariances were added for those which had high values on the MI output (>10): it was assumed they had shared variance due to similar item content (Byrne 2010; Hoyle, 2012).

Figure 5

Confirmatory factor analysis model.
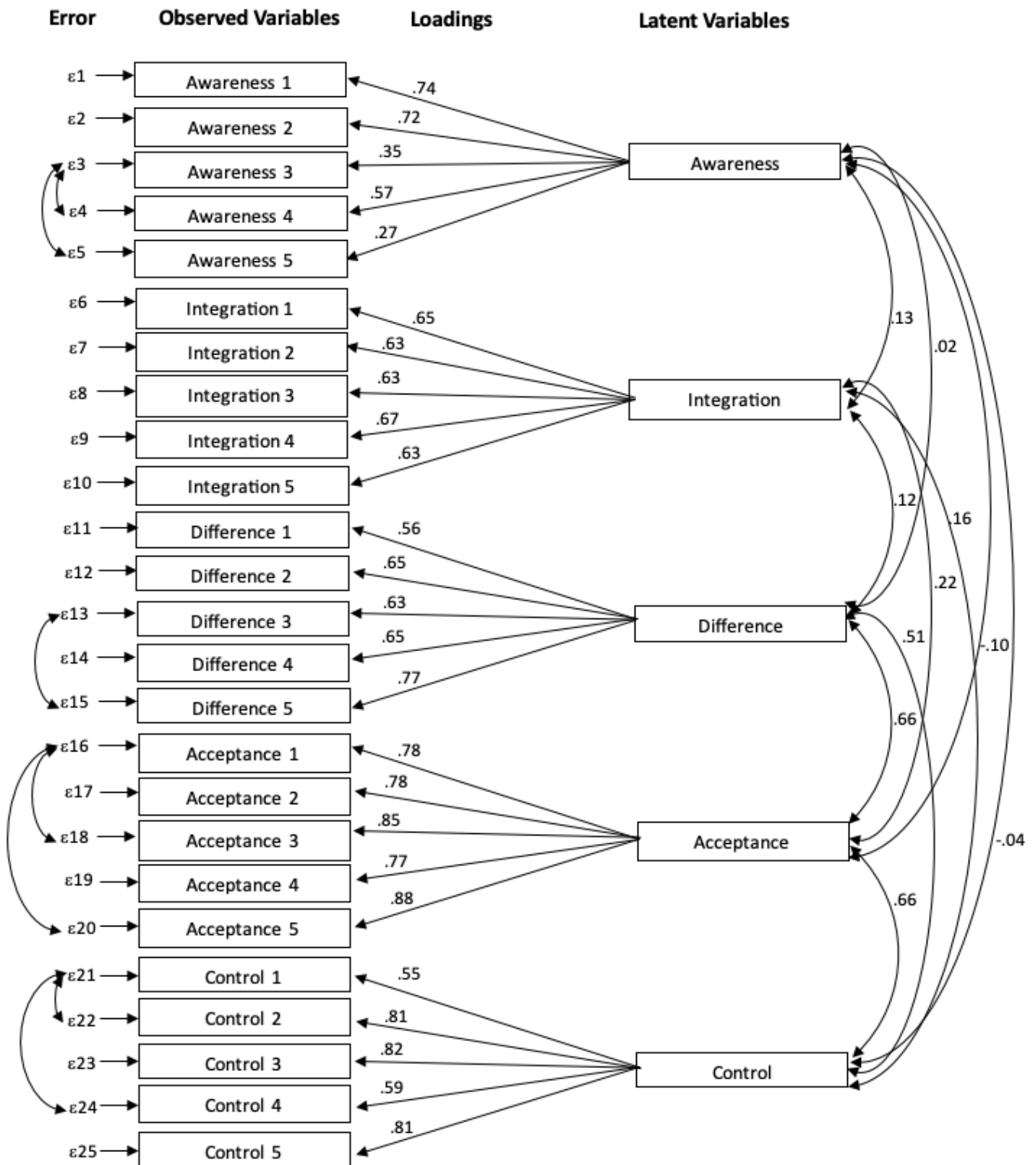
2.4.3.2   Reliability

The D-ISS showed good reliability (Cronbach's a = .865) with all the subscales achieving acceptable to excellent reliability (Cronbach's a = .710 - .907; George and Mallery, 2003). Full details on the Cronbach a output for the subscales of the D-ISS can be seen in Table 12. The majority of inter-item correlations ranged between low to moderate correlations, with a small amount being highly correlated. Item-total correlations were all in the acceptable range ($r > 0.3$), and Cronbach a if item deleted either decreased or did not make a significant enough difference to delete the item. For test-retest reliability, the average ICC for the total scale and the subscales showed moderate ($r = 0.5 - 0.75$) to good reliability ($r = 0.75 - 0.9$; See Table 13).

Table 12

Cronbach a for each of the five D-ISS Subscales

D-ISS Subscales	Cronbach Alpha
Awareness	.710
Integration	.778
Difference	.769
Acceptance	.907
Control	.852

Table 13

Test-retest reliability output for the five subscales of the D-ISS.

	ICC	Confidence Interval (95%)
Awareness	.526**	.258 - .698
Integration	.753**	.605 - .844
Difference	.847**	.760 - .903
Acceptance	.832**	.736 - .893
Control	.729**	.576 - .829
Total Scale	.826**	.727 - .889

ICC: intra-class correlation coefficient. **$p < .001$.

2.4.3.3 Convergent and divergent validity

The D-ISS was correlated against similar measures and showed significant correlations with the DES-II (r = .40 , p < .001) with a moderate effect size, and the DES-II Taxon (r = .10, p <.05) with a small effect size. Small effect sizes and non-significant correlations were found when comparing the D-ISS and the WDS (r = -.028 p > .05). Full output of the correlations and significance levels for the WDS subscales can be found in Table 14.

Table 14

Pearson's correlations between the D-ISS subscales when correlated against the WDS subscales

	WDS Subscales		
	Automatic	Within	Between
Awareness	-.002	-.014	.009
Integration	-.017	-.060	-.037
Difference	-.018	-.035	-.015
Acceptance	-.017	.022	.040
Control	.035	-.019	-.007

2.5   Discussion

We assessed the psychometric properties of the Dissociation – Integration of Self-States Scale (D-ISS), a new measure developed for use in clinical practice and research to promote assessment of and intervention for between-mode dissociation. Overall, our results indicate that the measure has a clear and robust factor structure and good psychometric properties.

The first hypothesis stated that the D-ISS would demonstrate a clear factor structure with a good fit achieved from the CFA. The EFA output showed a clear five factor structure and the CFA confirmed this by showing goodness of fit.

The second hypothesis stated that the D-ISS would be internally consistent and show good test-retest reliability. This was achieved with a good Cronbach *a* rating for the overall scale, and subscales achieving acceptable to excellent ratings. Regarding the second part of the reliability hypothesis, the scale showed good test-retest reliability and subscales achieved moderate to good test-retest reliability suggesting that the individual's performance on the D-ISS is stable over time.

The first part of the third hypothesis stated that the D-ISS will show convergent relationships with existing dissociation scales. The results did not support this hypothesis as the general cut off for convergent validity is a correlation greater than 0.5. Comparison of the D-ISS with the DES-II showed a moderate significant correlation with a medium effect size and with the WDS and its subscales, a negligible correlation with a small effect size. A small significant correlation was observed between the D-ISS and the DES-Taxon. The second part of the hypothesis stated that the D-ISS will show divergent validity with the WDS subscales of automatic and within-mode dissociation. The results did support this hypothesis as they showed negligible non-significant correlations.

Although the first part of the hypothesis relating to convergent validity was refuted and went against the researcher's initial expectations, it has allowed reflection as to why this may have occurred. It is understandable for weak to moderate significant correlations to be found between the scales as the D-ISS does hold a similarity in terms of attempting to measure a form of dissociation. However, the reasoning behind the correlations not obtaining strong associations may be due to the items on the D-ISS offering different terminology such as referring to self-states in the items. The correlations between the D-ISS and the WDS were found to be weak to null non-significant correlations. This is to be expected with levels one and two on the WDS but was not expected with level 3 (between-mode). The result for level 3 may indicate that the D-ISS is a better measure of between-mode dissociation than the WDS. As mentioned earlier, the Level 3 factor of the WDS does not have convincing item loadings and so may not be an adequate measure of level 3 dissociation (Kennedy et al., 2004), therefore, it is understandable that the D-ISS may not show convergent validity with level 3 of the WDS. Future studies should create new hypotheses for convergent validity which state that the D-ISS would understandably not display strong correlational relationships with other dissociation measures.

2.5.1 Strengths and limitations

Regarding methodological strengths, the EFA, CFA, and test-retest reliability analyses were all adequately powered given the sample sizes recruited, further supporting the robustness of the analytic output. Although the sample was from the general population / university students, individuals with mental health difficulties were the targeted sample, with most participants disclosing a mental health diagnosis which therefore captures individuals that are more likely to encounter dissociative experiences.

Considering limitations of the research, the development of the questionnaire may have been improved through higher level of patient involvement. Within this research, the questionnaire included a consultation which allowed individuals with lived experience of dissociation to offer feedback on the item pool. However, recent research around questionnaire development and patient involvement highlights an approach which includes both a cognitive task and a follow up discussion, suggesting the benefit of multiple opportunities of patient involvement for questionnaire development (Mes et al., 2019). Repeated inclusion of individuals with dissociative experiences may have reduced the effect of response error or burden to complete the questionnaire (Mes et al., 2019). Research clearly marks the importance of developing guidance around patient involvement in questionnaire design to help with consistency across the designing process (Wiering et al., 2017).

