Affect Integration in patients with personality disorder

Frederiksen, Christina Kjær

AFFECT INTEGRATION IN PATIENTS WITH PERSONALITY DISORDER

BY
CHRISTINA KJÆR FREDERIKSEN

DISSERTATION SUBMITTED 2021

AALBORG UNIVERSITY
DENMARK

AFFECT INTEGRATION IN PATIENTS WITH PERSONALITY DISORDER

by

Christina Kjær Frederiksen

AALBORG UNIVERSITY
DENMARK

Dissertation submitted 2021

CV

I graduated from Aalborg University, Denmark, in 2009 after finishing a Master´s degree in psychology. I became acquainted with research during my studies and while working as a part-time research assistant at the psychotherapeutic unit at Aalborg Psychiatric Hospital. Embarking on a Ph.D. stems from a desire to contribute to the continued development and improvement of the treatment offered to the many patients who are diagnosed with personality disorder. Thus, it has been of central importance to undertake a study that was closely related to everyday clinical practice.

In late 2013, I started working as a part-time clinical psychologist and part-time research assistant at the outpatient Clinic for Anxiety and Personality Disorders, Aalborg University Hospital, Psychiatric Clinic North. Shortly after, I enrolled as a Ph.D. student at Aalborg University. As part of my Ph.D., I planned, launched, collected and analyzed data and disseminated the results from the present study. Furthermore, the study has been the reason for a stay abroad at Oslo University (2020). Additionally, I have disclosed some of the results of the study through an oral presentation; however, due to the coronavirus, it has not been possible to make any additional presentations.

Christina Frederiksen, April 2021

ENGLISH SUMMARY

Background: Emotional dysfunction constitutes a cornerstone in understanding the nature of personality disorder. While the manifestations and implications of such seem well described in relation to certain types of personality disorder (e.g., borderline personality disorder), the superordinate category itself appears somewhat overlooked. However, studies at this level should be considered particularly relevant, as the upcoming 11th edition of the International Classification of Diseases introduces a dimensional approach to personality diagnostics and eliminates the ten categorical types of personality disorders. Instead, the classification of personality disorder will focus on the overall severity of maladjustment, and the level of emotional dysfunction is a central part of this evaluation.

In the present study, emotional dysfunction is operationalized as affect integration, defined as the capacity for utilizing one's affects for adaptive purposes. The concept refers to the mutual relationship between the activation of basic affective experiences and the individual's capacity to consciously perceive, tolerate, reflect upon and express these experiences. Affect integration can be assessed by using the self-reported Affect Integration Inventory. While other instruments are designed to measure emotional dysfunction in terms of global capacity, the Affect Integration Inventory differs by its structured and systematic approach for assessing the capacity for affect integration at the level of specific affects or emotions (e.g., joy, sadness, anger). However, the Affect Integration Inventory is relatively newly developed, and its psychometric properties need to be addressed in clinical settings.

Aim: The papers comprising this dissertation aim to investigate emotional dysfunction in patients with personality disorders. The research project included four studies, each addressing emotional dysfunction from a specific scientifically and clinically relevant perspective.

1) Test the psychometric properties of the Affect Integration Inventory in a clinical sample consisting of patients with personality disorder.
2) Investigate the relationship between emotional dysfunction and psychopathology in patients with personality disorder.
3) Investigate and compare emotional dysfunction in patients with avoidant personality disorder or borderline personality disorder.
4) Investigate the longitudinal associations between baseline emotional dysfunction, changes in emotional dysfunction and changes in perceived quality of life and relational difficulties in a sample of patients with avoidant personality disorder.

Method: The overall study consisted of three cross-sectional studies (I-III) and one longitudinal follow-up pilot study (IV). Data were collected at two specialized outpatient clinics in the North Jutland Region. Patients who were referred for assessment and treatment at one of the outpatient clinics and who met the diagnostic

criteria for personality disorder were eligible for participation in the study. Eighty-seven patients were included in the study sample.

Results: In a mixed sample of patients with personality disorder, it was demonstrated that the Affect Integration Inventory appears to measure affect integration consistently and in agreement with the theoretical distinctions underlying the concept. Analyses of internal consistency, internal structure, convergent and discriminant validity, and known-group validity indicated that the Affect Integration Inventory measures the affect integration construct reliably and validly.

Examination of the associations between emotional dysfunction and other indicators of the severity of psychopathology in patients with personality disorder pointed to the affect integrative dysfunctions as located centrally at the intersection of psychological symptom formation, maladaptive interpersonal behavior, and the severity of personality dysfunction in patients with personality disorder. Affect integration statistically accounted for large parts of the variation in these external domains.

Emotional dysfunction in patients with avoidant personality disorder was examined by comparison with emotional dysfunction found in patients with borderline personality disorder. The results revealed that levels of dysfunction were highly similar for the global, experience and expression capacities for affect integration. However, scores deviated significantly for the discrete affects interest (with avoidant personality disorder having the lower mean) and jealousy (with borderline personality disorder having the lower mean). Additionally, emotional dysfunction was examined in terms of prototypical modes of experiencing affects, indicating that avoidant personality disorder was characterized by less access to the adaptive properties of interest, while the group of borderline personality disorder was more driven by anger and jealousy.

The results from the pilot study on changes in emotional dysfunction and their relation to concurrent changes in outcome (perceived quality of life, level of relational difficulties) during 6 months of psychotherapy for avoidant personality disorder revealed that average improvements were statistically nonsignificant and with small effect sizes. However, notable variations between the participants suggested that the patients with the most pronounced dysfunctions in affect integration before treatment were also the ones who improved the most. In regard to the relationship between baseline levels and changes in affect integration and concurrent changes in other outcome domains, the results demonstrated that initial levels of affect integration had nonsignificant correlations with changes in the outcome variables. On the other hand, changes in affect integration scores were strongly and moderately to strongly associated with improvements in both quality of life and level of interpersonal problems.

Conclusion: In this study, the centrality of emotional dysfunction in patients with personality disorder was comprehensively examined and demonstrated. Strong associations between emotional dysfunction and the severity of psychopathology were

detected, as well as specific patterns of emotional dysfunction for different personality disorders. Additionally, some promising perspectives for understanding changes in emotional dysfunction and their relationship to improvements in quality of life and interpersonal difficulties were preliminarily established.

DANSK RESUME

Baggrund: Det er velkendt, at emotionel dysfunktion spiller en central rolle i forståelsen af personlighedsforstyrrelse. Mens manifestationerne og implikationerne af denne forekommer velbeskrevet i relation til bestemte typer af personlighedsforstyrrelser (eks. borderline personlighedsforstyrrelse) kan selve overkategorien virke overset. Dog betyder den snarlige introduktion af ICD-11 systemet, at studier indenfor området synes særlig relevante. Med denne indføres således en dimensional tilgang til personlighedsdiagnostik, hvor de ti kategorielle personlighedsdiagnoser ekskluderes. I stedet vil der i klassifikationen af personlighedsforstyrrelser blive fokuseret på sværhedsgraden af lidelsen, og graden af emotionel dysfunktion bliver del af denne evaluering.

I dette studie er emotionel dysfunktion operationaliseret som affekt integration, defineret som kapaciteten til at omsætte og anvende affektive inputs til adaptive formål. Konceptet vedrører således det gensidige forhold mellem aktivering af basale affektive inputs og individets kapacitet til bevidst at kunne percipere, tolerere, reflektere over og udtrykke disse oplevelser. Affektintegration kan udredes ved hjælp af selvrapporteringsskemaet *Affect Integration Inventory*. Hvor andre instrumenter, der er udviklet til at måle på emotionel dysfunktion, oftest måler på en global følelsesforvaltningskapacitet, adskiller *Affect Integration Inventory* sig ved sin strukturerede og systematiske tilgange til vurderingen af kapaciteten til affektintegration på niveau af specifikke affekter (eks. glæde, tristhed og vrede). *Affect Integration Inventory* er dog relativt nyudviklet, og de psykometriske egenskaber mangler at blive afprøvet i et klinisk sample.

Formål: Målet for de artikler, som er inkluderet i denne afhandling, er at undersøge emotionel dysfunktion hos patienter med personlighedsforstyrrelser. Ph.d.-projektet indeholder således fire studier, som adresserer emotionel dysfunktion i hver sit videnskabelige og klinisk relevante perspektiv, herunder:

1) at teste de psykometriske egenskaber ved *Affect Integration Inventory* i et klinisk sample bestående af patienter med personlighedsforstyrrelse.
2) at undersøge forholdet mellem emotionel dysfunktion og sværhedsgraden af psykopatologi hos patienter med personlighedsforstyrrelse.
3) at undersøge og sammenligne emotionel dysfunktion hos patienter med undvigende personlighedsforstyrrelse eller borderline personlighedsforstyrrelse.
4) at undersøge den longitudinelle sammenhæng mellem baseline emotionel dysfunktion, forandringer i emotionel dysfunktion og forandring i oplevelsen af livskvalitet og interpersonelle vanskeligheder i et sample af patienter som modtager behandling for undvigende personlighedsforstyrrelse.

Metode: Ph.d.-projektet bestod af tre tværsnitsstudier (I-III) og et longitudinelt pilot-studie (IV). Data blev indsamlet på to specialiserede ambulatorier i Region

Nordjylland. Målgruppen for projektet var patienter, som var henvist til udredning og behandling og som opfyldte de diagnostiske kriterier for personlighedsforstyrrelse. 87 patienter med personlighedsforstyrrelse udgjorde det samlede studiesample.

Resultater: I et mixet sample bestående af patienter med personlighedsforstyrrelse blev det vist, hvordan operationaliseringen af affektintegration, sådan som den er udformet i *Affect Integration Inventory,* synes at producere scores i overensstemmelse med begrebets teoretiske distinktioner. Analyser af den indre konsistens, indre struktur, konvergent og diskriminant validitet samt kendt gruppevaliditet indikerede, at *Affect Integration Inventory* måler affektintegration på en stringent, pålidelig og valid måde.

I undersøgelsen af sammenhængen mellem emotionel dysfunktion og andre indikatorer på psykopatologi hos patienter med personlighedsforstyrrelse pegede resultaterne på affektintegration som centralt forankret i relation til psykologisk symptomformation, maladaptiv interpersonel adfærd og sværhedsgraden af personlighedsdysfunktion. Affektintegration tegner sig således for meget af variansen inden for de nævnte domæner.

Efter at have sammenlignet emotionel dysfunktion hos patienter med undvigende personlighedsforstyrrelse med emotionel dysfunktion fundet hos patienter med borderline personlighedsforstyrrelse blev det tydeligt, at graden af dysfunktion i den globale og de oplevelses- og udtryksmæssige kapaciteter til affektintegration var sammenlignelig i de to grupper. Scores adskilte sig derimod signifikant i relation til affekterne interesse (hvor undvigende personlighedsforstyrrelse havde det laveste gennemsnit) og jalousi (hvor borderline personlighedsforstyrrelse havde det laveste gennemsnit). Herudover blev emotionel dysfunktion undersøgt i form af prototypiske måder at opleve affekter på. Resultaterne af undersøgelsen indikerede, at undvigende personlighedsforstyrrelse var associeret med en mere begrænset tilgang til de adaptive egenskaber af interesse, mens gruppen af patienter med borderline personlighedsforstyrrelse var mere drevet af affekterne vrede og jalousi.

Resultaterne af pilotundersøgelsen af forandringer i emotionel dysfunktion og relationen til samtidige forandringer i outcome (livskvalitet og interpersonelle vanskeligheder) efter seks måneders psykoterapi for behandling af undvigende personlighedsforstyrrelse viste, at graden af gennemsnitsforandring var ikke-signifikant og effektstørrelsen var lille. Dog viste resultaterne også en bemærkelsesværdig variation mellem patienter, hvilken indikerede, at patienter med mest udtalt emotionel dysfunktion før behandling også var de patienter, som profiterede mest af behandlingen. Relationen mellem baseline affektintegration og forandringer i outcome demonstrerede ikke-signifikante korrelationer, hvorimod forandringer i affektintegration var stærkt og moderat til stærkt associeret med forandringer i oplevelsen af livskvalitet og graden af interpersonelle vanskeligheder.

Konklusion; I dette studie blev den centrale betydning af emotionel dysfunktion i patienter med personlighedsforstyrrelse undersøgt og bekræftet. Der blev afdækket

stærke associationer mellem emotionel dysfunktion og sværhedsgraden af psykopatologi, såvel som specifikke mønstre for emotionel dysfunktion for forskellige personlighedsforstyrrelser. Herudover var der lovende fund, som præliminært afdækkede forholdet mellem forandringer i graden af emotionel dysfunktion og udvikling i oplevelsen af livskvalitet og omfanget af interpersonelle vanskeligheder.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF SCIENTIFIC PAPERS

The thesis is based on the following four papers:

Paper I: Frederiksen, C., Solbakken, O. A., Licht, R. W., Christensen, A. E., Jørgensen, C. R. & Kjaersdam Telléus, G. Validation of the Affect Integration Inventory in a sample of patients with personality disorders: a cross sectional study. *(In review)*

Paper II: Frederiksen, C., Solbakken, O. A., Licht, R. W., Jørgensen, C. R., Rodrigo-Domingo, M. & Kjaersdam Telléus, G. The relationship between affect integration and psychopathology in patients with personality disorder: a cross-sectional study. *(In review)*

Paper III: Frederiksen, C., Solbakken, O. A., Licht, R. W., Jørgensen, C. R., Rodrigo-Domingo, M. & Kjaersdam Telléus, G. Emotional Dysfunction in Avoidant Personality Disorder and Borderline Personality Disorder: a cross-sectional comparative study. *(In review)*

Paper IV: Frederiksen, C., Solbakken, O. A., Licht, R. W., Jørgensen, C. R., Rodrigo-Domingo, M. & Kjaersdam Telléus, G. Changes in emotional dysfunction during 6 months of psychotherapy for avoidant personality disorder. *(In preparation)*

Paper I - IV are included in Appendix A. Papers.

TABLE OF FIGURES

ABBREVIATIONS

ACI	Affect Consciousness Interview
AI	Affect integration
AIC	Akaike's information criteria
AII	Affect Integration Inventory
AMPD	Alternative model of personality disorders
APD	Avoidant personality disorder
BIC	Bayesian information criteria
BPD	Borderline personality disorder
CFA	Confirmatory factor analysis
CI	Confidence interval
CFI	Comparative fit index
DSM-IV	The Diagnostic and Statistical Manual of Mental Disorders fourth edition
DSM-5	The Diagnostic and Statistical Manual of Mental Disorders fifth edition
ERQ	Emotion Regulation Questionnaire
GSI	Global severity index
ICD-11	11th edition of the International Classification of Diseases
IFI	Incremental fit index
IIP-64	The Inventory of Interpersonal Problems 64 circumplex version
IQR	Interquartile range
LPFS	Levels of Personality Functioning Scale
PD	Personality disorder
PSE	Present State Examination
r	Pearson's correlation coefficient
RMSEA	Root mean square error of approximation
SCID-II	Structured Clinical Interview for DSM-IV axis II disorders

SCL-90R   The Severity Checklist-90, Revised

SIPP-118   The Severity Indices of Personality Problems

SD   Standard deviation

TAS 20   Toronto Alexithymia Scale 20

CHAPTER 1. INTRODUCTION

This chapter introduces the core concepts that are the subject of this Ph.D. thesis, including personality disorder (PD) and the affect integration (AI) construct. First, the general characteristics of PD are presented, followed by a description of the current and future diagnostic conceptualization of the disorder. Subsequently, the concept of AI and its theoretical foundation are introduced, as emotional dysfunction in the present study has been operationalized through this construct. Finally, state of the art in relation to emotional dysfunction in PD is summarized.

1.1. PERSONALITY DISORDER

PD is a common disorder with a prevalence ranging between 5% and 12% in community samples (Samuels, 2011; Volkert et al., 2018; Winsper et al., 2020), 24% in primary care attenders (Moran et al., 2000) and between 40% and 92% in European outpatients (Beckwith et al., 2014). In general, the prevalence of PD varies across different sociodemographic groups, being higher among those who are unemployed, separated/divorced and those who have dropped out of high school (Samuels, 2011). PD is a heterogeneous condition, and its appearance can differ significantly depending on which personality traits are prominent.

Undoubtedly, PD represents a challenge to the health care system. Individuals with PD are more likely to have Axis I disorders, including mood disorders, anxiety disorders, alcohol and other substance use disorders. PD increases the risk of a complicated relationship between patients and health care professionals. Individuals with PD have a higher use of medical services and experience more medical morbidity and mortality, and individuals with PDs are more likely to have a history of suicidal behaviors, criminal arrest and interpersonal violence, representing a massive cost to society (Moran et al., 2000; Samuels, 2011; Tyrer et al., 2015).

It is generally accepted that PD arises from the interaction between genetic and environmental influences. Evidence points to childhood adversities and trauma, especially abuse and neglect, as associated with the development of PD (Samuels, 2011), including low socioeconomic status, receiving family welfare support, being raised by a single parent, recurrent parental conflicts, parental illness or death, limited emotional bonding between parent and child, the use of exaggerated punishment, maternal excessive control, parental psychopathology, and childhood sexual, physical, and verbal abuse (Kongerslev et al., 2015). With PD, as with most other mental disorders, it is difficult to identify specific genes associated with the disorder. Instead, PD appears to be influenced by several interacting genes contributing to the etiology and development of PD (Livesley & Larstone, 2018).

1.2. THE DIAGNOSTIC CLASSIFICATION OF PERSONALITY DISORDER

According to the categorial diagnostic approach presented in the Diagnostic and Statistical Manual of Mental Disorders fifth edition (American Psychiatric Association, 2013), PD is defined according to the following diagnostic criteria:

A. An enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual´s culture. This pattern is manifested in two (or more) of the following areas:

    1. Cognition (i.e., ways of perceiving and interpreting self, other people, and events).

    2. Affectivity (i.e., the range, intensity, lability, and appropriateness of emotional response).

    3. Interpersonal functioning.

    4. Impulse control.

B. The enduring pattern is inflexible and pervasive across a broad range of personal and social situations.
C. The enduring pattern leads to clinically significant distress or impairment in social, occupational or other important areas of functioning.
D. The pattern is stable and of long duration, and its onset can be traced back at least to adolescence or early adulthood.
E. The enduring pattern is not better explained as a manifestation or consequence of another mental disorder.
F. The enduring pattern is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (e.g. head trauma).