The original EFA sample was completed by young adults aged between 16-25 years, and the majority of the CFA sample was completed by university students aged between 18-25 years. Both majorities of the samples were female and identified as White. Therefore, generalisability to older adult groups, males, and non-White ethnic groups needs to be further investigated.

Data collected via internet-based surveys increases the likelihood of self-selection bias due to some individuals being more likely to complete online surveys than others, automatically creating a systemic bias (Wright, 2005). Additionally, the collaboration of an online survey and self-report data results in some uncertainty regarding the demographic data as there is no guarantee that they are accurate responses (Wright, 2005).

2.5.2 Clinical implications

The D-ISS is the first scale that has been developed to measure between-mode dissociation (See Appendix H for the full questionnaire and scoring instructions). The design of the scale promotes use in clinical settings due to its short length, a key criterion to consider with limited healthcare resources (Kemper et al., 2013). Additionally, the number of items included in the D-ISS offers a quick scoring system of a maximum overall score (100), and equal maximum for each factor (20), for easy use within clinical practice and research.

With dissociation being a complex phenomenon, one which is clouded in stigma and misunderstanding, it is often missed within clinical practice (Gleaves & Reisinger, 2023; Loewenstein, 2018). Current dissociation measures are described as being embedded within "conceptual unclarity", adding to the difficulty in the assessment and intervention for dissociative disorders (Fung et al., 2022, p.3). Therefore, it is hoped that the D-ISS will offer a clear and concise measure for dissociation and will promote assessment, formulation, and psychological treatment of an individual's dissociative experiences. Using the D-ISS alongside other dissociation measures such as the WDS or the DES-II would provide a more extensive picture of an individual's dissociative experiences.

Additionally, the scale allows clinicians to think about dissociation as a process rather than a diagnosis. The scale offers an understanding of the degree of severity of dissociative experiences which can work alongside other difficulties that they may experience. Thinking from a TM perspective of dissociation, the higher the scores on the scale may raise hypotheses for clinicians around the more severe the trauma that the individual may have experienced, with dissociation being suggested as a mechanism developed for trauma survival (Van der Hart et al., 2004). Therefore, thinking from a PTM framework (Johnstone & Boyle, 2018), the D-ISS offers an understanding of the function of self-states for individuals which lends itself well to considering their childhood experiences, coping strategies for emotional dysregulation, as well as, an understanding for possible behaviour that is causing them distress. As a result, the D-ISS can be used as a tool to help inform assessment and collaborative case formulation for clinicians and those with dissociative experiences.

2.5.3 Future research

Due to the sample population being predominantly young White females, assessing the reliability and validity of the D-ISS in different cultural groups would be beneficial. This would include those

that are not deemed as Westernised societies, as well as populations that differ in age and social status, in the hope that this would further solidify the measure's conceptual and psychometric properties on a larger global scale.

Replication studies are highly recommended to further validate the scale and its use in different clinical populations. Previous research suggests that dissociative symptoms are experienced along a continuum of different clinical diagnoses with increasing severity. For example, systematic review research has found the highest dissociation scores in PTSD, BPD, and dissociative disorders, and the lower range of scores in mood disorders and substance use related disorders (Lyssenko et al., 2018; Rădulescu et al., 2020). From these replication studies, the overall aim would be to create clinical normative scores for the D-ISS for different clinical populations, which can then be used in psychological assessment, formulation, and treatment outcomes.

Regarding treatment outcomes, the scale would be useful in future research to assess whether higher scores on the D-ISS are linked to higher scores of differing mental health pathologies, or alternatively whether therapeutic intervention results in a decrease in scores signifying recovery. Specific therapeutic interventions such as schema therapy may also benefit from using the D-ISS in treatment outcome research as it adds another dimension of understanding if the schemas are dissociated. Additionally, the scale could also be used as a measuring tool to further understand dissociation on a personality level and its associations between different psychologically related factors.

2.5.4 Conclusions

The D-ISS is a new scale for between mode or personality level dissociation. The preliminary evidence has shown the D-ISS as a reliable and valid measure with a good factor structure. Divergent validity has been supported, with convergent relationships needing altered hypotheses in future research to consider the theoretical differences between the D-ISS and already existing dissociation measures. Future research should focus on validating the measure in different clinical populations and cultural groups. Overall, the D-ISS provides a new theory-based measure of between-mode dissociation, with the potential to be a key measure for the assessment and treatment of dissociation within both clinical practice and future research studies.

List of References

Adams, J., Hillier-Brown, F. C., Moore, H. J., Lake, A. A., Araujo-Soares, V., White, M., & Summerbell, C. (2016). Searching and synthesising 'grey literature' and 'grey information' in public health: critical reflections on three case studies. *Systematic reviews*, *5*(1), 164. https://doi.org/10.1186/s13643-016-0337-y

Althubaiti A. (2016). Information bias in health research: definition, pitfalls, and adjustment methods. *Journal of multidisciplinary healthcare*, *9*, 211–217. https://doi.org/10.2147/JMDH.S104807

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. G. (2012). Assessment of study quality for systematic reviews: a comparison of the Cochrane Collaboration Risk of Bias Tool and the Effective Public Health Practice Project Quality Assessment Tool: methodological research. *Journal of evaluation in clinical practice*, *18*(1), 12–18. https://doi.org/10.1111/j.1365-2753.2010.01516.x

Atchley, R., & Bedford, C. (2021). Dissociative Symptoms In Posttraumatic Stress Disorder: A Systematic Review. *Journal of trauma & dissociation : the official journal of the International Society for the Study of Dissociation (ISSD)*, *22*(1), 69–88. https://doi.org/10.1080/15299732.2020.1760410

Bækkelund, H., Ulvenes, P., Boon-Langelaan, S., & Arnevik, E. A. (2022). Group treatment for complex dissociative disorders: a randomized clinical trial. *BMC psychiatry*, *22*(1), 338. https://doi.org/10.1186/s12888-022-03970-8

Barazzone, N., Santos, I., McGowan, J., & Donaghay-Spire, E. (2019). The links between adult attachment and post-traumatic stress: A systematic review. *Psychology and psychotherapy*, *92*(1), 131–147. https://doi.org/10.1111/papt.12181

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226–244. https://doi.org/10.1037/0022-3514.61.2.226

Bartholomew, K., & Perlman, D. (Eds.). (1994). *Attachment processes in adulthood.* Jessica Kingsley Publishers.

Bathe-Peters, R., Priebe, K., Schulte, S., Meyer, K., Schulte-Herbrüggen, O., Ülsmann, D., Bermpohl, F., & Schoofs, N. (2023). The Affect Intolerance Scale (AIS), German version: A validation study in a student and clinical sample of patients with trauma-related disorders. *Journal of behavior therapy and experimental psychiatry*, *81*, 101841. Advance online publication. https://doi.org/10.1016/j.jbtep.2023.101841

Beck, A. T. (1996). Beyond belief: A theory of modes, personality, and psychopathology. In P. M. Salkovskis (Ed.), *Frontiers of cognitive therapy* (pp. 1–25). The Guilford Press.

Benishek, D. & Wichowski, H. C. (2003). Dissociation in adults with a diagnosis of substance abuse. *Nursing Times,* 90(20), 34-46.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238–246. https://doi.org/10.1037/0033-2909.107.2.238

Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *The Journal of nervous and mental disease*, *174*(12), 727–735. https://doi.org/10.1097/00005053-198612000-00004

Berry, K., Varese, F., & Bucci, S. (2017). Cognitive Attachment Model of Voices: Evidence Base and Future Implications. *Frontiers in psychiatry*, *8*, 111. https://doi.org/10.3389/fpsyt.2017.00111

Berry, K., Varese, F., & Bucci, S. (2018). Emerging Perspectives on the role of Attachment and Dissociation in Psychosis. In C. Cupitt (Ed.), CBT for Psychosis Process-orientated Therapies and the Third Wave (pp. 25-44). Routledge.

Blatt, S. J., & Levy, K. N. (2003). Attachment theory, psychoanalysis, personality development, and psychopathology. *Psychoanalytic Inquiry, 23*(1), 102–150. https://doi.org/10.1080/07351692309349028

Bockers, E., Roepke, S., Michael, L., Renneberg, B., & Knaevelsrud, C. (2014). Risk recognition, attachment anxiety, self-efficacy, and state dissociation predict revictimization. *PloS one*, *9*(9), e108206. https://doi.org/10.1371/journal.pone.0108206

Bowlby, J. (1977). The making and breaking of affectional bonds: I. Aetiology and psychopathology in the light of attachment theory. *The British Journal of Psychiatry, 130,* 201–210. https://doi.org/10.1192/bjp.130.3.201

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry, 52*(4), 664–678. https://doi.org/10.1111/j.1939-0025.1982.tb01456.x

Boyer, S. M., Caplan, J. E., & Edwards, L. K. (2022). Trauma-Related Dissociation and the Dissociative Disorders:: Neglected Symptoms with Severe Public Health Consequences. *Delaware journal of public health*, *8*(2), 78–84. https://doi.org/10.32481/djph.2022.05.010

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). The Guilford Press.

Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology, 28*(5), 759–775. https://doi.org/10.1037/0012-1649.28.5.759

Bucci, S., Roberts, N. H., Danquah, A. N., & Berry, K. (2015). Using attachment theory to inform the design and delivery of mental health services: a systematic review of the literature. *Psychology and psychotherapy*, *88*(1), 1–20. https://doi.org/10.1111/papt.12029

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*(2nd ed.). Routledge/Taylor & Francis Group.

Carlson E. A. (1998). A prospective longitudinal study of attachment disorganization/disorientation. *Child development*, *69*(4), 1107–1128.

Carlson, E. B., & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. *Dissociation: Progress in the Dissociative Disorders, 6*(1), 16–27.

Carlson, E. B., Waelde, L. C., Palmieri, P. A., Macia, K. S., Smith, S. R., & McDade-Montez, E. (2018). Development and Validation of the Dissociative Symptoms Scale. *Assessment*, *25*(1), 84–98. https://doi.org/10.1177/1073191116645904

Carrion, V. G., & Steiner, H. (2000). Trauma and dissociation in delinquent adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(3), 353–359. https://doi.org/10.1097/00004583-200003000-00018

Černis, E., Cooper, M., & Chan, C. (2018). Developing a new measure of dissociation: The Dissociative Experiences Measure, Oxford (DEMO). *Psychiatry research*, *269*, 229–236. https://doi.org/10.1016/j.psychres.2018.08.060

Černis, E., Evans, R., Ehlers, A., & Freeman, D. (2021). Dissociation in relation to other mental health conditions: An exploration using network analysis. *Journal of Psychiatric Research*, *136*, 460-467. https://doi.org/10.1016/j.jpsychires.2020.08.023

Chiu, C. D., Meg Tseng, M. C., Chien, Y. L., Liao, S. C., Liu, C. M., Yeh, Y. Y., Hwu, H. G., & Ross, C. A. (2017). Dissociative disorders in acute psychiatric inpatients in Taiwan. *Psychiatry research*, *250*, 285–290. https://doi.org/10.1016/j.psychres.2017.01.082

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309–319. https://doi.org/10.1037/1040-3590.7.3.309

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Lawrence Erlbaum Associates, Inc.

Dalenberg, C. J., Brand, B. L., Gleaves, D. H., Dorahy, M. J., Loewenstein, R. J., Cardeña, E., Frewen, P. A., Carlson, E. B., & Spiegel, D. (2012). Evaluation of the evidence for the trauma and fantasy models of dissociation. *Psychological Bulletin, 138*(3), 550–588. https://doi.org/10.1037/a0027447

Dalenberg, C. J., Brand, B. L., Loewenstein, R. J., Gleaves, D. H., Dorahy, M. J., Cardeña, E., Frewen, P. A., Carlson, E. B., & Spiegel, D. (2014). Reality versus fantasy: reply to Lynn et al. (2014). *Psychological bulletin*, *140*(3), 911–920. https://doi.org/10.1037/a0036685

De Wolff, M., & van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development, 68*(4), 571–591. https://doi.org/10.2307/1132107

Degnan, A., Berry, K., Humphrey, C., & Bucci, S. (2022). The role of attachment and dissociation in the relationship between childhood interpersonal trauma and negative symptoms in psychosis. *Clinical psychology & psychotherapy*, *29*(5), 1692–1706. https://doi.org/10.1002/cpp.2731

Dell P. F. (2006). The multidimensional inventory of dissociation (MID): A comprehensive measure of pathological dissociation. *Journal of trauma & dissociation : the official journal of the*

International Society for the Study of Dissociation (ISSD), *7*(2), 77–106.
https://doi.org/10.1300/J229v07n02_06

Dutra, L., Bureau, J. F., Holmes, B., Lyubchik, A., & Lyons-Ruth, K. (2009). Quality of early care and childhood trauma: A prospective study of developmental pathways to dissociation. *The Journal of nervous and mental disease*, *197*(6), 383-390.
https://doi.org/10.1097/NMD.0b013e3181a653b7

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272–299. https://doi.org/10.1037/1082-989X.4.3.272

Farina, B., Liotti, M., & Imperatori, C. (2019). The Role of Attachment Trauma and Disintegrative Pathogenic Processes in the Traumatic-Dissociative Dimension. *Frontiers in psychology*, *10*, 933. https://doi.org/10.3389/fpsyg.2019.00933

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). Sage.

Fonagy, P. (1998). Attachment theory approach to treatment of the difficult patient. *Bulletin of the Menninger Clinic, 62*(2), 147-169.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self.* Other Press.

Fonagy, P., Steele, M., Steele, H., Moran, G. S., & Higgitt, A. C. (1991). The capacity for understanding mental states: The reflective self in parent and child and its significance for security of attachment. *Infant Mental Health Journal, 12*(3), 201–218. https://doi.org/10.1002/1097-0355(199123)12:3<201::AID-IMHJ2280120307>3.0.CO;2-7

Foote, B., & Van Orden, K. (2016). Adapting Dialectical Behavior Therapy for the Treatment of Dissociative Identity Disorder. *American journal of psychotherapy*, *70*(4), 343–364.
https://doi.org/10.1176/appi.psychotherapy.2016.70.4.343

Fraley, R. C., Hudson, N. W., Heffernan, M. E., & Segal, N. (2015). Are adult attachment styles categorical or dimensional? A taxometric analysis of general and relationship-specific attachment orientations. *Journal of personality and social psychology*, *109*(2), 354–368.
https://doi.org/10.1037/pspp0000027

Fung, H. W., Ross, C. A., Lam, S. K. K., & Hung, S. L. (2022). Recent research on the interventions for people with dissociation. *European Journal of Trauma & Dissociation*, 100299. https://doi.org/10.1016/j.ejtd.2022.100299

George C., Kaplan N., Main M. (1996). *Adult Attachment Interview* (3rd ed.). Unpublished manuscript, University of California at Berkeley, USA.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference 11.0 update* (4th ed.). Boston: Allyn & Bacon

Gleaves, D. H., & Reisinger, B. A. A. (2023). Stigma Regarding Dissociative Disorders. *Journal of trauma & dissociation : the official journal of the International Society for the Study of Dissociation (ISSD)*, *24*(3), 317–320. https://doi.org/10.1080/15299732.2023.2191240

Goldberg, L. R. (1999). The Curious Experiences Survey, a revised version of the Dissociative Experiences Scale: Factor structure, reliability, and relations to demographic and personality variables. *Psychological Assessment, 11*(2), 134–145. https://doi.org/10.1037/1040-3590.11.2.134

Goldstein, L. H., Robinson, E. J., Mellers, J. D. C., Stone, J., Carson, A., Reuber, M., Medford, N., McCrone, P., Murray, J., Richardson, M. P., Pilecka, I., Eastwood, C., Moore, M., Mosweu, I., Perdue, I., Landau, S., Chalder, T., & CODES study group (2020). Cognitive behavioural therapy for adults with dissociative seizures (CODES): a pragmatic, multicentre, randomised controlled trial. *The lancet. Psychiatry*, *7*(6), 491–505. https://doi.org/10.1016/S2215-0366(20)30128-0

Golshani, S., Najafpour, A., Hashemian, S. S., Goudarzi, N., Firoozabadi, A., Ghezelbash, M. S., Hookari, S., Firoozabadi, K., Dürsteler, K. M., Brühl, A. B., Alikhani, M., Sadeghi-Bahmani, D., & Brand, S. (2021). Individuals with Major Depressive Disorder Report High Scores of Insecure-Avoidant and Insecure-Anxious Attachment Styles, Dissociative Identity Symptoms, and Adult Traumatic Events. *Healthcare (Basel, Switzerland)*, *9*(9), 1169. https://doi.org/10.3390/healthcare9091169

Gottfried, D. C. (2004). *Adult sequelae of childhood sexual abuse: Dissociation, attachment style and substance use* [PhD Thesis, Adelphi University]. https://www.proquest.com/docview/305081624/C8F1E857516943F3PQ/3?accountid=13963

Granqvist, P., Sroufe, L. A., Dozier, M., Hesse, E., Steele, M., van Ijzendoorn, M., Solomon, J., Schuengel, C., Fearon, P., Bakermans-Kranenburg, M., Steele, H., Cassidy, J., Carlson, E.,

Madigan, S., Jacobvitz, D., Foster, S., Behrens, K., Rifkin-Graboi, A., Gribneau, N., Spangler, G., … Duschinsky, R. (2017). Disorganized attachment in infancy: a review of the phenomenon and its implications for clinicians and policy-makers. *Attachment & human development*, *19*(6), 534–558. https://doi.org/10.1080/14616734.2017.1354040

Gušić, S., Cardeña, E., Bengtsson, H., & Søndergaard, H. P. (2016). Adolescents' dissociative experiences: The moderating role of type of trauma and attachment style. *Journal of Child & Adolescent Trauma, 9*(4), 341–351. https://doi.org/10.1007/s40653-016-0107-y

Hair Jr., J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010) *Multivariate Data Analysis: A Global Perspective.* (7th ed.). Pearson Education, Upper Saddle River.

Hoyle, R. H. (Ed.). (2012). *Handbook of structural equation modeling.* The Guilford Press.

Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Huang, Y. L., Fonagy, P., Feigenbaum, J., Montague, P. R., Nolte, T., & Mood Disorder Research Consortium. (2020). Multidirectional pathways between attachment, mentalizing, and posttraumatic stress symptomatology in the context of childhood trauma. *Psychopathology*, *53*(1), 48-58. https://doi.org/10.1159/000506406

International Society for the Study of Trauma and Dissociation. (2011). Guidelines for treating dissociative identity disorder in adults, third revision. *Journal of Trauma & Dissociation*, *12*(2), 115-187. http://dx.doi.org/10.1080/15299732.2011.537247

Janet, P. (1889). *L'automatisme psychologique: essai de psychologie expérimentale sur les formes inférieures de l'activité humaine*. Félix Alcan.

Johnstone, L. & Boyle, M. with Cromby, J., Dillon, J., Harper, D., Kinderman, P., Longden, E., Pilgrim, D. & Read, J. (2018). *The Power Threat Meaning Framework: Towards the identification of patterns in emotional distress, unusual experiences and troubled or troubling behaviour, as an alternative to functional psychiatric diagnosis.* Leicester: British Psychological Society.

Kemper, C. J., Trapp, S., Kathmann, N., Samuel, D. B., & Ziegler, M. (2019). Short Versus Long Scales in Clinical Assessment: Exploring the Trade-Off Between Resources Saved and Psychometric Quality Lost Using Two Measures of Obsessive-Compulsive Symptoms. *Assessment*, *26*(5), 767–782. https://doi.org/10.1177/1073191118810057

Kennedy, F., Clarke, S., Stopa, L., Bell, L., Rouse, H., Ainsworth, C., Fearon, P., & Waller, G. (2004). Towards a cognitive model and measure of dissociation. *Journal of behavior therapy and experimental psychiatry*, *35*(1), 25–48. https://doi.org/10.1016/j.jbtep.2004.01.002

Kishore, K., Jaswal, V., Kulkarni, V., & De, D. (2021). Practical Guidelines to Develop and Evaluate a Questionnaire. *Indian dermatology online journal*, *12*(2), 266–275. https://doi.org/10.4103/idoj.IDOJ_674_20

Kong, S. S., Kang, D. R., Oh, M. J., & Kim, N. H. (2018). Attachment insecurity as a mediator of the relationship between childhood trauma and adult dissociation. *Journal of trauma & dissociation: the official journal of the International Society for the Study of Dissociation (ISSD)*, *19*(2), 214–231. https://doi.org/10.1080/15299732.2017.1329772

Koo, T. K., & Li, M. Y. (2016). A Guideline of Selecting and Reporting Intraclass Correlation Coefficients for Reliability Research. *Journal of chiropractic medicine*, *15*(2), 155–163. https://doi.org/10.1016/j.jcm.2016.02.012

Lahousen, T., Unterrainer, H. F., & Kapfhammer, H. P. (2019). Psychobiology of Attachment and Trauma-Some General Remarks From a Clinical Perspective. *Frontiers in psychiatry*, *10*, 914. https://doi.org/10.3389/fpsyt.2019.00914

Lavin, R., Bucci, S., Varese, F., & Berry, K. (2020). The relationship between insecure attachment and paranoia in psychosis: A systematic literature review. *The British journal of clinical psychology*, *59*(1), 39–65. https://doi.org/10.1111/bjc.12231

Lilienfeld, S. O., Kirsch, I., Sarbin, T. R., Lynn, S. J., Chaves, J. F., Ganaway, G. K., & Powell, R. A. (1999). Dissociative identity disorder and the sociocognitive model: Recalling the lessons of the past. *Psychological Bulletin, 125*(5), 507–523. https://doi.org/10.1037/0033-2909.125.5.507

Liotti, G. (1992). Disorganized/disoriented attachment in the etiology of the dissociative disorders. *Dissociation: Progress in the Dissociative Disorders, 5*(4), 196–204.

Liotti, G. (2000). Disorganized attachment, models of borderline states and evolutionary psychotherapy. In P. Gilbert & K. G. Bailey (Eds.), *Genes on the couch: Explorations in evolutionary psychotherapy* (pp. 232–256). Brunner-Routledge.

Liotti G. (2006). A model of dissociation based on attachment theory and research. *Journal of trauma & dissociation: the official journal of the International Society for the Study of Dissociation (ISSD)*, *7*(4), 55–73. https://doi.org/10.1300/J229v07n04_04

Liotti, G. (2009). Attachment and dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 53–65). Routledge/Taylor & Francis Group.

Liotti, G., & Gumley, A. (2008). An attachment perspective on schizophrenia: The role of disorganized attachment, dissociation and mentalization. In A. Moskowitz, I. Schäfer, & M. J. Dorahy (Eds.), *Psychosis, trauma and dissociation: Emerging perspectives on severe psychopathology* (pp. 117–133). Wiley Blackwell.

Liotti, G., & Prunetti, E. (2010). Metacognitive deficits in trauma-related disorders: Contingent on interpersonal motivational contexts? In G. Dimaggio & P. H. Lysaker (Eds.), *Metacognition and severe adult mental disorders: From research to treatment* (pp. 196–214). Routledge/Taylor & Francis Group

Loewenstein R. J. (2018). Dissociation debates: everything you know is wrong. *Dialogues in clinical neuroscience*, *20*(3), 229–242. https://doi.org/10.31887/DCNS.2018.20.3/rloewenstein

Longden, E., Branitsky, A., Moskowitz, A., Berry, K., Bucci, S., & Varese, F. (2020). The Relationship Between Dissociation and Symptoms of Psychosis: A Meta-analysis. *Schizophrenia bulletin*, *46*(5), 1104–1113. https://doi.org/10.1093/schbul/sbaa037

Lorenzini, N., & Fonagy, P. (2013). Attachment and personality disorders: A short review. *Focus*, *11*(2), 155-166.

Lynn, S. J., Maxwell, R., Merckelbach, H., Lilienfeld, S. O., Kloet, D. V. H., & Miskovic, V. (2019). Dissociation and its disorders: Competing models, future directions, and a way forward. *Clinical psychology review*, *73*, 101755. https://doi.org/10.1016/j.cpr.2019.101755

Lynn, S. J., Polizzi, C., Merckelbach, H., Chiu, C.-D., Maxwell, R., van Heugten, D., & Lilienfeld, S. O. (2022). Dissociation and dissociative disorders reconsidered: Beyond sociocognitive and trauma models toward a transtheoretical framework. *Annual Review of Clinical Psychology, 18,* 259–289. https://doi.org/10.1146/annurev-clinpsy-081219-102424

Lyons-Ruth, K., Dutra, L., Schuder, M. R., & Bianchi, I. (2006). From infant attachment disorganization to adult dissociation: Relational adaptations or traumatic experiences?. *Psychiatric Clinics*, *29*(1), 63-86. https://doi.org/10.1016/j.psc.2005.10.011

Lyssenko, L., Schmahl, C., Bockhacker, L., Vonderlin, R., Bohus, M., & Kleindienst, N. (2018). Dissociation in Psychiatric Disorders: A Meta-Analysis of Studies Using the Dissociative Experiences Scale. *The American journal of psychiatry*, *175*(1), 37–46. https://doi.org/10.1176/appi.ajp.2017.17010025

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*(1), 84–99. https://doi.org/10.1037/1082-989X.4.1.84

Main, M., & Solomon, J. (1986). Discovery of an insecure-disorganized/disoriented attachment pattern. In T. B. Brazelton & M. W. Yogman (Eds.), *Affective development in infancy* (pp. 95–124). Ablex Publishing.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 121–160). The University of Chicago Press.

McAnena, C. (2001). *Attachment and early maladaptive schemas in alcohol dependence* [Doctorate of Clinical Psychology, University College London]. https://www.proquest.com/docview/1752724226/76FD49A3FD894DC4PQ/1?accountid=13963

McGonagle, G. (2017). *Does fearful attachment and dissociation mediate the relationship between trauma and voice-hearing in psychosis?* [Doctorate of Clinical Psychology, University of Manchester]. https://www.proquest.com/docview/2407983299/8A1538A373DA4600PQ/2?accountid=13963

Merckelbach, H., Devilly, G. J., & Rassin, E. (2002). Alters in dissociative identity disorder metaphors or genuine entities? *Clinical Psychology Review, 22*(4), 481–498. https://doi.org/10.1016/S0272-7358(01)00115-5

Mes, M. A., Chan, A. H. Y., Wileman, V., Katzer, C. B., Goodbourn, M., Towndrow, S., Taylor, S. J. C., & Horne, R. (2019). Patient involvement in questionnaire design: tackling response error and burden. *Journal of pharmaceutical policy and practice*, *12*, 17. https://doi.org/10.1186/s40545-019-0175-0

Mikulincer, M., & Shaver, P. R. (2008). Adult attachment and affect regulation. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 503–531). The Guilford Press.

Mikulincer, M., & Shaver, P. R. (2012). An attachment perspective on psychopathology. *World psychiatry : official journal of the World Psychiatric Association (WPA)*, *11*(1), 11–15. https://doi.org/10.1016/j.wpsyc.2012.01.003

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, T. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, *151*(4), 264-269. https://doi.org/10.7326/0003-4819-151-4-200908180-00135

Mokkink, L. B., Prinsen, C. A. C., Patrick, D. L., Alonso, J., Bouter, L. M., de Vet, H. C. W., & Terwee, C. B. (2019). *COSMIN Study Design checklist for Patient-reported outcome measurement instruments* https://www.cosmin.nl/wp-content/uploads/COSMIN-study-designing-checklist_final.pdf

Moskowitz, G. B. (2005). *Social cognition: Understanding self and others.* (A. Tesser, Ed.). Guilford Press.

Muthén, L. K., & Muthén, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling, 9*(4), 599–620. https://doi.org/10.1207/S15328007SEM0904_8

National Institute for Health and Care Excellence,. (2009). *Borderline Personality Disorder: Treatment and Management* [cg78]. https://www.nice.org.uk/guidance/cg78/evidence/bpd-full-guideline-242147197

National Institute for Health and Care Excellence. (2018). *Post-traumatic stress disorder* [NG116]. https://www.nice.org.uk/guidance/ng116

Nijenhuis, E. R., Spinhoven, P., Van Dyck, R., Van der Hart, O., & Vanderlinden, J. (1996). The development and psychometric characteristics of the Somatoform Dissociation Questionnaire (SDQ-20). *The Journal of nervous and mental disease*, *184*(11), 688–694. https://doi.org/10.1097/00005053-199611000-00006

Nijenhuis, E., van der Hart, O., & Steele, K. (2010). Trauma-related structural dissociation of the personality. *Activitas Nervosa Superior*, *52*(1), 1-23.

North, C. S., Ryall, J.-E. M., Ricci, D. A., & Wetzel, R. D. (1993). *Multiple personalities, multiple disorders: Psychiatric classification and media influence.* Oxford University Press.

Ogawa, J. R., Sroufe, L. A., Weinfield, N. S., Carlson, E. A., & Egeland, B. (1997). Development and the fragmented self: longitudinal study of dissociative symptomatology in a nonclinical sample. *Development and psychopathology*, *9*(4), 855–879. https://doi.org/10.1017/s0954579497001478

Partridge, O., Maguire, T., & Newman-Taylor, K. (2022). How does attachment style affect psychosis? A systematic review of causal mechanisms and guide to future inquiry. *Psychology and psychotherapy*, *95*(1), 345–380. https://doi.org/10.1111/papt.12371

Pearce, J., Simpson, J., Berry, K., Bucci, S., Moskowitz, A., & Varese, F. (2017). Attachment and dissociation as mediators of the link between childhood trauma and psychotic experiences. *Clinical psychology & psychotherapy*, *24*(6), 1304–1312. https://doi.org/10.1002/cpp.2100

Pietromonaco, P. R., & Barrett, L. F. (2000). The internal working models concept: What do we really know about the self in relation to others? *Review of General Psychology, 4*(2), 155–175. https://doi.org/10.1037/1089-2680.4.2.155

Pollard, C., Bucci, S., MacBeth, A., & Berry, K. (2020). The revised psychosis attachment measure: Measuring disorganized attachment. *British Journal of Clinical Psychology*, *59*(3), 335-353. https://doi.org/10.1111/bjc.12249

Putnam, F. W. (1997). *Dissociation in children and adolescents: A developmental perspective.* Guilford Press.

Rădulescu, I. D., Ciubara, A. B., Moraru, C., Burlea, S. L., & Ciubară, A. . (2020). Evaluating the Impact of Dissociation in Psychiatric Disorders. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, *11*(3Sup1), 163-174. https://doi.org/10.18662/brain/11.3Sup1/132

Rafiq, S., Campodonico, C., & Varese, F. (2018). The relationship between childhood adversities and dissociation in severe mental illness: A meta-analytic review. *Acta Psychiatrica Scandinavica*, *138*(6), 509-525. https://doi.org/10.1111/acps.12969

Razavi, T. (2001). *Self-report measures: an overview of concerns and limitations of questionnaire use in occupational stress research* [Discussion Papers in Accounting and Management Science, University of Southampton]. https://eprints.soton.ac.uk/35712/1/01-175.pdf

Reiner, I., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Fremmer-Bombik, E., & Beutel, M. (2016). Adult attachment representation moderates psychotherapy treatment efficacy in clinically depressed inpatients. *Journal of affective disorders*, *195*, 163–171. https://doi.org/10.1016/j.jad.2016.02.024

Riggs, S. A., Paulson, A., Tunnell, E., Sahl, G., Atkison, H., & Ross, C. A. (2007a). Attachment, personality, and psychopathology among adult inpatients: self-reported romantic attachment style versus Adult Attachment Interview states of mind. *Development and psychopathology*, *19*(1), 263–291. https://doi.org/10.1017/S0954579407070149

Riggs, S. A., Sahl, G., Greenwald, E., Atkison, H., Paulson, A., & Ross, C. A. (2007b). Family environment and adult attachment as predictors of psychopathology and personality dysfunction among inpatient abuse survivors. *Violence and victims*, *22*(5), 577–600. https://doi.org/10.1891/088667007782312159

Riley K. C. (1988). Measurement of dissociation. *The Journal of nervous and mental disease*, *176*(7), 449–450.

Rodante, D. E., Grendas, L. N., Puppo, S., Vidjen, P., Portela, A., Rojas, S. M., Chiapella, L. C., & Daray, F. M. (2019). Predictors of short- and long-term recurrence of suicidal behavior in borderline personality disorder. *Acta psychiatrica Scandinavica*, *140*(2), 158–168. https://doi.org/10.1111/acps.13058

Roesler, T. A., & Dafler, C. E. (1993). Chemical dissociation in adults sexually victimized as children: Alcohol and drug use in adult survivors. *Journal of Substance Abuse Treatment, 10*(6), 537–543. https://doi.org/10.1016/0740-5472(93)90057-9

Sanders, S. (1986). The perceptual alteration scale: A scale measuring dissociation. *American Journal of Clinical Hypnosis*, *29*(2), 95-102. https://doi.org/10.1080/00029157.1986.10402691

Saphire-Bernstein, S., Way, B. M., Kim, H. S., Sherman, D. K., & Taylor, S. E. (2011). Oxytocin receptor gene (OXTR) is related to psychological resources. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(37), 15118–15122. https://doi.org/10.1073/pnas.1113137108

Sar, V. (2011). Epidemiology of Dissociative Disorders: An Overview. *Epidemiology Research International,2011*(404538), 1-8. https://doi.org/10.1155/2011/404538

Şar V. (2014). The many faces of dissociation: opportunities for innovative research in psychiatry. *Clinical psychopharmacology and neuroscience*, *12*(3), 171–179. https://doi.org/10.9758/cpn.2014.12.3.171

Scalabrini, A., Cavicchioli, M., Fossati, A., & Maffei, C. (2017). The extent of dissociation in borderline personality disorder: A meta-analytic review. *Journal of trauma & dissociation: the official journal of the International Society for the Study of Dissociation (ISSD)*, *18*(4), 522–543. https://doi.org/10.1080/15299732.2016.1240738

Scalabrini, A., Mucci, C., Esposito, R., Damiani, S., & Northoff, G. (2020). Dissociation as a disorder of integration–On the footsteps of Pierre Janet. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *101* (109928) 1-12. https://doi.org/10.1016/j.pnpbp.2020.109928

Schindler A. (2019). Attachment and Substance Use Disorders-Theoretical Models, Empirical Evidence, and Implications for Treatment. *Frontiers in psychiatry*, *10*, 727. https://doi.org/10.3389/fpsyt.2019.00727

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment & Human Development, 4*(2), 133–161. https://doi.org/10.1080/14616730210154171

Shaver, P. R., & Mikulincer, M. (2007). Adult Attachment Strategies and the Regulation of Emotion. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 446–465). The Guilford Press.

Sheinbaum, T., Kwapil, T. R., Ballespí, S., Mitjavila, M., Chun, C. A., Silvia, P. J., & Barrantes-Vidal, N. (2015). Attachment style predicts affect, cognitive appraisals, and social functioning in daily life. *Frontiers in psychology*, *6*, 296. https://doi.org/10.3389/fpsyg.2015.00296

Simeon, D., & Knutelska, M. (2022). The role of fearful attachment in depersonalization disorder. *European Journal of Trauma & Dissociation*, *6*(3), 100266. https://doi.org/10.1016/j.ejtd.2022.100266

Simpson, J. A., & Rholes, W. S. (2002). Fearful-avoidance, disorganization, and multiple working models: Some directions for future theory and research. *Attachment & Human Development, 4*(2), 223–229. https://doi.org/10.1080/14616730210154207

Smart, K. H. (2021). *Investigation into the Relationships Between Childhood Trauma and Borderline Personality Disorder.* [Doctoral Thesis, University of Southampton]. https://eprints.soton.ac.uk/454282/1/Thesis_Final_Kathrine_Smart.pdf

Sofroniou, N., & Hutcheson, G. D. (1999). The multivariate social scientist. *The Multivariate Social Scientist*. Sage Publications Ltd.

Steinberg, M. (1994). *Interviewer's guide to the structured clinical interview for DSM-IV dissociative disorders (SCID-D)* (Rev. ed.). American Psychiatric Association.

Stevens, J. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Lawrence Erlbaum Associates, Inc.

Stokoe, N. Y. (2014). Determining How Therapists Make Sense of Dissociative Identity Disorder [Doctoral Thesis of Clinical Psychology, University of Southampton]. https://eprints.soton.ac.uk/370414/1/Nicole%2520Stokoe%2520Final%2520Thesis%2520Document.pdf

Streiner, D. L., & Norman, G. R. (2008). *Health Measurement Scales: A practical guide to their development and use* (4th ed.). Oxford University Press.

Svanberg, P. O., Mennet, L., & Spieker, S. (2010). Promoting a secure attachment: A primary prevention practice model. *Clinical child psychology and psychiatry*, *15*(3), 363–378. https://doi.org/10.1177/1359104510367584

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/Pearson Education.