In this conventional diagnostic approach, ten specific PDs are specified, including paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent and obsessive-compulsive personality disorders. Furthermore, three additional diagnoses for categorizing personality dysfunction that do not match the criteria of the ten specific disorders but exhibit the characteristics of a personality disorder are specified, including personality change due to another medical condition, other specified personality disorder and personality disorder not otherwise specified (American Psychiatric Association, 2013).

From the categorial diagnostic perspective presented above, PDs are thought of as qualitatively distinct clinical syndromes (American Psychiatric Association, 2013). However, this approach has been criticized for several shortcomings in the classification of PD. For example, a large amount of research has identified excessive co-occurrence among PDs, meaning that most patients diagnosed with one PD also

meet the criteria for other PDs. Additionally, different PDs have different thresholds for qualifying for a diagnosis; therefore, an empirically based rationale for setting the boundaries between pathological and normal personality functioning is lacking. Likewise, using polythetic criteria in which a minimum number of criteria are needed (e.g., five) from a list of several (e.g., nine), but not a single one is necessary, results in extreme heterogeneity among patients receiving the same diagnosis (Skodol, 2012). Finally, it appears that despite the specification of ten types of PD, the DSM system may not have sufficiently covered the diversity of personality pathology, as the most common PD diagnosis is personality disorder not otherwise specified (Verheul et al., 2007).

Both the alternative diagnostic model of PD (AMPD) presented in section III of the DSM-5 and the upcoming 11th edition of the International Classification of Diseases (ICD-11: World Health Organization., 2018) aim to address these shortcomings by introducing a dimensional, trait-based model of personality pathology in two fairly similar but also somewhat divergent ways (Bach et al., 2017; Tyrer et al., 2019).

The DSM-5 AMPD is defined as a "hybrid model" and involves dimensional ratings of the severity of impairment in self and interpersonal functioning, measured by the five-point Level of Personality Functioning Scale (LPFS) (American Psychiatric Association, 2013). Additionally, 25 pathological personality trait facets organized in five trait domains, including negative affectivity, detachment, antagonism, disinhibition, and psychoticism, are specified. The five domains correspond to maladaptive variants of the five-factor model of personality (Skodol et al., 2015). From this evaluation, six specific PD diagnoses can be derived, including antisocial, avoidant, borderline, narcissistic, obsessive-compulsive, and schizotypal PD. The diagnosis personality disorder–trait specified can be made when a PD is considered present, but the criteria for a specific disorder are not met (American Psychiatric Association, 2013).

The ICD-11 also emphasizes the impairment in self and interpersonal functioning and classifies the dysfunction according to level of severity (Bach & First, 2018). Consequently, in the ICD-11, the ten categorial PD diagnoses no longer exist. Instead, the presence of PD is determined according to the general diagnostic requirements, and the level of severity can be classified into three categories (mild, moderate or severe). Additionally, the PD diagnosis may also be specified with one or more trait qualifiers if they are prominent in the individual´s personality style, including negative affectivity, detachment, antagonism/dissociality, disinhibition, and anankastia (Bach et al., 2017).

1.3. AFFECT INTEGRATION

As seen in the diagnostic conceptualization, emotional dysfunction is considered a central component of PD. This concept is operationalized through the theoretical construct of AI, which refers to the functional and fluent integration of affect in cognition, motivation, and behavior (Solbakken, Hansen, Havik, et al., 2011). AI is

defined as the capacity to utilize one's affects for adaptive purposes and refers to those processes that influence the availability of affects for motivating, guiding, and informing individuals in their transactions with their surroundings (Solbakken, 2011). According to the AI model, the capacity for AI enables the individual to access and utilize the motivational and informational properties of basic affects for personal adjustment, including a general capacity for emotional self-regulation (Taarvig et al., 2015). Thus, high levels of AI are thought to protect against psychopathology by ensuring appropriately modulated affective responses to the individual´s encounters with an ever-changing world (Monsen et al., 1996; Monsen & Monsen, 1999; Solbakken, Hansen, & Monsen, 2011).

As a term, AI was first introduced by Tomkins (2008a) to define a specific type of healthy affective developmental path. On later occasions, the concept was further elaborated by Krystal (1974), Shapiro (1991) and Stolorow et al. (1987), who emphasized attuned responsiveness to one's affective reactions. From this point of view, affects are perceived as principal organizers of self-experience throughout development, as long as they are met with adequate acknowledgment, affirmation, acceptance, and containment from caregivers. However, the absence of adequate responsiveness toward the child's affective states carries the risk of significant derailments of AI and self-experience, including the propensity to dissociate or disavow affective reactions, in turn making the child vulnerable to self-fragmentation (Stolorow et al., 1987).

In the 1980s, Monsen, Ødegård & Melgård (1986) developed the first operational definition of AI as part of the Tøyen study, a naturalistic outcome study including patients with PD (Monsen et al., 1989, 1995a, 1995b). The definition was inspired by affect theory and self-psychology (e.g., Basch, 1983; Izard, 1977, 1991; Stern, 1985; Stolorow & Atwood, 1992; Stolorow, Atwood, & Brandchaft, 1987), with the comprehensive work on affect and script theory by Silvan Tomkins (e.g., Tomkins, 2008a, 2008b) as its core. Monsen & Monsen (1999) defined AI as the mutual relationship between the activation of basic affective experiences on the one hand and the individual's capacity to consciously perceive, tolerate, reflect upon and express these experiences on the other. Affects are posited as biologically based responses; however, as a consequence of the individual's unique developmental history, affect processes are shaped and organized idiosyncratically as automatized patterns or scripts for experiencing, comprehending, and expressing one´s affective reactions (Solbakken, Hansen, & Monsen, 2011; Tomkins, 2008a, 2008b).

1.3.1. AFFECTS, EMOTIONS AND FEELINGS

Affects, emotions, and feelings are commonly used terms in the psychological literature. However, no conclusive and common agreement upon their definitions exists, and it appears that the terms are used differently by different researchers. In the present thesis, affect is defined in line with Tomkins (2008a, 2008b). From this point of view, it is proposed that there exist several basic affects that are common to all humans. Along with pain, homeostatic life support processes and cyclical drives,

affects are thought to constitute the primary motivating forces of the human organism. In fact, affects are considered the primary and most flexible of these motivational forces. The affect system is assumed to interact and transact with the other major adaptive systems of the human organism, including drive, motor, perceptual, sensory, memory and cognitive systems. Affects are considered an amplifying mechanism that intensifies and extends the duration of the impact of whatever triggers them. Affects thus make matters urgent (Izard & Ackerman, 2000; Tomkins, 2008a). The affect system is presumed to be an independent, evolutionarily early response apparatus developed for adaptive purposes (Panksepp, 1998; Panksepp, 2000; Tomkins, 2008a, 2008b). It is suggested that affects are always present, continually shaping and codetermining the contents of consciousness and what behaviors are initiated and/or terminated (Izard, 2007).

In addition to guiding attention and motivating behavior, the activation of affects is presumed central to the coherence of experience. Affects are considered inherently intentional, containing basic informational value or signal function (Solbakken, Hansen, & Monsen, 2011). An affect signal carries not only information about something in the world but also evokes a distinct kind of awareness of oneself, yielding parallel information about the external world, one's self-state, and the relationship between the two (Slaby & Stephan, 2008). If, for some reason, this signal function breaks down and the affect becomes voided of meaning, it manifests as incoherence and disorganization of experience (Solbakken, Hansen, & Monsen, 2011).

Activation of an affect influences in several ways. First, a basic affective signal (Izard, 2007, 2009; Tomkins, 2008a) evokes cascading reactions and responses in both motor, somatosensory, perceptual and cognitive systems (Solbakken, Hansen, & Monsen, 2011). These responses may then transact with each other and create a new stimulus that may activate further affective responses. Thus, one affective experience is usually part of larger ongoing processes that can be termed the affect process. The organization of these processes is highly individualized and involves several aspects. Some of these are easily accessible to awareness, e.g., those mental states that have undergone the process of semantic symbolization. Others are only available to phenomenal consciousness (Izard, 2007), e.g., the bodily felt sense and unsymbolized or presymbolized mental states, while some elements remain outside awareness and phenomenal consciousness. Additionally, in some situations, the affect signal remains outside of awareness, e.g., at low affect intensities, when the affect signal is competing with other activators, such as pressing drives or pain, or when avoidance strategies obscure and remove affects from awareness (Solbakken, Hansen, & Monsen, 2011).

Theoretically, the organization of affect processes can be defined according to script theory (Tomkins, 1995), in which the underlying organizing principles of experience are termed scripts. Accordingly, the overall structure of personality is conceptualized as the totality of affect processes as defined by scripts and interscript scripts (scripts for interactions between scripts) (Tomkins, 1995). Prototypical affective scripts are presumed to become established and structuralized as stable characteristics of the

individual's way of experiencing the world through time and development (Tomkins, 1995, 2008a, 2008b).

To summarize, an affect constitutes a specific psychobiological state common to all human beings that inherently will guide attention, motivate behavior and provide information about the stimuli (internal or external) that activate the affect. Affects are thought to be evolutionarily rooted, with adaptive functions for securing the survival and success of an organism and its species. On the other hand, an emotion is often defined as a more comprehensive class of affective experiences, including the recollection of past experiences with the affect, expectations, associated cognitions, appraisals, and, to a certain degree, coping strategies. From this point of view, an emotion may best be conceived as individualized patterns in the experience of a given affect, resembling the affective process described above (Izard, 1991). Feelings are typically used for defining those aspects of an affect process that are available to phenomenological experience, i.e., the conscious processing of affective experiences, whether it is a bodily felt sense or its associated mental content (Solbakken, 2011).

1.3.2. THEORETICALLY RELATED CONSTRUCTS AND OPERATIONALIZATIONS

Several constructs have been developed to account for processes related to the activation of affects and their impact on thoughts and behavior. Most notable might be the concepts of alexithymia (Bagby et al., 1994; Lesser, 1981), mentalized affectivity (Fonagy et al., 2002; Jurist, 2005), emotion regulation (Gross, 2007), levels of emotional awareness (Lane et al., 1990), emotional understanding (Hellwig et al., 2020) and emotional intelligence (Salovey & Mayer, 1990). Overall, these constructs are comparable in terms of foci. What primarily sets them apart from the AI construct is the lack of emphasis on discrete affects and their unique adaptive, informational and motivational impact (Choi-Kain & Gunderson, 2008; Solbakken, Hansen, & Monsen, 2011).

For the present thesis, the concepts of alexithymia, mentalized affectivity and emotion regulation are more thoroughly introduced and discussed in relation to their theoretical relationship with the AI construct.

Alexithymia
Alexithymia is one of the earliest concepts to address dysfunctions in the capacity to perceive and comprehend emotional experiences, referring to deficiencies in identifying and describing emotional experiences (Nemiah & Sifneos, 1970). Alexithymia is commonly addressed in terms of difficulties in identifying and distinguishing feelings from somatic sensations, difficulties in verbalizing feelings, a restricted fantasy life, and an externally oriented style of thinking (Bagby et al., 1994). In defining the capacity to be aware of and to verbalize emotional experiences, the AI construct partly overlaps with alexithymia (Choi-Kain & Gunderson, 2008). However, the concept of alexithymia does not include information on affect tolerance or nonverbal aspects of expression. In fact, it seems that the concept of alexithymia

mostly measures the capacity for semantically classifying and expressing emotional experiences. Additionally, as mentioned above, there is no differentiation between discrete emotions in the assessment of alexithymia (Solbakken, 2011).

Mentalized affectivity

A related concept that has recently received substantial attention is the concept of mentalized affectivity (Fonagy et al., 2002; Jurist, 2005). Mentalized affectivity refers to a mature capacity for affect regulation that includes the reevaluation of affects through the understanding of the complex relationship between past experiences and their impact on present perception. Hence, while remaining within the affective state, affect regulation is achieved through reflection (Fonagy et al., 2002; Jurist, 2005). Mentalized affectivity has been operationalized into three aspects: Identifying, Processing, and Expressing. According to Greenberg et al. (2017), Identifying emotions involves the labeling of emotions and the more complex process of making sense of the emotion from the perspective of one's personal history and exploration of its meaning. Processing emotions involves modulation and regulation while Expressing emotions involves the communication of thoughts and emotions. All aspects of mentalized affectivity, but especially Processing and Expressing, share substantial conceptual overlap with the AI construct, suggesting that studies on AI might be suited for generalizing to the mentalized affectivity concept and vice versa (Choi-Kain & Gunderson, 2008; Greenberg et al., 2017; Jurist, 2005; Solbakken, Hansen, & Monsen, 2011). However, the mentalized affective scale does not promote any differentiation between affects or emotions.

Emotion regulation

According to Gross and Thompson (2007), emotion regulation refers to the process by which emotions are regulated either unconsciously (automatically) or consciously (voluntarily) by oneself in both self and others. Reappraisal along with expression suppression represent two of the most commonly studied emotion regulation strategies (Loewenstein, 2007). Reappraisal is defined as the reevaluation of a situation and the emotional reaction to it in a way that increases positive and reduces negative emotion (Gross & John, 2003). The process of reappraisal includes rethinking or reinterpreting and thus encompasses a subtle suppression of specific unwanted emotions. Therefore, the concept, to some extent, contrasts with high-level AI, which involves acceptance, acknowledgment, and understanding of one´s emotions (Monsen et al., 2008). Expression suppression is defined as the inhibition of ongoing emotion-expressive behavior covering up the underlying activated emotion (Gross & John, 2003). This behavior includes the characteristics of inhibition and withholding of emotional expressions, which is a central part of the definition of a low capacity for emotional expression in AI. Thus, reappraisal and expression suppression both overlap and can be contrasted with AI to some extent. As with the other concepts discussed above, emotion regulation also does not differentiate between different emotions.

1.4. EMOTIONAL DYSFUNCTION IN INDIVIDUALS WITH PD

In the following sections, the scientific state of the art in relation to emotional dysfunction in individuals with PD is presented.

1.4.1. EMOTIONAL DYSFUNCTION AND PSYCHOPATHOLOGY IN INDIVIDUALS WITH PD

In some studies including clinical outpatient samples with a high prevalence of patients with PD, it has been shown that low levels of AI are associated with higher levels of psychopathology, interpersonal problems, symptom distress, and overall levels of personality problems (Monsen et al., 1996; Solbakken, Hansen, Havik, et al., 2011). However, findings have been mixed. In a study by Normann-Eide et al. (2013) including individuals with PD, low levels of AI, measured with the Affect Consciousness Interview (ACI: Monsen et al. 2008), were related to lower levels of self-esteem and higher levels of interpersonal problems but not to symptom distress or the number of fulfilled criteria on the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II: First, 1997). The relationship between emotional dysfunction and psychopathology has also been addressed by examining the alexithymia construct. Nicoló et al. (2011) investigated alexithymia measured by the Toronto Alexithymia Scale 20 (TAS 20: Bagby et al., 1994) and its association with diagnostic features, symptom distress, and relational difficulties. The results demonstrated that high levels of alexithymia were related to high levels of PD traits (particularly cluster C traits), more interpersonal problems and symptom distress. The findings were in agreement with results from a study by Bach et al. (1994), who established that dependent, avoidant, and schizotypal personality traits and absences of histrionic traits were associated with alexithymia. In a sample of patients diagnosed with either borderline personality disorder (BPD) or avoidant personality disorder (APD), Johansen et al. (2016) addressed the relationship between emotional dysfunction (measured by the ACI) and impairment in personality function operationalized through the Severity Indices of Personality Problems (SIPP-118: Andrea et al., 2007) and found a significant association between low levels of AI and more severe dysfunction in relation to identity integration and relational functioning. A meta-analysis by Derks et al. (2016) found moderate to strong positive associations between deficits in emotional awareness and BPD, while several studies have demonstrated the close relationship between BPD, interpersonal dysfunction and impulsivity in relation to mentalizing deficits (Fonagy et al., 2016), mindfulness deficits (Wupperman et al., 2008, 2009), emotional dysregulation (Kröger et al., 2011), and low emotional intelligence (Leible & Snell, 2004).

1.4.2. EMOTIONAL DYSFUNCTIONS IN INDIVIDUALS WITH APD AND IN INDIVIDUALS WITH BPD

As mentioned above, ten diagnostic entities are specified in the conventional system for the classification of PD (DSM-5). In the following section, knowledge on the topic

of emotional dysfunction in individuals with APD and individuals with BPD is presented. In the diagnostic conceptualization of APD, patterns of extensive social avoidance, social inhibition, hypersensitivity toward negative evaluation, and all-embracing fears due to the possibility of rejection because of personal inadequacy are the core components (American Psychiatric Association, 2013). Additionally, in DSM-5 AMPD, APD is retained as a distinct diagnostic entity (American Psychiatric Association, 2013). APD is one of the most common personality disorders in the general population and has a high prevalence in clinical samples (Torgersen et al., 2001; Verheul et al., 2007; Zimmerman et al., 2005).

BPD, on the other hand, represents one of the most commonly studied PDs. Diagnostically, BPD is classified by patterns of instability in interpersonal relationships, self-image and affects, along with marked impulsivity (American Psychiatric Association, 2013). In both DSM-5 AMPD and ICD-11, BPD remains a distinct diagnostic category.

1.4.3. CHARACTERISTICS OF EMOTIONAL DYSFUNCTION IN INDIVIDUALS WITH APD

Some argue that individuals with APD keep thoughts and emotions away from consciousness for defensive reasons, while others stress the lack of emotional clarity as a consequence of deficits in the capacity to access thoughts and feelings. However, one position does not necessarily exclude the other, as individuals with APD automatically succeed in cognitive avoidance (a defense strategy) if they cannot keep an emotional reaction in memory long enough to understand the reason behind it (Dimaggio et al., 2007).

Taylor, Laposa and Alden (2004) performed a study on emotional avoidance and found that individuals with APD showed extensive avoidance of both positive and negative emotions. Ye et al. (2011) examined individuals with APD (selected according to the Personality Diagnostic Questionnaire and Personality Disorder Interview-IV) and observed a greater degree of negative and a lesser degree of positive emotions when compared to healthy controls. A study by Spinhoven et al. (2009) revealed that patients with cluster C PDs reported significantly more experiential avoidance, defined as an unwillingness to be in contact with or a tendency to alter the form or frequency of particular unwanted private experiences, when compared to nonclinical controls. Several studies have linked cluster C PDs and APD in particular to high rates of alexithymia (Bach et al., 1994; Joyce et al., 2013; Nicolo et al., 2011). A study by Simonsen et al. (2020) demonstrated a large variation in the distribution of alexithymia (measured by TAS 20) in patients with APD. Moroni et al. (2016) examined the meta-cognitive characteristics of APD in comparison with other PDs and found that dysfunctions in the ability to correctly identify the mental states of others and in the ability to identify own inner states were distinct features of APD.

In a sample of students, Schoenleber and Berenbaum (2010) found that individuals with cluster C traits tended to experience shame as especially unpleasant and aversive.

Additionally, they were more prone to experience shame reactions. In a later study, Schoenleber and Berenbaum (2012) reported that shame aversion was related to several PDs, while shame proneness was related to APD symptoms only. Karterud et al. (2016) examined the relationship between primary emotions and PDs. Primary emotions were defined according to Panksepp (2005) as cross-species emotional systems that work as the prime motivator, including behavior and autonomic response patterns along with primal affective feeling states (Karterud et al., 2016; Panksepp, 2005; Panksepp & Watt, 2011). The results demonstrated that APD had a low threshold for fear (i.e., the affective reaction is easily evoked) and a heightened threshold for play and seeking (i.e., the affective reaction is hard to evoke) when compared to other PDs. Additionally, an increased level of anger was associated with a reduced number of APD criteria (Karterud et al., 2016).

1.4.4. CHARACTERISTICS OF EMOTIONAL DYSFUNCTION IN INDIVIDUALS WITH BPD

According to Linehan's (1993) biosocial model, emotional dysfunction in BPD consists of four components: emotional sensitivity, heightened negative affect, deficient emotion regulation strategies, and frequent use of maladaptive regulation strategies.

In a review by Chapman (2019), the manifestations of emotional dysfunction in BPD were summarized, stating that individuals with BPD tend to be less specific in the differentiation of various negative emotions and consequently represent them as the same. Additionally, a tendency to experience difficulties with emotion identification and description and emotional clarity and awareness was demonstrated.

Studies suggest that BPD is associated with restricted access to efficient emotion regulation strategies, favoring short-term and ineffective strategies (Chapman, 2019; Daros & Williams, 2019). A meta-review by Daros and Williams (2019) demonstrated that BPD was related to an increased use of inefficient emotion regulation strategies, such as rumination and avoidance, and a reduced use of more adaptive strategies, such as problem-solving and acceptance, when compared to other mental disorders, e.g., social anxiety and bipolar disorder (Daros & Williams, 2019). Additionally, evidence provides support for the notion that suppression is significantly associated with BPD and that individuals with BPD report less emotional benefits from acceptance than from suppression (Baer et al., 2012; Chapman et al., 2017).

A limited number of studies have compared APD and BPD with respect to the severity and distinctness of emotional dysfunction. Herpertz et al. (2000) compared the emotional responses in individuals with APD to those with BPD, without finding evidence to support the hypothesis of general affective hypersensitivity in BPD. Johansen et al. (2013) compared emotional dysfunction in patients with APD to that in patients with BPD by using the ACI. The results revealed significantly lower scores for the global capacity to adaptively perceive, tolerate and comprehend affective experiences in the APD group. Furthermore, the APD group was more impaired in

their ability to communicate affective experiences directly and clearly. Finally, the groups differed for discrete affects interest and contempt, with the APD group scoring significantly lower (Johansen et al., 2013).

In summary, evidence points to emotional dysfunction in individuals with APD due to malfunctions in the capacity to correctly identify emotions and their cause. In contrast, emotional dysfunction in individuals with BPD is considered a consequence of a lack of emotional awareness and clarity, along with a tendency to represent negative emotions in an undifferentiated manner. In other words, it seems that both APD and BPD are characterized by dysfunctions in the capacity to perceive, tolerate, and comprehend emotional reactions. However, they deviate, as individuals with APD may have access to too little emotional information and activation, whereas those with BPD seem overwhelmed. Regarding discrete affects, evidence suggests that individuals with APD experience increased dysfunction in the management of interest, while those with BPD struggle with the management of anger. Dysfunctions in the management of shame seem to be of equal importance in both disorders (Schoenleber & Berenbaum, 2010, 2012).

1.5. EMOTIONAL DYSFUNCTION BEFORE AND DURING TREATMENT FOR APD

APD has been linked to emotional dysfunction. However, knowledge about the specific relationship between psychotherapeutic treatment for APD, emotional dysfunction and changes in symptoms over time in treatment seems scarce. In a study by Gude et al. (2001), the predictive value of AI on treatment outcome was investigated in a sample of 44 patients with panic disorder and/or agoraphobia and cluster C personality traits. The study demonstrated how pretreatment levels of AI were related to a reduction in APD traits (measured by SCID-II), whereas increases in AI during treatment did not contribute in the same way. In a mixed clinical sample including patients with APD, Solbakken et al. (2012) examined the associations between baseline levels of AI (measured by the ACI) and the extent of change in outcomes throughout and after open-ended psychotherapy. The results showed that patients with more severe problems with AI experienced larger improvements in terms of symptoms and interpersonal and personality problems compared with those with less severe problems given the open-ended treatment format. Normann-Eide et al. (2015) investigated changes in AI in a sample of patients with APD or BPD. The results revealed a significant increase in AI scores after treatment. Additionally, the change contributed significantly to explaining the variance in follow-up levels in two areas of personality functioning (relational capacities and identity integration) and interpersonal problems. However, the improvements in the capacity for AI were not related to changes in the personality domain of self-control, symptom distress or self-esteem.

CHAPTER 2. OBJECTIVE AND HYPOTHESES

2.1. OVERALL OBJECTIVE OF THE PH.D. STUDY

Emotional dysfunction is considered a central component in PD. The overall aim of this study was to empirically investigate emotional dysfunction as operationalized through the Affect Integration Inventory (AII: Solbakken et al., 2017) in adult patients with PD. Four objectives were specified:

1) To test the psychometric properties of the AII in a sample of patients with PD.
2) To assess the relationship between emotional dysfunction and the severity of psychopathology associated with PD.
3) To investigate emotional dysfunction in patients with APD compared to the emotional dysfunction in patients with BPD in order to identify potentially disorder-specific patterns of emotional difficulties.
4) To study the association between baseline levels and changes in emotional dysfunction and concurrent changes in other central outcome domains in a sample of patients in treatment for APD.

2.2. STUDY I

The aim of study I was to test the psychometric properties of the AII in a clinical setting. By different means, several aspects of construct validity were addressed in three interrelated substudies.

In the first substudy, the internal structure of scores from the AII was assessed through analyses of internal consistency and confirmatory factor analysis (CFA).

It was hypothesized that

1) A discrete affect model would yield the best fit for the obtained data.

In the second substudy, the convergent and discriminant validity of scores from the AII was examined by investigating the relationship between scores on the AII and scores from conceptually related instruments and by examining the relationship between scores on the AII and the conceptually unrelated factors of age and gender.

In the final substudy, known-group validity was evaluated by comparing scores on the AII in the clinical sample to the scores in an archival, nonclinical community sample.

It was hypothesized that

1) Scores on the AII systematically differentiated patients with PD from nonclinical controls.

2.3. STUDY II

The aim of study II was to investigate the relationship between emotional dysfunction and the severity of psychopathology in patients with PD.

It was hypothesized that

1) Problems with AI were related to higher levels of symptom distress and more relational difficulties.
2) Problems with AI for discrete affects were related to specific types of interpersonal problems.
3) Problems with AI were related to more maladaptive personality functioning.

2.4. STUDY III

The aim of study III was to examine affective dysfunction in patients with APD and patients with BPD and compare the two groups.

It was hypothesized that

1) APD and BPD are characterized by similar overall levels of dysfunction in the capacity to perceive, tolerate, and comprehend affects.
2) APD is characterized by greater dysfunction in the capacity to communicate and share affective reactions and experiences with others.
3) Affective dysfunction in APD and BPD would differ in terms of characteristic dysfunctional modes of experiencing specific affects.

2.5. STUDY IV

The aim of study IV was to examine changes in emotional dysfunction between the baseline and at a 6-month follow-up in patients with APD. The purpose was to address the relationship between baseline levels of emotional dysfunction, changes in emotional dysfunction and concurrent changes in other central outcome domains.

The investigation was specified into three areas of interest:

1) An examination of the magnitude and variation of change in emotional dysfunction, by investigation of changes in Global AI, the capacity for affect experience, and the capacity for affect expression during the first 6 months of psychotherapy for APD.
2) An examination of the predictive effects of baseline level of AI on subsequent changes in AI, quality of life, and level of relational difficulties.

3) An examination of the relationship between changes in AI during treatment and concurrent changes in quality of life and level of relational difficulties.

CHAPTER 3. METHODS

This chapter describes the study design, inclusion of participants, data collection procedures, measures and statistical analyses used in the study. The methods introduced in this thesis correspond to those applied and described specifically in studies I to IV.

3.1. SETTINGS

The study was conducted at two hospital-based outpatient units specialized in the assessment and treatment of PDs in the Psychiatric Health Care Services of the North Denmark Region at "Ambulatorium for Angst og Personlighedspsykiatri", Clinic Psychiatry North, located in Brønderslev, and at "Ambulatorium for Personlighedspsykiatri", Clinic Psychiatry South, Aalborg University Hospital, located in Aalborg. Both units receive, assess, and treat patients who exhibit symptoms of PD. Patients are referred either by the general practitioner, psychiatric inpatient clinics or other outpatient clinics. Patients were treated in accordance with Danish national guidelines.

3.2. PARTICIPANTS

For all studies, the primary inclusion criteria were referral to and treatment at one of the abovementioned outpatient clinics, age above 18 years, and Danish literacy. Patients with comorbid bipolar I disorder, psychotic disorder, developmental disorder (e.g., Asperger's disorder), or a diagnosis of drug or alcohol dependence potentially interfering with the outcome measures were excluded. From October 2015 to December 2018, all referrals were evaluated for eligibility, resulting in 151 eligible participants. Figure 1 illustrates the flow of patient inclusion in the study sample.

Figure 1: Flowchart for inclusion of participants in the general study sample.
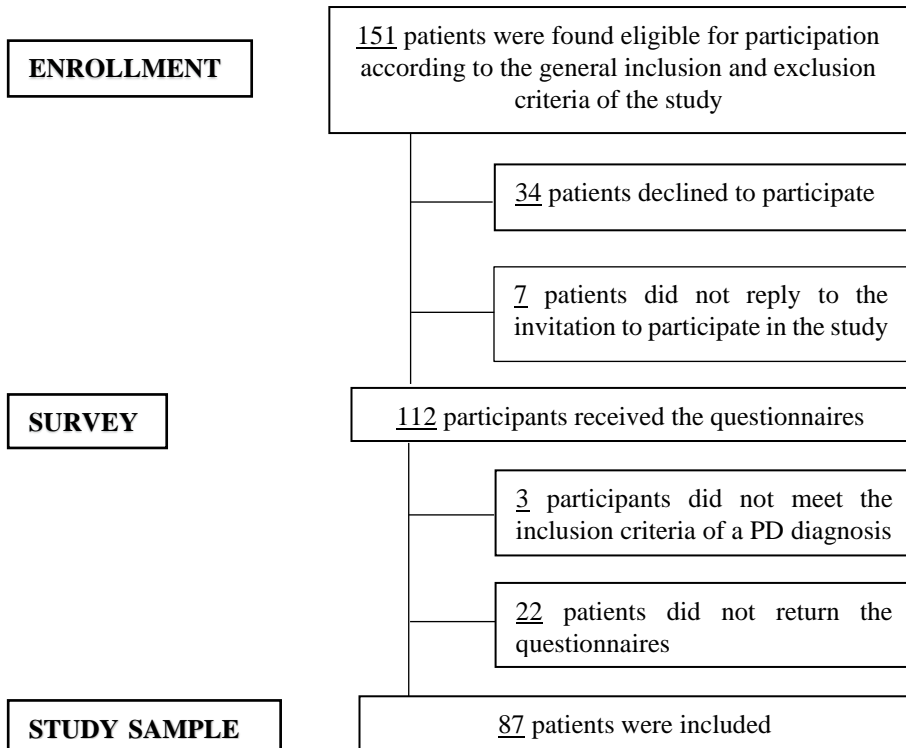
3.2.1. STUDY I AND STUDY II

In study I and study II, patients (N = 87) with a diagnosis of PD according to DSM-5 who fulfilled the general inclusion criteria and had none of the general exclusion criteria were included in the studies.

In study I, AI scores from the clinical sample were compared with preexisting data from a nonclinical community sample (Solbakken et al., 2017). These data were collected as part of a Norwegian study (N = 157). Most of the participants were female (70.7%), with a mean age of 27 years. On average, the respondents had 14.4 years of education, including primary school, secondary school, high school, and college/university. At inclusion, the majority of the participants were students (Solbakken et al., 2017).

3.2.2. STUDY III

In study III, patients (N = 61) with a diagnosis of either APD or BPD according to DSM-5 who fulfilled the general inclusion criteria and had none of the exclusion criteria were included in the study. Patients with co-occurring APD and BPD were excluded.

3.2.3. STUDY IV

In study IV, patients (N = 31) with a diagnosis of APD according to DSM-5 who fulfilled the general inclusion criteria and had none of the exclusion criteria were included in the study. Patients with APD not receiving treatment in specialized groups for APD at one of the abovementioned outpatient facilities were excluded.

Figure 2 illustrates how the patients were selected for participation in each of the studies.

Figure 2. Inclusion of participants in studies I-IV.
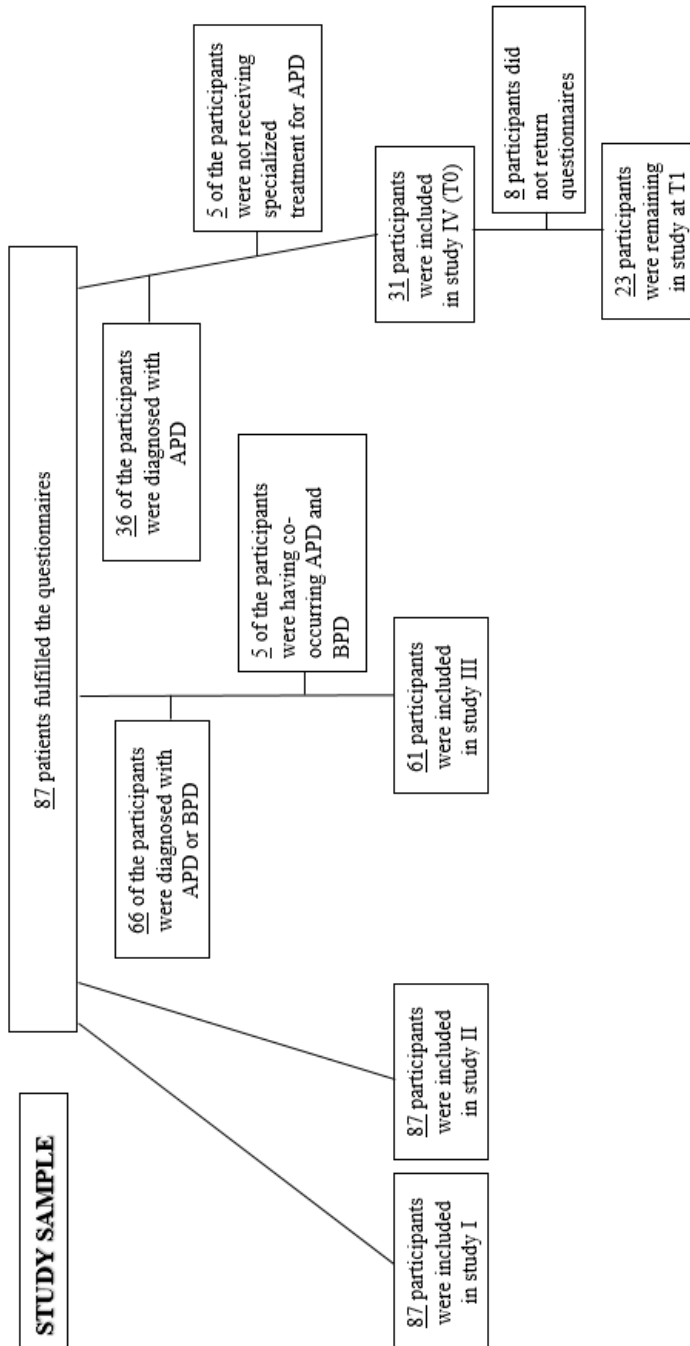
3.3. STUDY DESIGN

A naturalistic design in accordance with daily clinical practice at the outpatient clinics was used. For studies I, II and III, the data were collected cross-sectionally, while for study IV, the data were collected longitudinally.

3.4. MEASURES

The assessment battery included several self-reported and some observer-based measures. In addition to collecting data on emotional dysfunction, the assessment also covered a broad spectrum of psychological and interpersonal functioning along with data on the diagnostics of the participants.

Table 1 provides an overview of the measures included along with a description of how the data were collected and in which studies they were used.

Table 1: Overview of measures and data material included in the study.

Measure	Data On	Study	Data source
Sociodemographics	Characteristics of the patient: - Marital status - Children - Housing situation - Level of education - Prior psychiatric treatment - Physical health - Self-harm - Suicide attempts - Substance abuse	I – V	Self-rated questionnaire data collected using the online platform SurveyXact.
The Affect Integration Inventory	Affect integration: - Global AI - Experience, Expression - Interest, Joy, Fear, Anger, Shame, Sadness, Jealousy, Guilt, and Tenderness	I – IV	Self-rated questionnaire data collected using the online platform SurveyXact
Present State Examination	Symptoms associated with Axis I disorders	I – IV	Semi-structured interview conducted either by psychiatrists or psychologists at the outpatient clinics.
Structured Clinical Interview for DSM-IV Axis II Disorders	Personality dysfunction associated with Axis II disorders	I – IV	Semi-structured interview conducted either by psychiatrists or psychologists at the outpatient clinics.
The Emotion Regulation Questionnaire	Emotion regulation: - Expression suppression - Reappraisal	I	Self-rated questionnaire data collected using the online platform SurveyXact
Toronto Alexithymia Scale 20	Alexithymia: - Difficulty identifying feelings - Difficulty describing feelings - Externally oriented thinking	I	Self-rated questionnaire data collected using the online platform SurveyXact
The Affect Consciousness Interview	Affect integration: - Global ACI - Awareness, Tolerance, Emotional expression, Conceptual expression - Interest, Joy, Fear, Anger, Shame, Sadness, Jealousy, Guilt, and Tenderness	I	Semi-structured interviews conducted by two formally trained psychologists (one being the Ph.D. candidate)

Table 1: Overview of measures and data material included in the study (continued).