Thomas, B. H., Ciliska, D., Dobbins, M., & Micucci, S. (2004). A process for systematically reviewing the literature: providing the research evidence for public health nursing interventions. *Worldviews on evidence-based nursing*, *1*(3), 176–184. https://doi.org/10.1111/j.1524-475X.2004.04006.x

Thompson, R. A., & Raikes, H. A. (2003). Toward the next quarter-century: Conceptual and methodological challenges for attachment theory. *Development and Psychopathology, 15*(3), 691–718. https://doi.org/10.1017/S0954579403000348

Van der Hart, O., & Horst, R. (1989). The dissociation theory of Pierre Janet. *Journal of Traumatic Stress, 2*(4), 397–412. https://doi.org/10.1002/jts.2490020405

Van der Hart, O., Nijenhuis, E., Steele, K., & Brown, D. (2004). Trauma-related dissociation: conceptual clarity lost and found. *The Australian and New Zealand journal of psychiatry*, *38*(11-12), 906–914. https://doi.org/10.1080/j.1440-1614.2004.01480.x

Van der Kolk, B. A., & Ducey, C. P. (1989). The psychological processing of traumatic experience: Rorschach patterns in PTSD. *Journal of Traumatic Stress*, *2*, 259-274.

Vanderlinden, J., Van Dyck, R., Vandereycken, W., Vertommen, H., & Jan Verkes, R. (1993). The dissociation questionnaire (DIS-Q): Development and characteristics of a new self-report questionnaire. *Clinical Psychology & Psychotherapy*, *1*(1), 21-27. https://doi.org/10.1002/cpp.5640010105

Vogel, M., Braungardt, T., Grabe, H. J., Schneider, W., & Klauer, T. (2013). Detachment, compartmentalization, and schizophrenia: linking dissociation and psychosis by subtype. *Journal of Trauma & Dissociation*, *14*(3), 273-287. https://doi.org/10.1080/15299732.2012.724760

Waller, N., Putnam, F. W., & Carlson, E. B. (1996). Types of dissociation and dissociative types: A taxometric analysis of dissociative experiences. *Psychological Methods, 1*(3), 300–321. https://doi.org/10.1037/1082-989X.1.3.300

Wang, X., & Cheng, Z. (2020). Cross-Sectional Studies: Strengths, Weaknesses, and Recommendations. *Chest*, *158*(1S), S65–S71. https://doi.org/10.1016/j.chest.2020.03.012

Wiering, B., de Boer, D., & Delnoij, D. (2017). Patient involvement in the development of patient-reported outcome measures: a scoping review. *Health expectations : an international journal of public participation in health care and health policy*, *20*(1), 11–23. https://doi.org/10.1111/hex.12442

Williams, J. (2017). *Does dissociation mediate the relationship between fearful attachment and voice-hearing in psychosis?* [Doctorate of Clinical Psychology, University of Manchester]. https://www.proquest.com/docview/2407603228/E7DB9A5C7E54EEDPQ/2?accountid=13963

Williams, J., Bucci, S., Berry, K., & Varese, F. (2018). Psychological mediators of the association between childhood adversities and psychosis: A systematic review. *Clinical psychology review*, *65*, 175–196. https://doi.org/10.1016/j.cpr.2018.05.009

Williams, B., Ospina, J. P., Jalilianhasanpour, R., Fricchione, G. L., & Perez, D. L. (2019). Fearful attachment linked to childhood abuse, alexithymia, and depression in motor functional neurological disorders. *The Journal of neuropsychiatry and clinical neurosciences*, *31*(1), 65-69. https://doi.org/10.1176/appi.neuropsych.18040095

Willy-Gravley, S., Beauchemin, J., Pirie, P., Gomes, A., & Klein, E. (2021). A Randomized Controlled Trial of Yoga with Incarcerated Females: Impacts on Emotion Regulation, Body Dissociation, and Warnings of Substance Relapse. *Social Work Research*, *45*(1), 20-29. https://doi.org/10.1093/swr/svaa023

Wilkinson, L., & Task Force on Statistical Inference, American Psychological Association, Science Directorate. (1999). Statistical methods in psychology journals: Guidelines and explanations. *American Psychologist, 54*(8), 594–604. https://doi.org/10.1037/0003-066X.54.8.594

Wright, K. B. (2005). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication, 10*(3). https://doi.org/10.1111/j.1083-6101.2005.tb00259.x

Zdankiewicz-Ścigała, E., & Ścigała, D. K. (2020). Attachment style, early childhood trauma, alexithymia, and dissociation among persons addicted to alcohol: Structural equation model of dependencies. *Frontiers in Psychology, 10,* Article 2957. https://doi.org/10.3389/fpsyg.2019.02957

Zeller, R. A. (2005). Measurement Error, Issues and Solutions. *Encyclopaedia of Social Measurement, ,* 665-676. https://doi.org/10.1016/B0-12-369398-5/00109-2

Appendix A   Quality Assessment Ratings

Author(s)	Selection bias	Study Design	Confounders	Data Collection Methods	Withdrawals and dropouts	Analysis	Global
Degnan et al., 2022	M	W	S	M	N/A	S	M
Golshani et al., 2021	M	W	S	W	N/A	S	W
Gottfried, 2004	M	W	S	W	N/A	S	W
Huang et al., 2020	M	W	S	W	N/A	S	W
Kong et al., 2018	M	W	W	W	N/A	S	W
McAnena, 2001	W	W	W	W	N/A	M	W

McGonagle, 2017	M	W	S	W	N/A	S	W
Pearce et al., 2016	S	W	W	S	N/A	S	W
Reiner et al., 2016	M	W	S	W	N/A	M	W
Riggs et al., 2007a	M	W	S	S	N/A	S	M
Riggs et al., 2007b	M	W	W	S	N/A	S	W
Simeon & Knutelska, 2022	M	W	S	W	N/A	S	W
Williams, 2017	M	W	S	W	N/A	S	W
Williams et al., 2019	W	W	W	W	N/A	M	W

Zdankiewicz-Ścigała & Ścigała, 2018	W	W	W	W	N/A	S	W

Appendix B   Attachment Measures

No. of studies used	Attachment measure	Authors	Type	Dimensions	Categories
4	Relationship Questionnaire (RQ)	Bartholomew and Horowitz (1991)	4-item self-report questionnaire	Attachment anxiety, attachment avoidance	Secure, preoccupied, dismissing, fearful
3	Experiences in Close Relationships (ECR)	Brennan et al. (1998)	36-item self-report questionnaire	Attachment anxiety, attachment avoidance	Dismissing, fearful-avoidant, preoccupied, secure
3	Adult Attachment Interview (AAI)	George et al., (1985)	20 question semi-structured interview	-	Freely autonomous and secure, dismissing-insecure, preoccupied-insecure

2	Relationships Scales Questionnaire (RSQ)	Griffin and Bartholomew (1994)	30-item self-report questionnaire	Attachment anxiety, attachment avoidance	Dismissing, fearful, preoccupied, secure
2	Attachment Style Questionnaire (ASQ)	Van Oudenhoven et al. (2003)	24-item self-report questionnaire		Fearful, preoccupied, dismissing, secure
1	The Revised Adult Attachment Scale (RAAS)	Collins (1996)	18- item self-report questionnaire	-	Close, depend, and anxiety
1	Psychosis Attachment Measure (PAM)	Berry et al. (2006)	16-item self-report questionnaire	Attachment anxiety, attachment avoidance	-
1	Experiences in Close Relationships - Revised (ECR-R)	Fraley et al. (2000)	36-item self-report questionnaire	Attachment anxiety, attachment avoidance	-
1	The Adult Attachment Scale (Farsi Version)	-	18-item self-report questionnaire	-	Close, depend, and anxiety

Appendix C   Dissociation Measures

No. of studies used	Dissociation type measure	Authors	Type	Construct
8	Dissociative Experiences Survey (DES)	Bernstein and Putnam (1986)	28-item self-report questionnaire	Experiences of dissociation
5	Dissociative Experiences Survey Revised (DES-II)	Carlson & Putnam (1993)	28-item self-report questionnaire	Experiences of dissociation
2	Curious Experiences Survey (CES)	Goldberg (1999)	31-item self-report questionnaire	Experiences of dissociation
1	Cambridge Depersonalisation Scale	Sierra & Berrios (1996)	29-item self-report questionnaire	Depersonalization symptomology

Appendix D   Ethical Approval

71854.A1 - Developing a scale to measure the psychological distance between self-states (Dissociation – Integration of Self States Scale, D-ISS Scale) (Amendment 1)

| **Submission Overview** | **Submission Questionnaire** | **Attachments** | **History** |

Details

Status	Approved
Category	Category **D**
Submitter's Faculty	Faculty of Environmental and Life Sciences (FELS)

The end date for this study is currently 04 September 2023

📅 Request extension

If you are making any other changes to your study please create an amendment using the button below.

Latest Review Comments

01/11/2022 15:53:21 - Committee: Approved

72890 - Thesis Study - Dissociation Scale

| **Submission Overview** | **Submission Questionnaire** | **Attachments** | **History** |

Details

Status	Approved
Category	Category **B**
Submitter's Faculty	Faculty of Environmental and Life Sciences (FELS)

The end date for this study is currently 01 January 2024

📅 Request extension

If you are making any other changes to your study please create an amendment using the button below.

Latest Review Comments

31/08/2022 15:27:57 - Committee: Approved

No comments

Appendix E   Online Questionnaire Layout

Start of Block: Participant Information and Consent

Please read the participant information sheet below prior to consenting.