Measure	Data on	Study	Data source
WHOQOL-BREF	Quality of life: - Perception of quality of life - Physical quality of life - Psychological quality of life - Social relationships quality of life - Environmental quality of life	II, III, IV	Self-rated questionnaire data collected using the online platform SurveyXact
The Severity Indices of Personality Problems	Maladaptive personality functioning: - Identity Integration, Relational Functioning, Self-control, Social Concordance, Responsibility	II	Self-rated questionnaire data collected using the online platform SurveyXact
Inventory of Interpersonal Problems 64 circumplex version	General and specific interpersonal problems: - IIP-Global - Problems with being: Domineering, Vindictive, Cold, Socially Inhibited, Nonassertive, Overly Accommodating, Self-sacrificing, or Intrusive	II, III, IV	Self-rated questionnaire data collected using the online platform SurveyXact
The Symptom Checklist-90, Revised	Symptom distress and psychopathological symptoms: - Global Severity Index	II, III, IV	Self-rated questionnaire data collected using the online platform SurveyXact

3.4.1. SOCIODEMOGRAPHICS

Descriptive data, including information regarding marital status, offspring, housing situation, education, mental and physical health, self-harm, suicide attempts and substance abuse were collected by commonly used, self-rated questionnaires.

3.4.2. THE AFFECT CONSCIOUSNESS INTERVIEW

The ACI (Monsen et al., 2008) is a semistructured interview developed to assess the integration of affects. Scores are generated by trained raters using the Affect Consciousness Scales (ACSs), which specify criteria for a quantitative rating of the responses to the questions of the ACI. The most recent version of the ACI includes 11 discrete affects. For each affect, five integrating aspects are evaluated:

1) Eliciting stimuli or context of affect activation.
2) Awareness refers to the capacity for recognizing and paying attention to the bodily and mental cues that are present during the activation of an affect.
3) Tolerance refers to the intrapsychic processes of accepting, comprehending and containing affect activation. Three areas are of interest: A) the impact of an affect—how does the activation of an affect impact the individual? B) affect coping—which strategies (voluntary and involuntary) does the individual apply to cope with affect activation? C) signal function (the capacity for utilizing affects as informational signals)—does affect activation convey meaningful information about the world, self and/or others?
4) Emotional expression refers to the capacity for nonverbally communicating and expressing affects clearly and in a nuanced fashion via bodily postures, tone and pitch of voice, facial expressions, etc.
5) Conceptual Expression refers to the capacity for verbal avowal, nuanced articulation and using clear semantic descriptions of an affect.

All integrating aspects are rated on an observer-based nine-point scale for each of the affects. A score of one represents the lowest possible rating, while a score of nine represents the highest. Scores of four or less are viewed as clinically significant (Monsen et al., 2008; Solbakken, Hansen, & Monsen, 2011).

As specified in the ACSs, it is possible to calculate AC scores on three levels: Global AC (a mean score based on all aspects of integration across all affects), aspect-specific AC (mean calculated across all affects for each aspect of integration, e.g., Tolerance) and affect-specific AC (mean score for each affect measured across the four integrating aspects, e.g., Anger). Previous studies have demonstrated good psychometric properties for the ACI, both in clinical samples of adults and for a child-adapted version of the interview (Lech et al., 2008; Monsen et al., 1996; Solbakken, Hansen, Havik, et al., 2011; Taarvig et al., 2015). Additionally, the usefulness of the conceptualization has been established in clinical settings (e.g., Choi-Kain &

Gunderson, 2008; Gude et al., 2001; Lech et al., 2012; Normann-Eide et al., 2013; Taarvig et al., 2016; Waller & Scheidt, 2006).

3.4.3. THE AFFECT INTEGRATION INVENTORY

The AII (Solbakken et al., 2017) is a self-report instrument designed for measuring the integration of the nine discrete affects: Interest, Joy, Fear, Anger, Shame, Sadness, Jealousy, Guilt, and Tenderness (Solbakken et al., 2017). The AII contains 112 statements about perceived awareness (e.g., item 62: *It is difficult for me to distinguish between anxiety, fear, and other unpleasant feelings I may have*), tolerance (e.g., item 21: *I try to suppress my anger*), and expression (e.g., item 48: *I can apologize when it is needed*) for each of the affects. Items are phrased so they address the level of adaptive experience or adaptive expression of the discrete affects. Therefore, the respondent usually experiences or expresses each affect. Eighty-two items tap into the capacity for experience, while 30 items involve the capacity for expression. Each item is rated on a 10-point Likert scale ranging from *does not fit at all* (0) to *fits perfectly* (9). Higher scores constitute higher levels of AI.

For the present study, scores were computed on three levels:

1) Global AI – an overall mean score across all items.
2) Experience and Expression – a mean score for the items tapping the experience aspect of affects and a mean score for the items tapping the expression aspect of affects.
3) Discrete affects – a mean score for the items tapping the discrete affects (e.g., Shame, Interest).
4) Prototypical modes of experience – a mean score for items tapping the tendency for being driven by or lacking access to specific affects (e.g., Driven by Jealousy, Lacking access to Tenderness).

Building on the same theoretical foundation as the ACI, the AII was developed as a more easily accessible alternative. The instruments have several similarities but differ in that ACI scores for discrete affects are specified within four aspects (awareness, tolerance, emotional, and conceptual expression), while AII scores for discrete affects are specified within two domains (experience and expression). Thus, in the AII, the aspects of awareness and tolerance were merged into the experience component, and the aspects of emotional and conceptual expression were merged into the expression component. This merging is in accordance with the superordinate organization specified in the ACSs (Monsen et al., 2008).

The AII also comprises additional scales for measuring emotional dysfunction in terms of characteristic modes of experiencing affects, i.e., whether one tends to experience too little or too much (Greenberg & Bolger, 2001). In AII terms, these processes are defined as either the tendency to be driven by or experience lack of access to, for example, Sadness. Thus, high scores on the *Driven by* scales suggest affective underregulation, which carries an increased risk of being overwhelmed by

the affect, losing control over the affective expression, acting out, and/or engaging in impulsive behavior. On the other hand, low scores on the *Access to* scales indicate affective overregulation. An individual with low access to the adaptive properties of affects would seem constricted and struggle with understanding the motivational aspect of discrete affects.

Previous studies have demonstrated the validity of scores from the AII in nonclinical samples (Solbakken et al., 2017; Solbakken & Monsen, 2021).

3.4.4. PRESENT STATE EXAMINATION

The present state examination (PSE; SCAN Advisory Committee, 2002) is a semistructured interview intended to provide information to identify and classify symptoms compatible with axis I psychopathology. The PSE involves a systematic and standardized checklist of items assessing the individual's mental state throughout the last month. Analyses of the collected data allow it to be transformed into a series of symptom or syndrome scores indicating the presence of specific psychiatric disorders.

3.4.5. STRUCTURED CLINICAL INTERVIEW FOR DSM-IV AXIS II DISORDERS

The Structured Clinical Interview for DSM-IV axis II disorders (SCID-II; First, 1997) is a semistructured diagnostic interview designed for assessing DSM axis II disorders. The SCID-II has been widely used for both research purposes and in clinical settings. With the introduction of the DSM-5, the SCID-II was replaced by the Structured Clinical Interview for DSM-5-PD (SCID-5-PD: First et al., 2015) in 2016 (translated into Danish in 2017). However, since the DSM-IV PD criteria were not changed in the DSM-5, the SCID-5-PD interview questions essentially remained unchanged.

3.4.6. THE EMOTION REGULATION QUESTIONNAIRE

The Emotion Regulation Questionnaire (ERQ: Gross & John, 2003) measures the use of two common emotion regulation strategies: cognitive reappraisal and expression suppression. The ERQ is a brief self-reported scale consisting of 10 items: four items relate to Expression Suppression (e.g., "*I control my emotions by not expressing them*"), and six items relate to reappraisal (e.g., "*I control my emotions by changing the way I think about the situation I'm in*". Each item is rated on a seven-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). The ERQ has previously been shown to have adequate psychometric properties (Gross & John, 2003; Preece et al., 2020).

3.4.7. THE TORONTO ALEXITHYMIA SCALE 20

The TAS 20 (Bagby et al., 1994) is one of the most commonly used evaluations of alexithymia. This self-reported scale comprises 20 items that are rated on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). The instrument yields one total and three subscale scores. Seven items relate to the Difficulty Identifying Feelings subscale (e.g., "*I am often confused about what emotion I am feeling*"), five items relate to the Difficulty Describing Feelings subscale (e.g., "*It is difficult for me to reveal my innermost feelings, even to close friends*"), and eight items relate to the Externally Oriented Thinking subscale (e.g., "*I prefer to analyze problems rather than just describe them*"). Studies on the validity and reliability of the TAS 20 have been ambiguous, and some concerns have been raised (Kooiman et al., 2002); however, several studies have supported the psychometric properties of the instrument (Bagby et al., 2020; Cleland et al., 2005; Preece et al., 2018).

3.4.8. WHOQOL-BREF

The quality of life was measured by the WHOQOL-BREF (World Health Organization. Division of Mental Health, 1996), a self-rated questionnaire consisting of 26 questions. Twenty-four of the items are converted into four domains of well-being: Physical, Psychological, Social relationships and Environmental. Two items regard the individuals' views on the overall quality of life and general health. Items are rated on a five-point Likert scale, and low scores indicate a poorer perceived quality of life. Studies of the psychometrics of the instrument have reported good to excellent properties (Skevington et al., 2004; Skevington & McCrate, 2012).

3.4.9. THE SEVERITY INDICES OF PERSONALITY PROBLEMS

The SIPP-118 (Andrea et al., 2007) is a self-report questionnaire that taps into core elements of maladaptive personality functioning. The theoretical assumption underlying SIPP-118 is that personality functioning can be placed on a continuum between maladaptive and adaptive, and PDs are characterized by deficient levels of adaptive capacities (dimensional approach). Thus, the SIPP-118 addresses components of personality functioning across specific PDs and personality styles.

The SIPP-118 consists of 118 items that can be converted into 16 facets and organized into five higher-order domains (Andrea et al., 2007). The higher-order domains include:

1) The Identity Integration domain, which addresses the experience of identity coherence and the experience of oneself as stable, integrated, and purposive.
2) The Relational Functioning domain, which addresses the capacity to create and maintain genuine caring long-term relationships and the capacity to communicate personal experiences and engage with the experiences of others.

3) The Self-control domain addresses the capacity to tolerate, use, and control emotions and impulses.
4) The Social Concordance domain addresses the capacity to withhold aggressive impulses and the capacity to cooperate with others.
5) The Responsibility domain addresses the capacity to set and achieve realistic goals.

Each of the 118 statements is rated on a four-point Likert scale ranging from *I fully disagree* (1) to *I fully agree* (4). High scores suggest more adaptive functioning. Previous studies on the psychometrics of the SIPP-118 have been somewhat ambiguous (Bastiaansen et al., 2013); however, three studies have reported satisfactory psychometric properties, including cross-national consistency (Arnevik et al., 2009; Feenstra et al., 2011; Verheul et al., 2008).

3.4.10. THE SYMPTOM CHECKLIST-90, REVISED

The Symptom Checklist-90, Revised (SCL-90-R: Derogatis, 1994) is an established self-reported scale to assess symptom distress and psychopathological symptoms. Across nine specified dimensions and three global indices, the SCL-90-R measures current levels of symptom distress. From the perspective of the last seven days, the intensity of 90 symptoms is rated on a five-point Likert scale ranging from *not at all* (0) to *very much* (4). The Global Severity Index (GSI) is calculated as an average score across all 90 items, indicating the overall level of current distress. The GSI is viewed as a valid indicator of symptom distress (Hill & Lambert, 2004). Studies of normative samples have established a cutoff for the GSI at 0.97 (confidence band: 0.76-1.19), and higher scores are regarded as an indicator of more severe psychopathology (Tingey et al., 1996).

3.4.11. THE INVENTORY OF INTERPERSONAL PROBLEMS 64 CIRCUMPLEX VERSION

The Inventory of Interpersonal Problems 64 circumplex version (IIP-64: Horowitz et al., 2000) was used to assess the level of general and specific interpersonal problems. Two types of phrasing are used in the IIP-64. The first 39 items begin with *It is hard for me to….*, and the last 25 items tap into *things that you do too much*. Additionally, the items are rated on a five-point Likert scale ranging from *not at all* (0) to *very much*. The IIP-64 yields one overall and eight octant subscale scores. The latter are organized in a circular order and constitute the interpersonal circumplex (Horowitz et al., 2000). The total score (IIP-Global) serves as an indication of the general level of relational difficulties, and each of the eight octant scores represents specific and systematically interrelated types of interpersonal problems with being: Domineering, Vindictive, Cold, Socially Inhibited, Nonassertive, Overly Accommodating, Self-sacrificing, or Intrusive. The IIP-Global has consistently been linked to symptom severity and negative affectivity (Tracey et al., 1996), and the circumplex structure has revealed good construct validity in terms of fit and patterns of convergent-discriminant associations with external correlates (Monsen et al., 2006).

3.5. PROCEDURES

The AII was translated from Norwegian to Danish by two experienced clinicians (one being the Ph.D. student). All items of the questionnaire were translated independently. Afterward, they were compared and discussed, reaching a shared consensus regarding the wording of the items. In case of doubt, the phrasing of the specific items was discussed with the original author of the instrument (Ole André Solbakken), who also approved the final translation.

PSE (SCAN Advisory Committee, 2002) and SCID-II (First, 1997) interviews were conducted to address the axis I and axis II diagnostics of the patient in studies I to IV. Both interviews were led by psychiatrists or psychologists who were thoroughly trained in the use of the instruments. The final diagnostics of the patient were discussed and determined at recurrent meetings in the treatment team.

Data on demographics, emotional dysfunction, symptom distress, interpersonal problems, personality functioning, and perceived quality of life were collected with self-reported measures using the online platform SurveyXact. After agreeing to participate in the study, the patient was issued with a unique login that was forwarded by e-mail and linked to the survey. Due to the length of the questionnaire, the participant was instructed that it was not necessary to complete the questionnaire in one sitting. Hence, partially completed questionnaires were saved and entered as many times as needed. If preferred, the participant also had the opportunity to receive the questionnaires in a paper version and return them after completion. Finally, the participant was informed that support in completing the questionnaires was available by telephone or e-mail. Furthermore, if the questionnaires were not completed, one reminder was sent by e-mail.

Since the purpose of conducting the ACI was to compare scores with corresponding scores from the AII, only the nine comparable affects were assessed. The interviews were recorded by video and scored according to the criteria specified in the ACSs (Monsen et al., 2008). Interviews and ratings were conducted by two experienced clinical psychologists (one being the Ph.D. candidate), who had undergone extensive formal training. The raters received systematic supervision and feedback on their interviews by one of the authors of the revised ACI and ACSs (Ole André Solbakken). Ten of the interviews were double rated. In terms of procedures specified in the ACSs (Monsen et al., 2008) and to simplify interpretation of the comparability of AII and ACI scores, Awareness and Tolerance were averaged into an ACI-Experiencing score, while Emotional and Conceptual Expression were averaged into an ACI-Expression score.

3.6. ETHICS

The study was evaluated by the North Denmark Region Committee on Health Research Ethics. However, due to the nature of the research, no approval was needed.

Additionally, the study was registered by the Danish Data Protection Agency (2019-017816).

To ensure that the patients were fully informed about the purpose of the study, the implications of participation, including gains and risks, were provided as written and oral information prior to obtaining written consent. Additionally, all patients were informed that participation was voluntary, that they were guaranteed anonymity and that they could withdraw their consent at any time without any consequences. Furthermore, patients were informed that nonparticipation in the study would not influence their treatment in any way. The study was carried out in accordance with the Declaration of Helsinki (World Medical Association, 2013).

3.7. STATISTICAL ANALYSES

For all studies, the descriptive statistics were summarized as counts and percentages for categorical variables and means and standard deviations for continuous variables.

In study I, the internal consistency of AII scores was assessed by Cronbach´s alpha, and the internal structure was examined by CFA. However, since CFAs are sensitive to the ratio of participants and items included, a set of three representative indicators for each affect were computed (Furr, 2011). Each indicator comprised a mean score across a subset of items sampling the complete construct domain of the affect in question. The competing theoretical models were compared using the root mean square error of approximation (RMSEA) as an index of fit. The chi-squared, Akaike's information criterion (AIC), Bayesian information criterion (BIC), comparative fit index (CIF), and incremental fit index (IFI) were reported.

Scores for Global AI, Experience and Expression were compared to the external measures of TAS 20, ERQ and ACI in study I by using Pearson's correlation coefficient (denoted by r in the following). Their 95% CIs were computed using z-transformation, and the associations were visualized using scatterplots. To demonstrate convergent and discriminant validity, Z-tests were performed to examine the statistical significance of differences in correlations. To investigate the patterns of correlations in greater detail, subanalyses were conducted by calculating the correlations on the nonaggregated subscales for ACI (Awareness, Tolerance, Emotional Expression and Conceptual Expression).

To compare the distribution of AII scores between the clinical and nonclinical samples in study I, a Wilcoxon rank-sum test was used, and the distributions were visualized in a boxplot. A global cutoff was calculated using the maximum Youden´s J index (J = sensitivity + specificity – 1) to define a threshold between the clinical and nonclinical cases. The cutoff point was assessed by specificity and sensitivity. Finally, Youden´s cutoffs were calculated for each subscale to distinguish potential dysfunctional scores.

In study II, the associations between Global AI, Experience, and Expression scores as explanatory variables and the GSI and IIP-Global scores as dependent variables were analyzed using six separate simple linear regressions. Pearson correlation coefficients were calculated for the IIP-64 octants and each of the affects assessed by the AII. The eight correlation coefficients computed for each affect were plotted against the IIP-64 octants, and the corresponding theoretical sinusoidal curve from Solbakken et al. (2017) was added to the plot. Pearson correlation coefficients were further used to study the associations between the AII and the SIPP-118 domains. The results were shown as heatmaps.

In study I and study II, correlation magnitudes were interpreted according to Cohen´s (1988) classifications, i.e., correlation coefficients on the order of 0.10 are small, those at approximately 0.30 are medium, and those at approximately 0.50 are large in terms of the magnitude of effect sizes.

In study III, the differences between groups of patients with either APD or BPD in relation to AII scores and the *Access to* and *Driven by* scales were examined using t-tests assuming unequal variances for the two groups. For the variables where no difference between the groups was hypothesized, two-tailed p-values were reported. For those where the BPD score was hypothesized to be higher than the APD score, upper-tail p-values were reported instead.

To examine the differences between scores at baseline and at the 6-month follow-up in study IV, scores were analyzed using a paired sample t-test per variable, presenting it and the corresponding Cohen's d with 95% CI. Three simple linear regressions were used to examine the relationship between baseline AI (Global, Expression or Experience) and changes in AI from the baseline to 6 months. Sensitivity analyses conducted by removing outliers. The relationship between baseline AI scores (Global, Experience, or Expression) and change in scores from WHOQOL-BREF or change in IIP-Global was assessed by Pearson correlation coefficients, as was the examination of whether changes in AI (Global, Experience, or Expression) between the baseline and 6 months were related to changes in scores from WHOQOL-BREF or in IIP-Global.

To evaluate the between-group differences in study III and the effect sizes in study IV, Cohen's d was computed and interpreted according to convention in order d = .20 - .50, small; d = .50 - .80, moderate; d > .80, large (Cohen, 1988).

The chosen significance level was 5% for all the analyses. The CFAs were conducted with the IBM Amos module for SPSS version 26.0 (IBM Corp, 2019), while the rest of the analyses in study I and in study IV were performed using Stata 16 (StataCorp., 2019). The analyses in studies II and III were performed using Stata 14 (StataCorp, 2015).

CHAPTER 4. RESULTS

In this chapter, the main results from studies I-IV and corresponding papers are presented. The findings are presented under thematic headlines. The figures and tables are adapted from studies I-IV and have been edited and adjusted to fit into the format of the thesis as needed.

4.1. CLINICAL CHARACTERISTICS OF THE STUDY SAMPLES

In study I (Paper I) and study II (Paper II), 87 patients with PD were included. Table II displays the clinical characteristics of the sample. The majority of participants were female. Additionally, slightly more than half were married or cohabiting (57.6%), while only 36.5% of the participants had completed high school.

In study III (Paper III), a total of 61 patients constituted the study sample. Thirty-six of the participants were diagnosed with APD, while 25 were diagnosed with BPD. As shown in Table 2, the participants diagnosed with BPD were younger and all were females, while 75% of the participants in the APD group were females. Marriage and cohabitation were more common among patients with APD (61.8%) than in the BPD group (48.0%). Additionally, three times as many had completed high school in the APD group (44.1%) compared to the BPD group (16.0%). For ratings of perceived quality of life, scores in the two groups were comparable apart from scores in the social relationship domain, where the APD group scored 1.2 points lower than the BPD group. Self-harm was more common in the BPD group, while suicide attempts, substance abuse, eating disorders, and behavioral disorders were rare in both groups (below 8.0%).

Thirty-one patients with APD who received specialized treatment for their disorder were included in study IV (Paper IV). Of these, 23 participants completed the data collection at the 6-month follow-up. As illustrated in Table 2, the majority of the included participants were female (74.2%). Nearly half had completed high school (48.3%) and were living in a cohabitation relationship (62.1%). Substance abuse, eating disorders and behavioral disorders were rare among the participants (below 10%).

Table 2: Clinical characteristics of the study samples in studies I-IV.

	Study I and study II N=87		Study III N=61 APD		Study III N=61 BPD		Study IV N=31	
	N		N	APD	N	BPD	N	
Total number of participants include in the study	N=87		N=61				N=31	
Clinical characteristics								
Female[+]	87	74 (85.1%)	36	28 (77.8%)	25	25 (100.0%)	31	23 (74.2%)
Age[*]	86	31.7 (9.5)	35	31.6 (8.7)	25	27.8 (6.9)	30	32.2 (9.0)
Self-harm (within the last three months)[+]	85	22 (25.9%)	34	4 (11.8%)	25	9 (36.0%)	29	3 (10.3%)
Suicide attempts (within the last three months)[+]	85	< 4%	36	< 8%	25	< 8%	29	0
Mood disorder[+]	85	27 (31.0%)	36	11 (30.6%)	25	5 (20.0%)	31	8 (25.8%)
Anxiety disorder[+]	85	21 (24.1%)	36	10 (27.8%)	25	5 (20.0%)	31	8 (25.8%)
Substance abuse[+]	85	4 (4.6%)	36	< 8%	25	< 8%	31	<7%
Eating disorder[+]	85	3 (3.4%)	36	< 8%	25	< 8%	31	<7%
Behavioral disorder[+]	85	4 (4.6%)	36	< 8%	25	< 8%	31	<7%
Primary PD diagnosis[+]								
Borderline		30 (34.5%)		-		25		
Avoidant		36 (41.4%)		36		-		31
Mixed		15 (17.2%)		-		-		-
Other [a]		6 (6.9%)		-		-		-
No. of PD-diagnoses[*]	87	1.4 (0.6)	36	1.4 (0.6)	25	1.4 (0.5)	31	1.4 (0.6)
GSI[*]	86	1.8 (0.6)	36	1.8 (0.6)	25	1.9 (0.6)	31	1.8 (0.6)
IIP-Global	82	1.9 (0.5)	35	2.0 (0.5)	24	1.7 (0.5)	30	2.0 (0.4)
WHOQOL-BREF quality of life perception[*]	86	2.4 (0.9)	36	2.3 (0.8)	25	2.6 (1.0)	31	2.2 (0.9)
WHOQOL-BREF health perception		-	36	2.3 (0.9)	25	2.5 (1.2)		-
WHOQOL-BREF physical health domain		-	36	10.0 (2.0)	25	9.9 (1.9)		-
WHOQOL-BREF psychological health domain		-	36	9.0 (1.6)	25	9.5 (2.7)		-
WHOQOL-BREF social relationships domain		-	36	9.8 (2.9)	25	11.0 (3.5)		-
WHOQOL-BREF environment domain		-	36	11.7 (1.9)	25	11.8 (2.5)		-

Note. [*]: mean (standard deviation); [+]: count (%); [a]: the PD-diagnosis group "other" consists of obsessive-compulsive PD, narcissistic PD and paranoid PD

4.2. THE PSYCHOMETRIC PROPERTIES OF THE AII

AII scores from the clinical sample, along with Cronbach´s alpha values, are shown in Table 3. The scores were internally consistent, with alphas ranging from fair to excellent (.70 being the lowest and .94 being the highest) (Paper I).

Table 3. Descriptive statistics and internal consistency of the AII scores (Paper I).

	Mean	SD	[Min, Max]	Cronbach's alpha
Global AI	3.74	1.02	[1.59, 6.96]	0.94
Experience	3.70	0.99	[1.15, 6.52]	0.91
Expression	3.79	1.47	[0.61, 8.13]	0.91
Interest	4.40	1.47	[1.50, 7.58]	0.81
Joy	3.60	1.67	[0.75, 8.58]	0.84
Fear	3.06	1.29	[0.69, 6.08]	0.78
Anger	3.35	1.45	[0.00, 7.69]	0.78
Shame	3.10	1.38	[0.92, 7.17]	0.77
Sadness	3.13	1.27	[0.50, 6.67]	0.70
Jealousy	3.99	2.40	[0.15, 8.85]	0.92
Guilt	4.39	1.48	[1.08, 8.42]	0.73
Tenderness	4.62	1.85	[0.77, 8.92]	0.86

Note. N = 87. SD standard deviations. AI Affect Integration.

By CFA, the fit of three competing theoretical models underpinning the structure of the AII were examined. The results revealed that among the different models, the discrete affect model was superior in terms of fit (relative fit indices: χ^2 = 333.31, AIC = 585.31, BIC = 706.96, absolute fit indices: RMSEA = 0.048, IFI = 0.957, CFI = 0.955). This was followed by the integration of the pleasant vs. unpleasant affects model (relative fit indices: χ^2 = 888.92, AIC = 1040.92, BIC = 1114.30, absolute fit indices: RMSEA = 0.141, IFI = 0.541, CFI = 0.532) and with the general AI factor model being the least suitable (relative fit indices: χ^2 = 942.21, AIC = 1104.21, BIC = 1182.42, absolute fit indices: RMSEA = 0.149, IFI = 0.495, CFI = 0.484). See Paper I and corresponding supplementary materials in Appendix C for details on the model specification and factor loadings of the different models.

In Table 4, the hypotheses and patterns of convergent and discriminant correlations between the AII and other relevant constructs are shown[1]. As expected, the correlations between the AII scales and the TAS 20 scales were all negative (Paper I).

---

[1] The patterns of correlation are supported by visualization in scatter plots included in Appendix C. Supplementary material study I.

In the same manner, the Difficulty Identifying Feelings subscale was more strongly correlated with Experience (r = -0.69) than with Expression (r = -0.52). This difference in correlation magnitude was statistically significant (z = 2.48, p = .007). Additionally, the Externally Oriented Thinking subscale generally had lower associations with Global AI, Experience and Expression (r = -0.49, r = -0.43 and r = -0.47, respectively) than the other TAS 20 subscales However, unlike our expectations, the strength of correlation with the Difficulty Describing Feelings scale was similar for AII Experience (r = -0.60) and AII Expression (r = -0.63) with no statistically significant difference in the correlation magnitude (Paper I).

According to expectations, a small association was detected between Global AI and reappraisal (r = 0.13 with CI = [-0.09, 0.34]). Additionally, only small correlations were observed between Reappraisal and Experience (r = 0.13 with CI = [-0.10, 0.34]) and Expression (r = 0.12 with CI = [-0.11, 0.33]) scales of the AII (Paper I). Expression Suppression was moderately and moderately to strongly correlated with Global AI (r = -0.38) and Expression; r = -0.49), while the correlation with Experience was small (r = -0.26). As hypothesized, Expression Suppression was more strongly correlated with AII Expression than with AII Experience and the difference in correlation magnitude was statistically significant (z = 2.77, p = .003). Contrary to our expectation, the correlation between Reappraisal and Experience was not stronger than that between Reappraisal and Expression (Paper I).

Somewhat surprisingly, the ACI and the AII did not correlate as strongly as anticipated. As shown in Table 4, the correlations between corresponding Expression scores reached expectations by being strongly associated. However, for the relationship between ACI Experience and the AII scales, only medium correlations with wide confidence intervals were found (Global AI: r = 0.27 with CI = [0.01, 0.49]; Experience: r = 0.25 with CI = [0.00, 0.48]; and Expression: r = 0.25 with CI = [-0.01, 0.47]) (Paper I). Further exploratory analyses revealed unexpectedly small correlations between the Awareness aspect of the ACI and the AII scores (range: 0.06 –0.15). It appears that these small correlations impacted the results by attenuating correlations for the superordinate ACI Experience scale. Thus, after removing the Awareness component from the ACI Experience score, the correlations with Global AI increased to 0.34, and Experience to 0.37, while the correlation with AII Expression was reduced to 0.23 (Paper I). Additionally, when examining ACI Expression in further detail, the emotional and conceptual expression aspects displayed almost identical correlations with the AII scales. Thus, the merging of those scores did not have any consequences for the relationship between the ACI and the AII (Paper I).

Finally, according to expectations, the AII was not associated with age (r = 0.02 for Global AI) or sex (r = -0.06 for Global AI) (Paper I).

Table 4. The hypotheses and correlations between AII scores and external measures of alexithymia, emotion regulation, affect integration, sex and age.

Measure/sub-scale	Global AI	Experience	Expression	Hypotheses
TAS 20 Global	-0.73 [-0.82 ,-0.62]	-0.69 [-0.79 ,-0.56]	-0.63 [-0.75 ,-0.49]	**A strong negative relationship between the Global AI, Experience, Expression and the TAS 20 subscales**
TAS 20 DDF	-0.67 [-0.77 ,-0.54]	-0.60 [-0.72 ,-0.45]	-0.63 [-0.74 ,-0.48]	The Difficulty Describing Feelings subscale would correlate more strongly with Expression than with Experience
TAS 20 DIF	-0.69 [-0.78 ,-0.55]	-0.69 [-0.78 ,-0.56]	-0.52 [-0.66 ,-0.34]	**The Difficulty Identifying Feelings subscale would correlate more strongly with Experience than with Expression**
TAS 20 EOT	-0.49 [-0.63 ,-0.31]	-0.43 [-0.59 ,-0.24]	-0.47 [-0.62 ,-0.28]	The Externally Oriented Thinking subscale would have weak or moderate correlations with AII scores
ERQ Reappraisal	0.13 [-0.09 ,0.34]	0.13 [-0.10 ,0.34]	0.12 [-0.11 ,0.33]	**AII scores would be less strongly correlated with Reappraisal than with the Expression Suppression** Weak to moderate relationship between Global AI and Reappraisal
ERQ Expression Suppression	-0.38 [-0.56 ,-0.17]	-0.26 [-0.46 ,-0.04]	-0.49 [-0.64 ,-0.30]	**A strong negative relationship between Expression Suppression and Expression** A stronger correlation between Reappraisal and Experience than with Expression **A stronger correlation between Expression Suppression and Expression than with Experience**
Global AC	0.42 [0.18 ,0.61]	0.38 [0.14 ,0.58]	0.41 [0.17 ,0.60]	Strong correlations between corresponding scores on the AII and ACI
ACI-Experience	0.27 [0.01 ,0.49]	0.25 [0.00 ,0.48]	0.25 [-0.01 ,0.47]	
ACI-Expression	0.51 [0.30 ,0.68]	0.46 [0.24 ,0.64]	0.52 [0.30 ,0.68]	
Age	0.02 [-0.19 ,0.23]	0.08 [-0.14 ,0.29]	-0.07 [-0.28 ,0.14]	**Small or negligible correlations between age, sex and AII scores**
Sex	-0.06 [-0.27 ,0.15]	-0.11 [-0.32 ,0.10]	0.05 [-0.16 ,0.26]	

Note. N = 86 for TAS 20. N = 79 for ERQ. N = 60 for ACI. N = 86 for age. N = 87 for sex. AI Affect Integration. TAS 20 Toronto Alexithymia Scale 20. DDF Difficulty Describing Feelings. DIF Difficulty Identifying Feelings. EOT Externally Oriented Thinking. ERQ Emotion Regulation Questionnaire. ACI Affect Consciousness Interview. r TAS 20 DIF – experience > r TAS 20 DIF – expression (z = 2.48, p = .007). r ERQ Expression Suppression – experience < r ERQ Expression Suppression – expression (z = 2.77, p = .003). Hypotheses marked in bold were confirmed.

As shown in Table 5, it was demonstrated that AII scores can differentiate between clinical and nonclinical groups in a systematic and statistically significant way.

Table 5. Median, interquartile range and difference in scores between the clinical and nonclinical respondents (study I).

	Clinical, median [IQR]	Nonclinical, median [IQR]	p-value (Wilcoxon)
Global AI	3.56 [3.04, 4.46]	5.71 [5.10, 6.33]	<0.001
Experience	3.50 [3.01, 4.40]	5.73 [5.10, 6.35]	<0.001
Expression	3.68 [2.68, 4.84]	5.68 [4.84, 6.65]	<0.001
Sadness	3.08 [2.08, 4.08]	5.58 [4.58, 6.25]	<0.001
Anger	3.15 [2.31, 4.15]	5.77 [4.88, 6.50]	<0.001
Tenderness	4.62 [3.08, 5.85]	6.46 [5.00, 7.46]	<0.001
Guilt	4.33 [3.25, 5.42]	5.83 [4.92, 6.75]	<0.001
Fear	2.92 [2.00, 3.85]	5.08 [4.08, 6.19]	<0.001
Shame	2.92 [2.25, 3.83]	5.17 [4.42, 5.75]	<0.001
Interest	4.08 [3.42, 5.50]	6.17 [5.33, 6.92]	<0.001
Joy	3.33 [2.42, 4.67]	6.42 [5.00, 7.71]	<0.001
Jealousy	3.69 [1.85, 6.08]	5.81 [4.62, 6.92]	<0.001

Note. N = 87 for the clinical group. N = 157 for the nonclinical group. IQR Interquartile range. AI Affect Integration.

To further elaborate on the distinction between groups, an empirically derived cutoff for Global AI was calculated using Youden's J index. As shown in Table 6, the cutoff was calculated at 4.22. The fairly high and balanced values for sensitivity and specificity suggested that it was possible to establish a global cutoff, which in most cases can reliably differentiate between clinical and nonclinical responders (Paper I).

Table 6. Cut-point calculations and the related sensitivity, specificity and positive predictive values (Paper I).

	Cut point	PPV	Sensitivity	Specificity
Global AI (Youden)	**4.22**	**0.90**	**0.74**	**0.96**
Experience	4.79	0.76	0.85	0.85
Expression	4.92	0.63	0.80	0.73
Sadness	4.38	0.72	0.83	0.82
Anger	4.19	0.80	0.76	0.89
Tenderness	6.10	0.50	0.80	0.56
Guilt	4.38	0.70	0.53	0.87
Fear	3.88	0.67	0.76	0.80
Shame	4.21	0.71	0.84	0.81
Interest	4.71	0.74	0.64	0.87
Joy	4.71	0.68	0.78	0.80
Jealousy	3.73	0.70	0.52	0.88

Note. N = 87 for the clinical group. N = 157 for the nonclinical group. The cutoff point that separates the clinical and nonclinical populations is marked in bold. For the affect integrative aspects and the discrete affects, clinically useful thresholds were calculated to further separate the groups on each subscale.