Participant Information Sheet

Date: 22nd July 2022, Version 5

Study Title: Testing the reliability of a new measure which explores aspects of personality and mental health.

Researcher: Clarissa Lord, Dr Tess Maguire, and Dr Fiona Kennedy

ERGO number: 72890

You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. If you consent to taking part in this study, you will be asked to tick a check box to confirm that you consent to taking part when the online questionnaire begins.

What is the research about?

This research is being conducted by Clarissa Lord for her thesis project which contributes towards her Clinical Doctorate Programme at the University of Southampton. With this research, we are interested to formally investigate aspects of people's experiences of personality and how their mental health may impact their experiences. Additionally, we hope to develop a new questionnaire looking at aspects of personality, by assessing the reliability and validity of this new scale which currently there is a lack of measure for in clinical practice. The data collected will enhance our understanding of whether the new scale reliably measures individual's experiences, as well as whether it is a valid measure for this population.

Why have I been asked to participate?

Any adult aged between 18-65 years of age that would class themselves as experiencing mental health difficulties at some point in their life.

What will happen to me if I take part?

You will complete an online survey which consists of several different mental health related

questionnaires which will take approximately 30 minutes.

Additionally, we are trying to collect data over two time points, please follow the link at the end of the survey to enter your email address for the raffle and to state whether you consent to me sending out the questionnaire to you again to complete 14 days after your initial completion. If you do decide to send me your email address, there is no way for it to be linked to your questionnaire and will be stored on a secure, password protected laptop. You can opt in to whether you want to put your email address into the raffle if you take part in the first part of the study and you can then enter your email address again if you agree to taking part in the questionnaire for a second time. Not completing the second questionnaire will have no effect on your participation if you decide to just complete it the first time.

You will also be asked for a code name consisting of a random animal and a memorable date (DDMMYY). Please keep this safe as this will be needed if you decide to complete the questionnaire again so we can match your initial questionnaire responses with any follow up ones you complete.

Are there any benefits in my taking part?

If you complete the questionnaire once, you will have the option to enter your name into a raffle to win a selection of Amazon vouchers. There are 3 x £50 vouchers to be won. If you consent to taking part in the questionnaire again 14 days later and you complete the questionnaire, you will have an option to include your email again for the raffle.

Additionally, you will be contributing to the development and improvement of our understanding of aspects of personality and people's personal experiences, as well as potentially formally assessing a new measure that can be used for these experiences in clinical practice.

Are there any risks involved?

As the survey is centred around questions about your mental health experiences, there is a possibility that it could cause some psychological discomfort or distress due to it being a sensitive topic. You are free to discontinue the survey at any time by closing down the browser if you are finding that the questionnaires are triggering distress for you. If after the survey you are feeling distressed, we encourage you to seek support about this. You can discuss any of these difficulties with your GP and below we have listed some sources of support for you that you might find helpful to contact:

• The Samaritans offer free support to anyone over the telephone any time of the day. Tel – 116 123 Website – www.samaritans.org

• National Suicide Prevention Helpline offers free support to anyone with thoughts of suicide any time of the day. Tel – 0800 689 5652 Website: https://www.spbristol.org/NSPHUK

• HOPELINEUK offers free support to those under the age of 35 who are experiencing thoughts of suicide.The line is open from 9am-12am (midnight). Tel – 0800 068 4141 Website – https://www.papyrus-uk.org/contact-us/

The following websites provide freely accessible self-help resources aimed at supporting individuals who are experiencing mental health difficulties:

• NHS Self Help Guides - www.selfhelpguides.ntw.nhs.uk/southampton

• Mind - www.mind.org.uk

If you continue to feel distressed following taking part in this study, you can also discuss this with the research supervisor, Dr Tess Maguire at t.l.maguire@soton.ac.uk.

What data will be collected?

The online survey will initially ask for some personal information about yourself such as age, gender, ethnicity, and mental health diagnosis. It will not be possible to identify you from this data. You may also decide to send us your email address to complete the study again or be entered into the raffle. However, once the study has been completed and the raffle winners announced, your email address will be deleted from the system. The subsequent questionnaires you will be asked to complete involve rating how statements best apply to you on various numbered scales. All of the data above will be stored securely on the university server and accessed remotely via a password-protected computer or laptop, in line with university data policy and GDPR. The University of Southampton conducts research to the highest standards of ethics and research integrity. In accordance with our Research Data Management Policy, data will be held for 10 years after the study has finished when it will be securely destroyed. Participants can also choose to provide contact information should they wish to complete the study for a second time, and this will be deleted after the second link has been sent.

Will my participation be confidential?

Your participation and the information we collect about you during the research will be kept strictly confidential. Questionnaire data will not include any identifiable information about you and will be kept separate from the email address you submit if you would like to enter the draw and/or complete the questionnaire again.

Do I have to take part?

90

No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part, you will need to check the tick box when asked if you consent to the study.

What happens if I change my mind?

You have the right to change your mind and withdraw at any time without giving a reason and without your participant rights being affected. It will not be possible to withdraw from the study after completion of the questionnaires as the data will be anonymous.

What will happen to the results of the research?

The results of the research are being written up in a thesis and may later be published. Your personal details will remain strictly confidential. Research findings made available in any reports or publications will not include information that can directly identify you without your specific consent.

Where can I get more information?

If you would like any further information or have any follow up questions regarding this study, please contact: Clarissa Lord (researcher) - cl15n20@soton.ac.uk

What happens if there is a problem? If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions. If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoinfo@soton.ac.uk).

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you. Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity% 20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about you for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page) where

you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk). Thank you for taking the time to read this information and consider taking part in the study.

After reading the participant information sheet, do you consent to taking part in the study?

○   Yes (1)

○   No (2)

End of Block: Participant Information and Consent

Start of Block: Inclusion Criteria

Are you aged between 18 - 65 years of age?

○   Yes (1)

○   No (2)

Have you experienced mental health difficulties at some point in your life?

○   Yes (1)

○   No (2)

End of Block: Inclusion Criteria

Start of Block: Not met criteria

Q217 Thank you for your time. Unfortunately, you are not eligible to take part at this time as you do not currently fulfil our inclusion criteria.

End of Block: Not met criteria

Start of Block: Demographic Questions

Q256 Please enter a random animal and a memorable date (DD/MM/YYY) in the box below - this is your code name. Please make a note of this.

_____

Q7 What gender do you identify as?

    ○   Male (1)

    ○   Female (2)

    ○   Non-binary / third gender (3)

    ○   Prefer not to disclose (4)

Q8 What is your age?

▼ 18-25 (1) ... Prefer not to say (6)

Q259 What is your ethnic group?

○   Asian or Asian British - Bangladeshi (1)

○   Asian or Asian British – Indian (2)

○   Asian or Asian British – Pakistani (3)

○   Asian or Asian British – Other Asian background (4)

○   Black or Black British – African (5)

○   Black or Black British – Caribbean (6)

○   Black or Black British – Other Black background (7)

○   Chinese (8)

○   Mixed – White and Asian (9)

○   Mixed – White and Black African (10)

○   Mixed – White and Black Caribbean (11)

○   Mixed – Other mixed background (12)

○   White - British (13)

○   White - Irish (14)

○   White – Other White background (15)

○   Prefer not to disclose my ethnicity (16)

Q11 Do you have any mental health diagnoses? If so please enter them in the box below:

_____

_____

_____

_____

_____

End of Block: Demographic Questions

Start of Block: (1) Dissociation – Integration of Self States Scale (D-ISS Scale)

End of Block: (1) Dissociation – Integration of Self States Scale (D-ISS Scale)

Start of Block: (2) DES-II

End of Block: (2) DES-II

Start of Block: (3) WDS

End of Block: (3) WDS

Start of Block: Debrief

Q263

We thank you for your time spent taking this survey. Your response has been recorded. Please read the debriefing form attached by clicking on this link Debriefing Form

To enter the raffle and see options to opt in to take part in the questionnaire again in 14 days time please follow this link https://southampton.qualtrics.com/jfe/form/SV_bfJC36Kd5A8M0VE

End of Block: Debrief

Appendix F   Debriefing Form

Testing the reliability of a new measure which explores aspects of personality and mental health.

Debriefing Statement *(written)* (Version 1, 30.07.22)

ERGO ID: 72890

We thank you for your time spent taking this survey. Your response has been recorded.

To enter the raffle and see options to opt in to take part in the questionnaire again in 14 days time please follow this link:

https://southampton.qualtrics.com/jfe/form/SV_bfJC36Kd5A8M0VE

The aim of this research was to systematically and formally assess the psychometric properties of a new scale for aspects of personality. We're particularly looking at measuring mechanisms for coping with stress such as dissociation (a way the brain can cope with feeling overwhelmed). We are hoping that it being able to measure these things will support us to understand these ways of coping and how they may affect people's mental wellbeing in the future.

Your data will help our understanding of individual's experiences of different aspects of personality and whether the new measure can form a reliable and valid option for clinicians to use in clinical practice.