4.3. AI AND THE SEVERITY OF PSYCHOPATHOLOGY

Low levels of AI were strongly associated with high levels of symptom distress and relational difficulties. For the GSI, the standardized regression coefficients (equivalent to Pearson´s r correlations) were -.57 (95% CI [-.74, -.38]) for Global AI (r^2 = .33), -.61 (95% CI [-.79, -.44]) for Experience (r^2 = .37), and -.32 (95% CI [-.52, -.11]) for Expression (r^2 = .10). For IIP-Global, the standardized regression coefficients were -.62 (95% CI [-.80, -.44]) for Global AI (r^2 = .38), -.61 (95% CI [-.79, -.44]) for Experience (r^2 = .37), and -.49 (95% CI [-.68, -.29]) for Expression (r^2 = .24) (Paper II).

The correlations between Global AI, Experience, and Expression and the SIPP-118 domains are shown in Figure 3 (left panel). All correlations were positive and ranged from 0.007 (negligible association) to 0.73 (very strong association) (Paper II). Identity Integration and Relational Functioning were strongly associated with Global AI, Experience, and Expression. Self-control was strongly associated with Global AI and Experience but only moderately related to Expression. Social Concordance was moderately associated with Global AI, Experience, and Expression. Finally, Responsibility was moderately associated with Global AI and Experience but uncorrelated with Expression (Paper II).

Figure 3. Heatmaps of correlations between SIPP-118 domains and AII scores (left) and discrete affects (right) (Paper II).
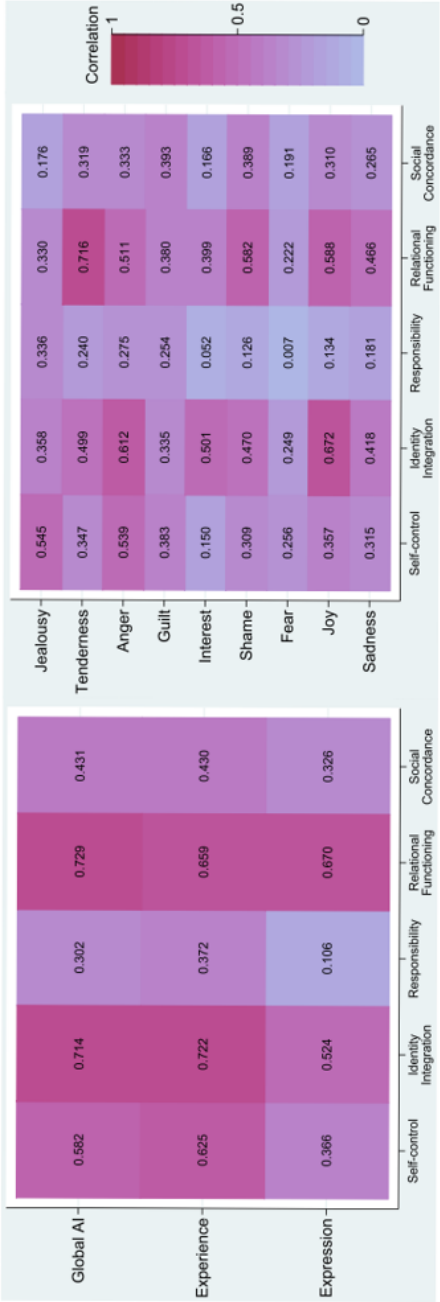
Note. The colors of the heatmap indicate the strength of the specific correlations. Thus, the deeper the shade of purple the stronger the correlation. N=82.

The correlations between AII scores for discrete affects and the SIPP-118 domains are shown in Figure 3 (right panel). Identity Integration was strongly or moderately to strongly correlated with Tenderness, Anger, Interest, Shame, Sadness, and Joy, while it was moderately correlated with Jealousy and Guilt and weakly correlated with Fear. Relational Functioning was strongly or moderately to strongly correlated with Tenderness, Anger, Shame, Sadness, and Joy, moderately correlated with Jealousy, Guilt, and Interest, and weakly correlated with Fear. Self-control was strongly correlated with the integration of Jealousy and Anger, moderately correlated with Tenderness, Guilt, Shame, Joy, and Sadness, and weakly correlated with Interest and Fear. Social Concordance was moderately correlated with Tenderness, Anger, Guilt, Shame, and Joy and weakly correlated with Jealousy, Interest, Fear, and Sadness. Finally, Responsibility was moderately correlated with Jealousy, weakly to moderately correlated with Tenderness, Anger, and Guilt, and weakly correlated with Shame, Sadness, Joy, and Interest (Paper II).

4.4. AI FOR DISCRETE AFFECTS AND THE SPECIFICITY OF INTERPERSONAL PROBLEMS

For the relationships between AII scores for discrete affects and specific types of interpersonal problems, the predicted patterns and obtained correlations are shown in Figure 4. The integration of Tenderness and Guilt had a correlation pattern that peaked in the Cold octant. For Jealousy, the pattern of correlations peaked in the Vindictive octant. For Interest, Shame, Fear, and Sadness, the correlation patterns peaked in the Socially Inhibited octant, whereas for Joy, the pattern peaked in the Cold octant. Finally, Anger had a pattern of correlations with a low point in the Domineering octant and a peak in the Self-sacrificing octant (Paper II).

Figure 4. Patterns of relationships between discrete affects and specific types of interpersonal problems (Paper II).
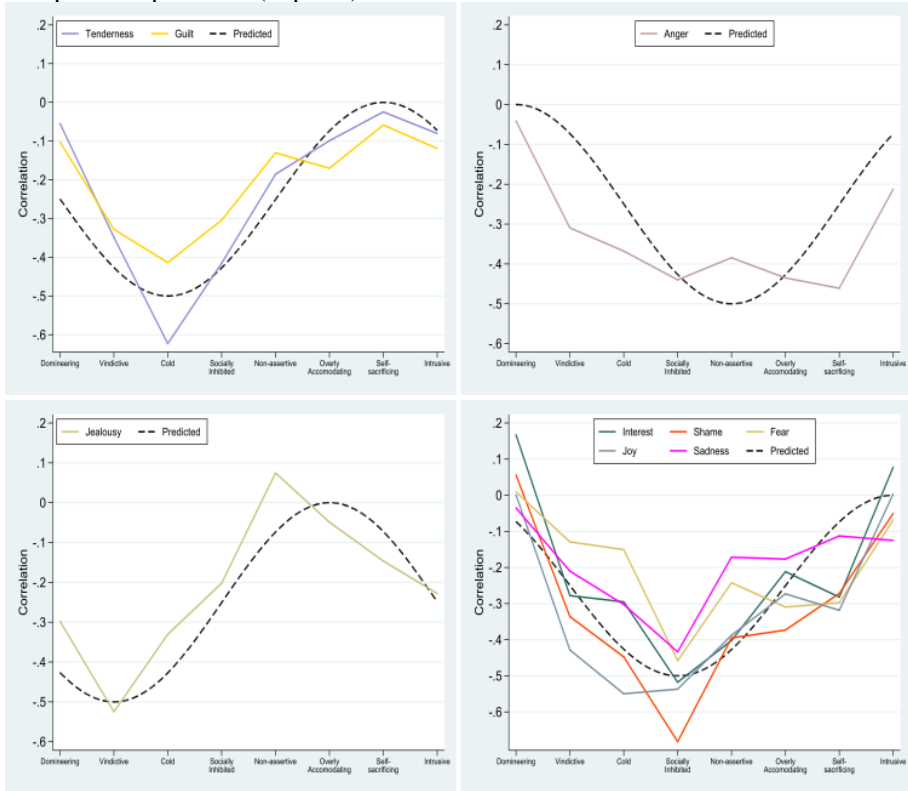
Note. N=82. The predicted patterns are shown as black dashed lines.

4.5. AI FOR PATIENTS WITH APD AND PATIENTS WITH BPD

Table 7 displays the means and standard deviations for AII scores in the APD and BPD groups. As shown, the mean score and standard deviation for Global AI were identical in both groups. For Experience, the mean score in the two groups varied somewhat (APD > BPD, a small difference according to Cohen´s standards); however, this difference was not statistically significant. Statistically significant differences with moderate effect sizes were observed for the specific affects Interest (BPD > APD) and Jealousy (APD > BPD). Unlike our expectations, the difference in scores for Expression was not statistically significant (Paper III).

Table 7. Scores for Global AI, Experience, Expression and discrete affects in the BPD and APD groups (mean and standard deviation), estimated mean difference between groups with 95% CI, and Cohen's d (Paper III).

	BPD (N = 25)	APD (N = 36)	Difference	P-value	Cohen's d
Global-AI	3.7 (1.0)	3.7 (1.0)	-0.00 [-0.53, 0.53]	1.00	-0.00 [-0.51, 0.51]
Experience	3.5 (1.0)	3.7 (1.0)	-0.21 [-0.74, 0.33]	0.44	-0.20 [-0.71, 0.31]
Expression	4.2 (1.4)	3.6 (1.4)	0.54 [-0.18, 1.25]	0.07	0.39 [-0.12, 0.91]
Interest	4.9 (1.4)	4.0 (1.3)	0.97 [0.29, 1.65]	0.01	0.75 [0.22, 1.27]
Jealousy	3.2 (2.2)	4.5 (2.4)	-1.23 [-2.43, -0.03]	0.04	-0.53 [-1.05, -0.01]
Guilt	4.1 (1.4)	4.8 (1.4)	-0.72 [-1.46, 0.03]	0.06	-0.50 [-1.02, 0.02]
Joy	3.9 (1.6)	3.3 (1.3)	0.63 [-0.13, 1.38]	0.12	0.43 [-0.09, 0.95]
Tenderness	4.8 (1.9)	4.4 (1.8)	0.36 [-0.59, 1.31]	0.46	0.20 [-0.32, 0.71]
Sadness	3.3 (1.3)	3.1 (1.2)	0.19 [-0.44, 0.83]	0.55	0.16 [-0.35, 0.67]
Fear	2.9 (1.4)	3.0 (1.3)	-0.12 [-0.82, 0.58]	0.73	-0.09 [-0.60, 0.42]
Shame	3.1 (1.5)	3.0 (1.3)	0.11 [-0.60, 0.82]	0.76	0.08 [-0.43, 0.59]
Anger	3.1 (1.2)	3.2 (1.6)	-0.10 [-0.86, 0.65]	0.78	-0.07 [-0.58, 0.44]

Note. All p-values were obtained from two-sided t-tests except for Expression (upper tailed p-value).

Scores for the *Access to* and *Driven by* scales, including means and standard deviations, are displayed in Table 8, along with the estimated mean differences between groups with 95% CIs. As shown, the APD group had significantly lower *Access to Interest* than the BPD group. The difference in *Access to Anger* was not statistically significant, although there was a tendency (p < .10) toward lower scores in the APD group. For the *Driven by* scales, the mean scores on Jealousy, Anger, and Interest in the BPD group were significantly lower than those in the APD group (Paper III).

Table 8. Means and standard deviations for the *Access to* and *Driven by* variables in each group, estimated mean difference (95% CI) between the groups, p-value for the difference, plus effect size of the difference (Cohen's d). Within each subscale, the affects are sorted by ascending p-value (Paper III).

	BPD (n = 25)	APD (n = 36)	Difference	P-value	Cohen's d
Access to					
Interest	4.8 (2.4)	3.3 (1.6)	1.48 [0.37, 2.60]	0.01[a]	0.75 [0.22, 1.27]
Anger	2.9 (1.4)	2.2 (1.8)	0.68 [-0.16, 1.51]	0.06[a]	0.40 [-0.12, 0.92]
Guilt	4.8 (2.4)	5.7 (2.0)	-0.90 [-2.06, 0.26]	0.12[b]	-0.42 [-0.94, 0.10]
Tenderness	4.7 (2.5)	5.1 (2.3)	-0.40 [-1.66, 0.87]	0.53[b]	-0.17 [-0.68, 0.34]
Joy	2.1 (2.0)	2.2 (1.5)	-0.09 [-1.05, 0.88]	0.85[b]	-0.05 [-0.56, 0.46]
Driven by					
Interest	5.6 (3.0)	3.1 (2.4)	2.56 [1.11, 4.00]	< 0.01[a]	0.97 [0.42, 1.50]
Anger	6.9 (1.6)	5.1 (3.0)	1.82 [0.63, 3.00]	<0.01[a]	0.72 [0.19, 1.25]
Jealousy	5.7 (2.9)	4.0 (3.0)	1.75 [0.21, 3.28]	0.01[a]	0.59 [0.07, 1.11]
Guilt	7.4 (2.0)	6.4 (2.7)	1.00 [-0.19, 2.18]	0.10[b]	0.41 [-0.10, 0.93]
Shame	5.4 (2.5)	5.9 (2.1)	-0.52 [-1.75, 0.71]	0.40[b]	-0.23 [-0.74, 0.29]

Note. [a]: upper-tailed p-value from t-test. [b]: two-sided p-value from t-test.

4.6. CHANGES IN EMOTIONAL DYSFUNCTION DURING 6 MONTHS OF PSYCHOTHERAPY

Examination of changes in AI (Global AI, Experience and Expression), quality of life and interpersonal problems during 6 months of psychotherapy for APD indicated a tendency for small improvements in all domains except Expression, but none of these changes were statistically significant at the group level and small effect sizes (Paper IV). However, there was a substantial variation in trajectories at the level of individual patients. The regression analyses of the association between baseline scores for Global AI, Experience, Expression and the subsequent change in these factors after 6 months revealed negative associations. Thus, patients with lower scores at the onset of treatment tended to attain greater improvements. The standardized regression coefficient relating baseline level and change in Global AI was -.64 (p = 0.00), whereas between baseline and change in Experience it was -.67 (p = 0.00), and

between baseline and change in Expression it was -.47 (p = 0.02). All these coefficients were statistically significant (Paper IV).

On the left side of Table 9, correlations between baseline levels of AI and changes in the primary outcome variables are found. On the right side, correlations between changes in AII scores and concurrent changes in the outcome variables are found. The relationships between baseline levels of AI and changes in the external outcome domains were formally small and moderate in magnitude and did not reach statistical significance (Paper IV). Between changes in AI and concurrent changes in quality of life and relationship difficulties, several large and statistically significant associations were detected. Improvements in Global AI were strongly related to improvements in the level of relational difficulties and moderately to strongly related to improvements in quality of life. Improvements in Experience were strongly related to improvements in quality of life, and improvements in Expression were strongly related to improvements in the level of relational difficulties (Paper IV).

Table 9. Correlations between baseline level of AI and changes in outcome and between changes in AI scores and changes in outcome (Paper IV).

	Baseline AI			Change in AI		
	Global AI	Experience	Expression	Global AI	Experience	Expression
IIP-Global	0.17	0.17	0.12	-0.51*	-0.39	-0.70*
WHO-QOL	-0.21	-0.33	-0.05	0.43*	0.55*	0.10

Note. P-value < 0.05. N = 23.

CHAPTER 5. DISCUSSION

This thesis is based upon four studies (Papers I-IV), each with its own perspective on the topic of emotional dysfunction in patients with PD. When considering the results, two themes seem to appear. One aim of the project was to examine the psychometric properties of the AII (Paper I); however, by including some of the results from later studies, it seems possible to elaborate this topic further. In a similar manner, by combining the results from all four studies, it seems possible to further enhance and develop a more nuanced understanding of emotional dysfunction in individuals with PD. Hence, the following discussion will be centered along these two lines.

5.1. THE PSYCHOMETRICS OF THE AII

The validity of the AI construct as operationalized in the AII was addressed in three related substudies, including analyses of internal consistency, the internal structure of scores, convergent and discriminant validity, and known group validity (Paper I). Overall, the results indicated that the AII measures AI consistently and in agreement with the theoretical distinctions underlying the construct in patients with PD. The CFAs revealed that the discrete affect model was superior in terms of fit, which was in line with previous results from other contexts and populations (Solbakken et al., 2011; Solbakken et al., 2017). Hence, the results support the fundamental assumption underlying the AI construct, i.e., that each affect has different experiential, motivational and signal properties and therefore should be assessed in a systematic and differentiated manner (Solbakken, Hansen, & Monsen, 2011).

Examining the associations between the AII and scores from the TAS 20, ERQ, and ACI, along with age and sex, a robust majority (8 of 11) of the hypotheses were supported by the findings. For those hypotheses that were not clearly supported, the obtained results still appeared theoretically meaningful or of relatively little importance in the overall interpretation of the convergent and discriminant validity of the instrument (for a more in-depth discussion, see Paper I). Additionally, the results revealed that the subdomains of Experience and Expression discriminated according to expectations, thereby supporting the validity of this distinction. In sum, the AII scores were related to external factors in a theoretically expectable and feasible way, providing support for their utility and validity (Paper I). These results are in line with findings on the validity of the AII in nonclinical samples (Solbakken et al., 2017; Solbakken & Monsen, 2021), and they suggest that the AII produces reliable and valid data in PD samples, as well as nonclinical samples.

In addition, analyses of the association between the integration of discrete affects and specific types of interpersonal problems can be included when examining the validity of the AII on the level of discrete affects. Manifested as sinusoidal patterns of relationships peaking in separate and theoretically expected octants of the IIP-64, the results suggest that dysfunction in the management of discrete affects is related to specific patterns of interpersonal dysfunction (Paper II). Since the obtained patterns

were consistent with our expectations (or deviated only slightly in a theoretically meaningful manner), these results provide additional support for the convergent and discriminant validity of the subdomains of discrete affect scales on the AII. Thus, the current results bolster and extend upon previous findings using both the ACI (Normann-Eide et al., 2013; Solbakken, Hansen, Havik, et al., 2011) and the AII (Solbakken et al., 2017; Solbakken & Monsen, 2021). The fact that it is possible to obtain such differentiated patterns of relationships between the integration of discrete affects and specific patterns of interpersonal problems in a sample of patients known for struggling with severe emotional dysfunction only seems to make a stronger case for the usefulness of this conceptualization.

When comparing AII scores from the clinical and nonclinical responders, they clearly differentiated on all scales in a statistically significant manner (Paper I). Furthermore, the results showed that it was possible to outline a clinical cutoff for differentiating between groups with adequate sensitivity and specificity for identifying responders with PD (determined by Youden´s J thresholds). Additional cutoffs were further computed to define thresholds for the AII subscales. However, it should be noted that these calculations were generated with the intent of providing an easily accessible guideline for clinicians to unveil potential emotional dysfunction within certain areas of emotional experience. In other words, the application of the lower-level cutoffs should not be applied as a threshold indicator in terms of overall clinical or nonclinical status. Importantly, since the ability to differentiate between clinical and nonclinical groups varies substantially for discrete effects (displayed by the specific values of sensitivity and specificity), the applicability of the thresholds also tends to vary (Paper I).

According to Messick (1995), construct validity is a unified and multifaceted concept that integrates considerations of content, criteria, and consequences into a framework of testing. The evaluation of validity is based on an overall judgment of the degree to which these forms of evidence and the theoretical rationales underlying a concept support the adequacy and appropriateness of interpretations of the test scores. Messick (1989) points to six distinct aspects of construct validity that are important to address in the unified understanding of the concept: content, substantive, structural, generalizability, external, and consequential aspects of construct validity. The operationalization of the AI construct into the AII rests upon nearly 40 years of work with the concept that has guided the continuous development of the instrument (Solbakken et al., 2017). The close connection between the theoretical framework, the operationalization of the AI construct, and the development of the AII appears to lend support to both content and substantive validity aspects of the construct. The structural validity aspect has in the present research project been addressed by conducting CFAs, and external validity has been addressed in terms of convergent and discriminant relationships with external criterion variables both at the level of discrete affects and higher-order domains. Finally, by examining the psychometrics of the AII in a PD sample, the generalizability of scores from the instrument was preliminarily addressed in a clinical sample.

5.2. THE ACI AND THE AII – WHAT TO MAKE OF THE DIFFERENCE IN SCORES

It is well known that diverging methods of data collection influence results (Hemphill, 2003); thus, identical scores cannot be expected when comparing scores gathered with different assessment tools or methodologies. One of the puzzling findings of this study relates to the relationship between the data collected using the ACI and the AII. The results indicated a substantial but in no way perfect overlap between corresponding scores (Paper I). The risk of floor effects and attenuation of the correlations should be cautioned (Lewis-Beck et al., 2004). Nevertheless, it seems that the AII cannot straightforwardly replace the ACI but instead should perhaps be considered a representation of an overlapping but somewhat different perspective on the same underlying phenomenon (see Paper I).

A key question relates to whether it is possible to gather valid information by relying on self-report measures when addressing complex processes, such as emotional (dys) functioning. This is especially relevant in samples of individuals, who by (diagnostic) definition struggle comprehensively with the issue and in many cases appear to lack adequate insight into the nature of their difficulties.

Clark and Watson (2019) address the question of validity of self-reported versus observer-based measures, stating that interviews are often assumed to be superior to self-reported measures because they involve expert judgment and permit follow-up questions to clarify responses. However, they argue that for the most part, interviews are based on self-reports and thereby reflect the strengths and limitations of both self-reports and interviews. In their point of view, *N always = 1 for information regarding an individual's internal sensations* (Clark & Watson, 2019, p. 23). Thus, emphasizing that no other method is available to verify such reports, which represents an inherent limitation that applies to both self-reported and observer-based methods, they posit that the individual might not elaborate on their internal state accurately, either because they choose not to do so or because they cannot do so. Thus, none of the data sources appear superior by definition.

However, the two methods seem to have different strengths. Self-reported scales have the benefit of obtaining information in less time than interviews. Additionally, self-reported scales may provide better control for confounding variables that are inherently present in any patient–examiner interaction (Young et al., 2003). As noted by Cronbach (1949) and Anastasi and Urbani (1997), the demands of examiner-based tasks and the attendant situation in itself are considerably different and much more complex than simple paper and pencil tasks. Self-reported scales are limited by only allowing access to what the individual is immediately aware of, whereas a well-conducted interview may also produce insight into more unconscious or "never thought of" aspects of an experience. Conducting interviews in samples of patients who experience substantial difficulties with interpersonal interaction (such as the present study) does, however, represent a challenge, and the end result, to some extent, may depend upon the interpersonal skills of the examiner. Things are not clear-cut,

but it seems that by using a self-reported method, it may be possible to eliminate some of the interpersonal confounding, but at the price of missing the opportunity to gain insight into potentially important aspects that reside outside of the participant's immediate awareness.

5.3. EMOTIONAL DYSFUNCTION AND THE SEVERITY OF PSYCHOPATHOLOGY

Representing one perspective on the relationship between emotional dysfunction and PD, the associations between AI and the severity of symptom distress, interpersonal function and personality dysfunction were examined (Paper II). In the present study, Global AI explained 32.5% of the variation in symptom distress, 38.4% of the variation in overall relational difficulties, and between 9.1% (Responsibility) and 53.1% (Relational Functioning) of the variation in personality dysfunction domains.

As in previous studies (Monsen et al., 1996; Solbakken, Hansen, Havik, et al., 2011), the present results demonstrated a stronger relationship between the experience aspect of AI and the GSI (-0.61 [-.79, -.44]) than between the expression aspect and the GSI (-.32 [-.52, -.11]) (Paper II). Additionally, AI appears to constitute a highly central feature in interpersonal functioning, as low levels of AI were strongly associated with more pronounced relational difficulties. As with symptom distress, the experience aspect of AI (β = -.61) was more strongly associated with relational difficulties than was the expression aspect of AI (β = -.49), even though the difference was less pronounced than for symptoms (Paper II). These results suggest that dysfunctions in the capacity to perceive, tolerate, and understand affective experiences may be more important to symptom formation and the degree of relational difficulties than the capacity to directly and clearly express one´s affective states (Paper II). Thus, the results fit well with the propositions of Bateman, Fonagy and Luyten (2012), who emphasize the psychologically distressing and interpersonally handicapping results of deficits in mentalizing capacities.

Finally, the results suggested a close connection between levels of AI and the degree and nature of personality dysfunction. As demonstrated, higher-order AI scores were strongly related to Identity Integration, Relational Functioning, and Self-control while moderately to strongly associated with Responsibility and Social Concordance. These results align with findings by Johansen et al. (2016), who in a comparable sample, found a strong association between the level of AI (measured by the ACI) and the severity of problems within the areas of Identity Integration and Relational Functioning. In the present study, more than half of the variation in scores on each of these personality functioning domains was explained by the level of AI, thus demonstrating the close relationship between emotional dysfunction and central aspects of personality dysfunction as such.

In DSM-5 AMPD, the general severity of PD is described as perhaps the most important single predictor of concurrent and prospective dysfunction available in the assessment of personality psychopathology (American Psychiatric Association,

2013). Severity is scored according to the LPFS, comprising the evaluation of self (identity, self-direction) and interpersonal (empathy, intimacy) functioning. A study by Bastiaansen et al. (2013) found that most of what is included under the self-component of the personality functioning continuum is captured by the Identity Integration domain of the SIPP-118, while the Relational Functioning domain of the SIPP-118 aligned quite neatly with the interpersonal component of the personality functioning continuum. Due to the cross-sectional design of the present study, it is of course not possible to address the direction and causality of relationships. Nevertheless, it seems reasonable to speculate that AI may constitute an underlying psychological capacity that centrally influences the self and interpersonal components of personality functioning and plays an important role in determining the severity of dysfunction.

Furthermore, the relationships between the five domains of personality functioning and the integration of discrete affects were examined. The results showed that different affects were differentially related to the various domains of personality functioning. This finding was also in line with the theoretical conceptualization underlying the AI model, i.e., that different affects have different impacts and implications (see e.g., Solbakken, Hansen, & Monsen, 2011). For example, difficulties with Self-control were substantially associated with seven out of the nine affects, with problems with Anger and Jealousy as the strongest contributors. Difficulties with Social Concordance were substantially associated with five of the nine affects, with problems with Guilt and Shame being the strongest contributors. Difficulties with Responsibility were substantially associated with only one of the affects, i.e., difficulties with Jealousy. Difficulties with Identity Integration were substantially associated with difficulties across all affects except Fear, with dysfunctions in the integration of Joy and Anger being the strongest contributors. Similarly, difficulties with Relational Functioning were substantially related to all affects except Fear, with difficulties with Tenderness and Joy being the strongest contributors (Paper II). On basis of these results, it appears that difficulties in the integration of various discrete affects are indicative of different types of personality problems characteristic of PD. Thus, the results also point to the potential benefit of targeting discrete affects in the treatment of PD.

To summarize, it appears that AI is located centrally at the intersection of psychological symptom formation, maladaptive interpersonal behavior, and the severity of personality functioning (Paper II). Levels of AI accounted for large amounts of the variation in all these domains, suggesting that AI may constitute a core mechanism binding these functional domains together as a whole. The results align with theoretical propositions by Izard (1991), Krystal (2015), Monsen & Monsen (1999), Solbakken, Hansen, & Monsen (2011), Stolorow, Atwood, & Brandchaft (1987), Tomkins (2008a, 2008b) and empirical findings by, e.g., Monsen et al. (1996), Solbakken, Hansen, Havik, & Monsen (2011), Solbakken, Hansen, Havik, & Monsen (2012), Solbakken et al. (2017), and Taarvig et al. (2015), suggesting that failures in the integration of affect will leave the individual vulnerable to the development of psychological symptoms, contribute to maladaptive interpersonal strategies and

behaviors, and contribute to the development of structuralized, characterological, dysfunctional ways of perceiving, interpreting, and reacting to events and people in the world.

5.4. EMOTIONAL DYSFUNCTION IN PATIENTS WITH APD OR BPD

In line with expectations, highly similar levels of overall emotional dysfunction (as measured by Global AI and Experience) were found when comparing patients with APD to those with BPD (Paper III). Previous studies on psychosocial functioning have indicated that individuals with APD generally appear to be better functioning than individuals with BPD or schizotypal PD, yet more impaired than individuals with obsessive-compulsive PD (Mehlum et al., 1991; Skodol et al., 2005; Skodol et al., 2002). Additionally, in the diagnostic conceptualization in DSM-5 AMPD, general impairment on the LPFS related to APD is mostly scored on Level 2, thus reflecting moderate severity (Simonsen et al., 2020). However, not all empirical studies have supported the notion of APD as a disorder of intermediate severity (Hopwood et al., 2006; Wilberg et al., 2009). The results of the present study seem to favor the latter position by reporting data that suggest that APD and BPD experience comparable levels of impairment in the structural capacity for adaptive experience of affects.

Regarding the capacity for expressing and communicating affective states, the groups differed slightly, with a lower mean in the APD group. This difference was, however, smaller than expected and not statistically significant, indicating that the level of impairment in the capacity to adaptively communicate one's affective states may be relatively similar in patients with APD compared to those with BPD. Johansen et al. (2013) used the ACI in a comparable sample as the present study and observed a statistically significant difference between groups when investigating Conceptual Expression (verbal), while the difference in Emotional Expression (non-verbal) was not statistically significant (Johansen et al., 2013). What should be noted is that the actual estimate for the difference between groups in Expression scores is similar in both studies. Thus, the reason for the different findings in the two studies might be of a methodological nature, e.g., by the AII not being sensitive enough to capture the difference, since conceptual and emotional expression are merged into one communicational aspect. Of course, a larger sample size might have led to a conclusion of a statistically significant difference between groups in our study as well, so statistical power may also have been an issue.

At the level of discrete affects, patients with APD scored significantly lower on Interest than those with BPD (Paper III). This was in line with findings from Johansen et al. (2013). By examining the *Access to Interest* scale, it also appeared that the APD group experienced significantly poorer access to this affect than the BPD group. According to Izard (1991), interest will motivate and guide the individual toward exploration, learning, and developing new skills. Moreover, interest conceptually taps into the same construct domain as "the seeking system," an affective organization associated with creativity (Panksepp & Watt, 2011; Reuter et al., 2005). In the

writings of Winnicott (1971), play and creativity are considered vital in relation to psychotherapy and development. In the process of creativity, the patient discovers the true self. This perspective points to the potential benefit of addressing interest in the treatment of APD. Karterud et al. (2016) identified a negative association between APD and the primary emotion system of play and seek. The lack of playfulness and seeking in APD was furthermore related to a high occurrence of Fear, suggesting that when Fear dominates the individual´s experience, it will inhibit play and seeking.

On the *Access to Anger* scale, scores trended toward being lower in the APD group, although the difference formally did not reach statistical significance (p-value = 0.055). Bearing the issue of statistical power in mind, we believe that this result should not be too quickly discarded. Conceptually, reduced access to anger implies poor access to the motivational underpinnings of boundary formation and self-assertion, both likely to be central problems in APD. According to Solbakken (2013), when access to anger is poor, the experience of being angry typically ends with feelings of abandonment, resignation, anxiety or guilt rather than self-affirming and boundary-forming behavior.

On the level of discrete affects, the BPD group had significantly lower overall scores for the integration of Jealousy and, in particular, more difficulties with being driven by this affect. Furthermore, the BPD group demonstrated a significantly higher tendency to be driven by Anger (Paper III). The results of the study thus appear to support the notion of BPD as associated with an impaired ability to withhold aggressive impulses (American Psychiatric Association, 2013). Moreover, the results indicated that individuals with BPD are also more driven by feelings of interest than those with APD. Being driven by interest or excitement might lead to doing things one later regrets or disregarding the needs and feelings of others (Paper III). This way of experiencing Jealousy, Anger and Interest adds up to the notion of high and sometimes destructive impulsivity in BPD (American Psychiatric Association, 2013). On the other hand, one has to consider whether this finding is the expression of an actual incapacity if individuals with BPD to downregulate interest or whether it is more a question of the comparative case, in this case patients with APD, who knowingly struggle with adaptive management of Interest. Thus, in further studies, it is recommended to examine affective dysfunction in BPD in relation to other samples (Paper III).

To summarize, in relation to the higher-order aspects of AI, the groups with APD and BPD were similar. In relation to discrete affects, the groups deviated in terms of Interest (APD had the lowest mean) and Jealousy (BPD had the lowest mean), whereas the most striking differences in emotional dysfunction between APD and BPD appeared due to variations in prototypical modes or patterns of experiencing and relating to one´s affects.

5.5. CHANGES IN EMOTIONAL DYSFUNCTION DURING TREATMENT FOR APD

The patterns of change in emotional dysfunction and their associations with changes in quality of life and level of interpersonal problems were examined after the first 6 months of psychotherapeutic treatment for APD (Paper IV). Changes were addressed in terms of improvement in the capacity to perceive, comprehend and communicate affective reactions, improved quality of life and decreases in the level of self-reported relational difficulties. As noted, the average improvements in outcome variables were small and statistically nonsignificant (Cohen´s d ranging from .27 to .39 for overall affect integration, the capacity for affect experience, quality of life, and interpersonal problems, while close to 0 for capacity for affect expression) (Paper IV). However, the tendency across the outcome domains was consistently positive for all but one of the outcome variables, which points to the possible existence of small improvements, even at the characterological level in the first 6 months of relatively low-intensity treatment for APD (Paper IV). The statistical power in the study was modest, i.e., the study was not powered for detecting small effect sizes. In other words, to demonstrate statistically significant changes of the magnitude reported here, a greater sample size would have been needed (Paper IV).

Notably, structural capacities, such as AI and interpersonal functioning, normally improve more slowly than symptoms in treatment. This means that the observed results in this study probably should not be discarded as trivial but rather seen as encouraging of further investigation of the issue (Paper IV). Given the assumption that the rate of change holds relatively constant as treatment progresses beyond 6 months, somewhere between 12 and 18 months of treatment would be necessary for attaining large effects on average in four of the five outcome domains examined (Paper IV). This would be in line with previous studies on the development of social functioning in patients with APD (Kvarstein et al., 2021) and improvements in more complex characterological phenomena that involve changes in structural capacities (Bateman & Fonagy, 2009; Dimaggio et al., 2017; Giesen-Bloo et al., 2006; Gordon-King et al., 2018; Linehan, 1993; Monsen et al., 1989; K. Monsen & Monsen, 2000; Nordmo et al., 2020; Normann-Eide et al., 2015; Solbakken et al., 2012), indicating a need for long-term treatment to detect more comprehensive changes.

Despite the small and nonsignificant changes on average, the results indicated a notable variation between patients (Paper IV). The strong and moderate negative correlations between baseline scores and corresponding changes in the AI scales suggested that those patients with the most pronounced dysfunctions in AI before treatment were also the ones who improved the most (Paper IV). In the larger picture, this could mean that low levels of AI represent a greater potential for change in patients with APD, which makes sense, given that patients with less pronounced dysfunctions are in less need of improvement. However, this contradicts the general notion that healthier subjects tend to benefit more from psychotherapy (Lambert et al., 2004; Luborsky et al., 1993). Nevertheless, our finding is in line with a previous study by Solbakken et al. (2012) on AI and change in treatment outcomes. In a mixed

clinical sample (half of which fulfilled the criteria for at least one PD), including patients receiving open-ended personalized psychotherapy, the results demonstrated that patients with lower baseline levels of AI improved more through psychotherapy. Additionally, Solbakken et al. (2012) used longitudinal multilevel modeling and statistically controlled for any effects of regression toward the mean, which the design of the present study precluded. Thus, even though consistent with this assumption, it cannot be concluded from this study that deficits in AI represent a potential change in psychotherapy for APD (Paper IV).

In study IV, the relationships between baseline levels and changes in AI and concurrent changes in quality of life and the level of interpersonal problems were also examined. The results revealed that initial levels of AI had moderate to small and nonsignificant correlations with subsequent changes in these outcome variables, whereas changes in AI scores were strongly and moderately to strongly correlated with concurrent improvements in both quality of life and level of interpersonal problems (Paper IV). As noted, statistical power was an issue in this pilot study. Therefore, further discussion of the nonsignificant associations between baseline AI scores and changes in the other outcome domains is warranted. Between pretreatment AI and improvement in external domains, the strongest correlation was for the capacity for affect experience and improvements in quality of life. Although this correlation was statistically nonsignificant, it was strikingly large, estimated at .33, suggesting that 10.9% of the variation in changes in quality of life might be accounted for by the baseline capacity for affect experience (Paper IV). Due to limited statistical power, it is not possible to demonstrate the presence of such an effect beyond possible chance variations. Nevertheless, this result is quite notable since even the strongest known pretreatment predictors of change in psychotherapy usually only account for 10-15% of the variance in outcomes (Lambert et al., 2004). Furthermore, the predictive effect is similar in size to those estimated by Solbakken et al. (2012) in their larger study on AI.