As this survey could be a sensitive or an emotive topic due to it centring around mental health experiences, below are some mental health support lines for various different populations if you feel like it would be useful for you to contact them:

- The Samaritans offer free support to anyone over the telephone any time of the day.
  Tel – 116 123
  Website – www.samaritans.org

- National Suicide Prevention Helpline offers free support to anyone with thoughts of suicide any time of the day.
  Tel – 0800 689 5652
  Website: https://www.spbristol.org/NSPHUK

- HOPELINEUK offers free support to those under the age of 35 who are experiencing thoughts of suicide. The line is open from 9am-12am (midnight).
  Tel – 0800 068 4141

  Website – https://www.papyrus-uk.org/contact-us/

The following websites provide freely accessible self-help resources aimed at supporting individuals who are experiencing mental health difficulties:

- **NHS Self Help Guides -** www.selfhelpguides.ntw.nhs.uk/southampton
- **Mind -** www.mind.org.uk

If you continue to feel distressed following taking part in this study, you can also discuss this with the research supervisor, Dr Tess Maguire at:

Email: t.l.maguire@soton.ac.uk

Once again results of this study will not include your name or any other identifying characteristics. The research did not use deception. You may have a copy of this summary if you wish and also a copy of the final research paper once the project is completed.

If you are interested to read a bit more about the topic, please see the two references I have included at the bottom of the page. If you have any further questions about the research completed, please contact me, Clarissa Lord, at cl15n20@soton.ac.uk.

Thank you for your participation in this research.

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the University of Southampton Head of Research Integrity and Governance (023 8059 5058, rgoinfo@soton.ac.uk).

References

1. Young, J. E., Klosko, J. S., & Beck, A. T. (2019). *Reinventing your life: the bestselling breakthrough programme to end negative behaviour and feel great.* Scribe Publications.
2. Lobbestael, J., Arntz, A., Löbbes, A., & Cima, M. (2009). A comparative study of patients and therapists' reports of schema modes. *Journal of behavior therapy and experimental psychiatry*, *40*(4), 571-579.

Appendix G   Demographic Information

Demographic Information for Sample 1

Demographic		Total	%
Gender			
	Female	291	84.6
	Male	46	13.4
	Other	6	1.7
	Prefer not to disclose	1	0.3
	Total	344	100.0
Age			
	16	5	1.5
	17	10	2.9
	18	67	19.5
	19	85	24.7
	20	68	19.8
	21	44	12.8
	22	27	7.8
	23	16	4.7
	24	7	2.0
	25	15	4.4
	Total	344	100.0
Ethnicity			

	White	271	78.8
	Mixed/Multiple Ethnic Groups	21	6.1
	Asian/Asian British	29	8.4
	Black/African/Caribbean/Black British	11	3.2
	Prefer not to disclose	2	0.6
	Total	344	100.0

Mental Health Diagnosis

	Depression related diagnoses	91	28.1
	Anxiety related diagnoses	108	33.3
	Obsessive Compulsive Disorder	16	4.9
	Eating disorders	25	7.7
	Trauma related disorders	18	5.6
	Neurodevelopmental (ADHD, Aspergers, Autism Spectrum Diagnosis)	15	4.6
	Personality Disorder	23	7.1
	Psychosis	5	1.5
	Bipolar	10	3.1
	Phobias	2	0.6
	Body Dysmorphia	2	0.6
	Chronic fatigue	2	0.6
	Insomnia	1	0.3
	Dissociative disorders	3	0.9
	Substance use disorder	1	0.3

		2	0.6
	Gender dysphoria		
	Total	324	100.0

Demographic Information for Sample 2

Demographic		Total	%
Gender			
	Female	312	81.5
	Male	59	15.4
	Non-binary / third gender	10	2.6
	Prefer not to disclose	2	0.5
	Total	383	100.0
Age			
	18-25	324	85.0
	26 - 35	36	9.4
	36 - 45	12	3.1
	46 - 55	7	1.8
	56 - 65	2	0.5
	Total	381	100.0
Ethnicity			
	White - British	256	66.8
	Mixed – White and Asian	10	2.6
	Mixed – Other mixed background	7	1.8
	Asian or Asian British – Indian	16	4.2
	White – Other White background	42	11.0

	Asian or Asian British – Other Asian background	11	2.9
	Chinese	15	3.9
	White - Irish	6	1.6
	Asian or Asian British – Pakistani	3	0.8
	Black or Black British – African	7	1.8
	Mixed – White and Black Caribbean	2	0.5
	Black or Black British – Caribbean	5	1.3
	Prefer not to disclose my ethnicity	1	0.3
	Black or Black British – Other Black background	1	0.3
	Mixed – White and Black African	1	0.3
	Total	383	100.0
Mental Health Diagnosis			
	Depression related diagnoses	86	28.0
	Anxiety related diagnoses	114	37.1
	Obsessive Compulsive Disorder	22	7.2
	Eating disorders	24	7.8
	Trauma related disorders	12	3.9
	Neurodevelopmental (ADHD, Aspergers, Autism Spectrum Diagnosis, Tourettes, Dyslexia)	18	5.9
	Emotionally unstable personality disorder (EUPD)	11	3.6
	Oppositional defiant disorder	1	0.3
	Bipolar	4	1.3

Phobias	3	1.0
Seasonal affective disorder	2	0.7
Selective mutism	3	1.0
Trichotillomania	3	0.6
Psychogenic nonepileptic seizures	1	0.3
Schizoaffective disorder	2	0.7
Gender dysphoria	1	0.3
Total	307	100.0

Appendix H   Master Copy of the D-ISS and scoring instructions

D-ISS
(Dissociation-Integration of Self-States Scale)

We all have different aspects or parts of ourselves, different ways of being in different situations. These are sometimes called 'self-states'.

These self-states involve a sense of identity, choice, values, and will. For example, when we go to work, we are in a different self-state than when we are with our friends or studying or interacting with our family. We all behave and think differently in different situations.

Some of us have bigger differences between self-states and some of us find it hard to remain in control of which self-state we are in. Some people even feel that they have very separate self-states, they might feel they have different selves residing within one body.

We are interested in your awareness of self-states and your perceptions of them. Please tell us whether you agree or disagree with the following statements.

Client name…………..Completion date…………….

Item No	Statement	Response (choose one)				
						aw
1	I am very aware of having different self-states	Strongly disagree 4	Disagree 3	Neither agree nor disagree 2	Agree 1	Strongly agree 0
2	I know when I have shifted from one self-state to another	Strongly disagree 4	Disagree 3	Neither agree nor disagree 2	Agree 1	Strongly agree 0
3	I am aware of all my different self-states	Strongly disagree 4	Disagree 3	Neither agree nor disagree 2	Agree 1	Strongly agree 0
4	I can tell when I have been in one self-state and then in another	Strongly disagree 4	Disagree 3	Neither agree nor disagree 2	Agree 1	Strongly agree 0
5	I am not aware of all the self-states	Strongly disagree 0	Disagree 1	Neither agree nor disagree 2	Agree 3	Strongly agree 4
						in

6	I feel that the self-states are combined to form me as a whole	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		4	3	2	1	0
7	The self-states are integrated together	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		4	3	2	1	0
8	The self-states are all aspects of me as a person	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		4	3	2	1	0
9	The self-states feel connected together in some way	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		4	3	2	1	0
10	I am formed of all the self-states	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		4	3	2	1	0
						di
11	The different self-states have different names	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		0	1	2	3	4
12	When I'm in one self-state I often don't remember what happened when I was in a different self-state	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		0	1	2	3	4
13	Some self-states are male and some are female	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		0	1	2	3	4
14	Some self-states are children, some are more grown up	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		0	1	2	3	4
15	Some self-states are dangerous to me or other people	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		0	1	2	3	4
						ac
16	I would like to get rid of some self-states	Strongly disagree		Neither agree nor disagree	Agree	Strongly agree

| | | 0 | Disagree

1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 17 | The self-states cause problems in my life | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |
| 18 | I hate some self-states | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |
| 19 | I feel like punishing some self-states | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |
| 20 | I would like some self-states to disappear | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |
| | | | | | | co |
| 21 | I have control over moving between self-states | Strongly disagree

4 | Disagree

3 | Neither agree nor disagree

2 | Agree

1 | Strongly agree

0 |
| 22 | I have no choice over whether I move between self-states | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |
| 23 | I cannot control whether I end up in one self-state or another | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |
| 24 | I can choose what self-state I am in in any situation | Strongly disagree

4 | Disagree

3 | Neither agree nor disagree

2 | Agree

1 | Strongly agree

0 |
| 25 | I have no choice about what self-state I am in | Strongly disagree

0 | Disagree

1 | Neither agree nor disagree

2 | Agree

3 | Strongly agree

4 |

D-ISS (Dissociation-Integration of Self-States Scale) Scoring Instructions (for assessor)

Scoring:

Add up the scores for each 5 item subscale

Aw = Awareness of self-states

      The extent to which the person knows about all the different self states they experience

In = Integration of self-states into a coherent overall sense of self

      The extent to which the person's self-states cohere together into an overall whole

Di = Difference/Distance between self-states

      The degree of difference between self-states and the psychological 'distance' between them

Ac = Acceptance of self-states

      The extent to which the person is content with all their self-states

Co = Control/Choice,

      The person's ability to control shifting between self-states and to choose which self-state to
      be in at a given time

For each subscale there is a maximum score of 20 and minimum score of 0. The maximum overall score for the D-ISS is 100. The higher the score, the more dissociation between self-states.

It is also useful to look at scores for each subscale, as well as individual items, to inform clinical formulation and treatment planning as well as reviewing progress and outcome assessment.

	Subscale	Score
aw	Awareness	
in	Integration	
di	Difference/Distance	
ac	Acceptance	
co	Control/Choice	
	Overall Score	
	Comments	