Regarding the associations between changes in AI and the concurrent changes in quality of life and interpersonal problems, it was shown that improvements in the global capacity for AI were strongly associated with both increased quality of life and decreased interpersonal problems, accounting for as much as 26% of interpersonal improvements and 18% of improvements in quality of life (Paper IV). Furthermore, improvement in the capacity for affect experience was strongly related to reporting increased subjective well-being (accounting for 30.3% of improvements), while improvement in the capacity for affect expression was very strongly related to reductions in interpersonal difficulties (accounting for 49% of improvements) (Paper IV). Normann-Eide et al. (2015) reported a similar finding at the three-year follow-up in a sample of patients with PDs, while Gude et al. (2001) found that pretreatment levels of AI were related to a reduction in APD traits, while increases in AI during treatment did not contribute in the same way. It should be noted that caution must be taken in interpreting results from this study as directly indicative of treatment effects as such, since power is modest and no control for potential regression toward the mean was possible.

5.6. STRENGTHS AND LIMITATIONS

One of the major strengths of the study relies on its comprehensive and systematic empirical investigation of the nature of emotional dysfunction in individuals with PD, expanding upon the existing knowledge in the field. Another strength is the structured approach for examining emotional dysfunction in patients with PD. Using the AII made it possible to address emotional dysfunction at the level of integration of discrete affects and prototypical modes of experiencing these (lacking access to or being driven by), providing knowledge of hitherto unexplored areas of emotional dysfunction in PD. The study has thus provided insight into the nature and unique contributions of the integration of discrete affects for relationships with PD pathology. Additionally, the identification of prototypical modes of experiencing appears to enrich the empirical examination of emotional dysfunction in PDs, as demonstrated in study III, and has, to our knowledge, never been investigated before.

However, some limitations should be noted. First, a general limitation was the small sample size, the subsequent lack of statistical power, and increased risk of type II errors. Additionally, it would have strengthened the confidence in the diagnostic assessments if more than one examiner had rated the SCID and PSE interviews. In study I, a larger sample would have been preferred to conduct complete first-order factor analyses by CFA, something that was not possible given the number of participants. This was compensated for by generating a reduced set of representative indicators for each affect, thereby minimizing the total number of variables in the analyses. However, the uncertainty associated with the estimated parameters was acknowledged, and to strengthen the robustness of the conclusions, additional exploratory factor analyses were conducted. These yielded results that were conceptually indistinguishable from those of the CFAs in terms of the observed internal structure (see Appendix C, supplementary material study I). In addition, the representation of various PDs was limited in the sample, with most of the patients being diagnosed with either borderline PD or avoidant PD. In study I, AII scores were compared between clinical and nonclinical samples, and it should be noted that data were collected in two different Scandinavian countries. Preferably, data should have been collected in the same country, but since Denmark and Norway appear comparable in terms of culture, ethnicity and social structure, this issue is believed to be of minor consequence. However, it was recognized that the groups differed in composition (e.g., socioeconomic status and level of education), with the nonclinical sample being more homogeneous than the clinical sample. The fact that the nonclinical sample primarily consisted of young, highly educated adults might influence the generalizability of the results and perhaps have exaggerated the difference between the clinical and nonclinical groups. The cross-sectional nature of studies I, II, and III precludes us from empirically addressing any potential causal relationships between the tested variables (Wang & Cheng, 2020). In studies II, III and IV, all instruments were self-rated. This exclusive reliance on self-reported data causes a risk of monomethod bias with artificially high correlations. In study IV, the relationship between baseline AI and subsequent/predictive changes was addressed. However, no control for regression toward the mean was conducted. This would have

demanded a design with more frequent assessment points and more sophisticated statistical analyses.

CHAPTER 6. CONCLUSION

In this study, emotional dysfunction in patients with PD was examined by analyzing data gathered from two hospital-based outpatient clinics specializing in the treatment of PD in the North Denmark Region. Eighty-seven patients with PD were included in studies I and II, 36 patients with APD and 25 patients with BPD were included in study III, and 31 patients with APD were included in study IV. Together, these four studies constitute a comprehensive investigation of various aspects of emotional dysfunction and diagnostic and functional features in patients with PD, including an examination of the psychometrics of the recently developed AII questionnaire.

The results demonstrated that AII scores can be measured with a high level of internal consistency in patients with PD. The factor structure of the instrument aligned with the theoretical model underlying the construct, and the obtained relations with external criterion measures closely resembled the patterns of convergent and discriminant associations expected by theory, both for the higher-order scales and for the discrete affect scales. Finally, all scales were shown to yield statistically significant differences between the distribution of scores from the clinical and nonclinical populations. By maximizing Youden's J index, a global cutoff for differentiating between the clinical and nonclinical samples was computed with satisfactory sensitivity and specificity. In summary, the results appear convincing and perhaps even more so considering the relatively restricted range of the sample. Thus, this study provided support for the construct validity of the AI construct as it is operationalized through the AII. Importantly, the results indicated that the AII cannot replace the ACI but is more likely to contribute to mapping conceptually meaningful but partly distinct variability.

Furthermore, the results provide evidence of the key importance of affective dysfunctions in relation to the severity of psychopathology in PD. Hence, low levels of AI were closely related to more pronounced symptom distress, interpersonal difficulties, and maladaptive personality traits. The results pointed to dysfunctions in the capacity to perceive, tolerate, and understand affective experiences as more central to symptom formation and the experience of interpersonal problems than the capacity to express clearly and directly one´s affective states. Additionally, the close relationship between AI and core personality problem domains suggests that AI may constitute an underlying psychological capacity of central importance for the severity of personality dysfunction. In summary, even though no causality can be inferred from our findings, AI appears to be centrally located at the intersection of symptomatic, relational, and characterological dysfunctions common in PDs and may be a core factor in the development of these problems and a potentially useful target for treatment.

Patients with APD and patients with BPD experienced similar levels of overall emotional dysfunction. It was expected that patients with APD would report more severe dysfunction in the capacity to express affective states; however, in this study, the difference was not statistically significant. On the level of discrete affects, it

seemed that patients with BPD had significantly more problems with the integration of Jealousy, whereas patients with APD had significantly more problems with the integration of Interest. Regarding prototypical modes of experiencing affects, patients with BPD were more driven by Interest, Anger, and Jealousy, whereas patients with APD to a greater extent lacked access to Interest and also likely lacked access to Anger. In summary, on an overall level, patients with APD and patients with BPD were characterized by similar levels of emotional dysfunction; however, they systematically differed with respect to specific affects and modes of experiencing these affects.

During 6 months of psychotherapy for APD, improvements in levels of AI, quality of life, and interpersonal problems were statistically nonsignificant, and effect sizes were small. Interestingly, substantial variation in change trajectories was seen. The results indicated that patients with low levels of AI at baseline reported greater improvements during the first 6 months of psychotherapy. Between baseline levels of AI and later changes in external outcome domains, no significant relationships could be demonstrated. However, jointly considering the sizes of those nonsignificant associations and the issue of statistical power, we believe that AI constitutes an interesting candidate for future studies on predictors of change in psychotherapy for APD. Examining the relation between improvements in AI during treatment and concurrent improvements in quality of life and levels of interpersonal problems, several large associations were found. Due to the nature of the study, any causal inference was precluded; however, the findings were in accordance with the hypothesis that emotional dysfunction (as operationalized in the AI construct) may be a potential core mechanism of change in psychotherapy for APD.

CLINICAL IMPLICATIONS AND FUTURE STUDIES

A major motivation in conducting this study was the inspiration to improve treatment for PD by means of enhancing the understanding of the nature and degree of emotional dysfunction in such patients. In the following section, some considerations on what we have learned, how this knowledge could be relevant in the treatment of PD and where the research could potentially go from here are introduced.

In study I, it was empirically demonstrated how AI scores differentiated the PD sample from nonclinical controls. Problems with AI have both in theory (e.g., Monsen & Monsen, 1999) and prior research (e.g., Johansen et al., 2016) been linked to personality problems, and likewise in the present study, low levels of AI were identified as a distinct feature of the clinical sample (Paper I). Due to the nature of the study, we cannot make any causal inferences or identify the directionality of the relationships. However, considering the above and the unveiling of the close bond between AI and the severity of psychopathology (Paper II), a rationale for suggesting that high therapeutic and healing potential lies inherent in targeting emotional dysfunction in the treatment of PD is provided.

Furthermore, it was revealed how dysfunction in the experiential aspect of AI was more important to symptom formation and relational difficulties than the expression aspect. These findings emphasize the importance of psychotherapeutic treatment involving more than merely working on the semantic representation of the troubling affective experiences. As demonstrated in study IV, the results showed that improvements in the capacity to tolerate, contain, comprehend and understand the meaning of affective experiences go together with concurrent improvements in quality of life (Paper IV). Even though, again, no causal inference can be made, we may speculate that building tolerance for affects may be particularly beneficial for improved well-being.

As previously mentioned, prior research results on the severity of APD have been somewhat divergent. The results from this study were not conclusive; however, in relation to the global or overall level of emotional dysfunction, the findings from the present study suggested that patients with APD experience impairment at the same level of severity as patients with BPD. Furthermore, the results suggested that dysfunction in relation to the integration of interest constitutes a distinct feature of APD, an area of experience that may be highly relevant to address specifically in treatment. Study III was unfortunately limited by the small sample size, meaning that potential clinically meaningful differences between groups (e.g., in relation to Joy and, *Access to Anger*) could not be detected. Thus, to expand the knowledge of emotional dysfunction in patients with APD, it would be highly recommended to replicate this design in a larger sample. Additionally, seeing that dysfunction in the management of discrete affects is related to specific patterns of interpersonal and personality problems (Paper II), it would be very interesting to investigate the

relationship between APD, specific patterns of AI for discrete affects and their relationship with interpersonal problems and personality (dys)functioning in this group specifically.

Of further future studies, it would be recommended to address the generalizability of scores by including different clinical samples (e.g., patients with eating disorder, depression and/or anxiety) and perhaps more representative community or nonclinical samples. In studies on larger sample sizes, it would furthermore be possible to address a potential shortcoming of the AII raised in study III (Paper III). Unlike expectations and contrary to previous findings, it was not possible to detect a difference between the groups of patients with either APD or BPD regarding the capacity to express affective experiences. This raised the question of whether the AII was sensitive enough to capture an actual difference between groups, which seems highly relevant to address in future studies.

Additionally, in study I, it was shown that the ACI and the AII produced far from identical results. Rather, it seems the two instruments address somewhat different aspects of the same construct (Paper I). As a perspective in future studies, it would, however, be of interest to examine the unique contribution of the ACI and the AII and how these perspectives complement each other in the assessment of AI.

Finally, because study IV was conducted as a pilot study, future studies will be needed to test, challenge, corroborate and expand upon the findings from this study. From the results of the study, we may speculate that changes in AI constitute a potentially central mechanism of change that underpin changes in symptoms, well-being, and relational difficulties in APD and perhaps other forms of psychopathology (Paper IV). However, future process and outcome studies should be conducted to test this hypothesis in a systematic and scientifically valid fashion.

LITERATURE LIST

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Author.

Anastasi, A., & Urbina, S. (1997). *Psychological testing* (7th ed.). Prentice Hall/Pearson Education.

Andrea, H., Verheul, R., Berghout, C., Dolan, C., Vanderkroft, P., Busschbach, J. J. V, Bateman, A., & Fonagy, P. (2007). *Measuring the Core Components of Maladaptive Personality: Severity Indices of Personality Problems (SIPP-118)*. Report of the Viersprong Institute for Studies on Personality Disorders (VISPD) in cooperation with the Department of Medical Psychology & Psychotherapy, Erasmus University Rotterdam, The Netherlands.

Arnevik, E., Wilberg, T., Monsen, J. T., Andrea, H., & Karterud, S. (2009). A cross-national validity study of the Severity Indices of Personality Problems (SIPP-118). *Personality and Mental Health*, *3*(1), 41–55. https://doi.org/10.1002/pmh.60

Bach, B., & First, M. B. (2018). Application of the ICD-11 classification of personality disorders. *BMC Psychiatry*, *18*(1), 351. https://doi.org/10.1186/s12888-018-1908-3

Bach, B., Sellbom, M., Kongerslev, M., Simonsen, E., Krueger, R. F., & Mulder, R. (2017). Deriving ICD-11 personality disorder domains from dsm-5 traits: initial attempt to harmonize two diagnostic systems. *Acta Psychiatrica Scandinavica*, *136*(1), 108–117. https://doi.org/10.1111/acps.12748

Bach, M., de Zwaan, M., Ackard, D., Nutzinger, D. O., & Mitchell, J. E. (1994). Alexithymia: Relationship to personality disorders. *Comprehensive Psychiatry*, *35*(3), 239–243. https://doi.org/10.1016/0010-440X(94)90197-X

Baer, R. A., Peters, J. R., Eisenlohr-Moul, T. A., Geiger, P. J., & Sauer, S. E. (2012). Emotion-related cognitive processes in borderline personality disorder: A review of the empirical literature. *Clinical Psychology Review*, *32*(5), 359–369. https://doi.org/10.1016/j.cpr.2012.03.002

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia scale—I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research*, *38*(1), 23–32. https://doi.org/10.1016/0022-3999(94)90005-1

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (2020). Twenty-five years with the 20-item Toronto Alexithymia Scale. *Journal of Psychosomatic Research*, *131*,

109940. https://doi.org/10.1016/j.jpsychores.2020.109940

Basch, M. F. (1983). Affect and the analyst. *Psychoanalytic Inquiry*, *3*(4), 691–703. https://doi.org/10.1080/07351698309533522

Bastiaansen, L., De Fruyt, F., Rossi, G., Schotte, C., & Hofmans, J. (2013). Personality disorder dysfunction versus traits: Structural and conceptual issues. *Personality Disorders: Theory, Research, and Treatment*, *4*(4), 293–303. https://doi.org/10.1037/per0000018

Bateman, A., & Fonagy, P. (2009). Randomized Controlled Trial of Outpatient Mentalization-Based Treatment Versus Structured Clinical Management for Borderline Personality Disorder. *American Journal of Psychiatry*, *166*(12), 1355–1364. https://doi.org/10.1176/appi.ajp.2009.09040539

Bateman, A. W., Fonagy, P., & Luyten, P. (2012). Handbook of mentalizing in mental health practice. In A. W. Bateman & P. Fonagy (Eds.), *Handbook of mentalizing in mental health practice.* American Psychiatric Publishing, Inc.

Beckwith, H., Moran, P. F., & Reilly, J. (2014). Personality disorder prevalence in psychiatric outpatients: A systematic literature review. *Personality and Mental Health*, *8*(2), 91–101. https://doi.org/10.1002/pmh.1252

Chapman, A. L. (2019). Borderline personality disorder and emotion dysregulation. *Development and Psychopathology*, *31*(3), 1143–1156. https://doi.org/10.1017/S0954579419000658

Chapman, A. L., Rosenthal, M. Z., Dixon-Gordon, K. L., Turner, B. J., & Kuppens, P. (2017). Borderline personality disorder and the effects of instructed emotional avoidance or acceptance in daily life. In *Journal of Personality Disorders* (Vol. 31, Issue 4, pp. 483–502). Guilford Publications. https://doi.org/10.1521/pedi_2016_30_264

Choi-Kain, L. W., & Gunderson, J. G. (2008). Mentalization: Ontogeny, Assessment, and Application in the Treatment of Borderline Personality Disorder. *American Journal of Psychiatry*, *165*(9), 1127–1135. https://doi.org/10.1176/appi.ajp.2008.07081360

Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. In *Psychological Assessment* (Vol. 31, Issue 12, pp. 1412–1427). American Psychological Association. https://doi.org/10.1037/pas0000626

Cleland, C., Magura, S., Foote, J., Rosenblum, A., & Kosanke, N. (2005). Psychometric properties of the Toronto Alexithymia Scale (TAS-20) for substance users. *Journal of Psychosomatic Research*, *58*(3), 299–306.

https://doi.org/10.1016/j.jpsychores.2004.11.002

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences (2nd Edition)*. Hillsdale N.J : Erlbaum Associates.

Cronbach, L. J. (1949). *Essentials of psychological testing.* Harper.

Daros, A. R., & Williams, G. E. (2019). A Meta-analysis and Systematic Review of Emotion-Regulation Strategies in Borderline Personality Disorder. *Harvard Review of Psychiatry*, *27*(4), 217–232. https://doi.org/10.1097/HRP.0000000000000212

Derks, Y. P. M. J., Westerhof, G. J., & Bohlmeijer, E. T. (2016). A Meta-analysis on the Association Between Emotional Awareness and Borderline Personality Pathology. *Journal of Personality Disorders*, *31*(3), 362–384. https://doi.org/10.1521/pedi_2016_30_257

Dimaggio, G., Procacci, M., Nicolò, G., Popolo, R., Semerari, A., Carcione, A., & Lysaker, P. H. (2007). Poor metacognition in narcissistic and avoidant personality disorders: Four psychotherapy patients analysed using the Metacognition Assessment Scale. *Clinical Psychology & Psychotherapy*, *14*(5), 386–401. https://doi.org/10.1002/cpp.541

Dimaggio, G., Salvatore, G., MacBeth, A., Ottavi, P., Buonocore, L., & Popolo, R. (2017). Metacognitive interpersonal therapy for personality disorders: A case study series. In *Journal of Contemporary Psychotherapy: On the Cutting Edge of Modern Developments in Psychotherapy* (Vol. 47, Issue 1, pp. 11–21). Springer. https://doi.org/10.1007/s10879-016-9342-7

Feenstra, D. J., Hutsebaut, J., Verheul, R., & Busschbach, J. J. V. (2011). Severity Indices of Personality Problems (SIPP-118) in adolescents: reliability and validity. *Psychological Assessment*, *23*(3), 646–655. https://doi.org/10.1037/a0022995

First, M. B., Williams, J. B. W., Benjamin, L. S., & Spitzer, R. L. (2015). *User's Guide for the SCID-5-PD (Structured Clinical Interview for DSM-5 Personality Disorder).* American Psychiatric Association.

First, M. B. (1997). *User's guide for the structured clinical interview for DSM - IV Axis II personality disorders - SCID II*. American Psychiatric Press.

Fonagy, P, Gergely, G., Target, M., & Jurist, E. L. (2002). *Affect Regulation, Mentalization, and the Development of the Self*. Other Press. https://books.google.dk/books?id=EDHi3N-ebykC

Fonagy, P., Luyten, P., Moulton-Perkins, A., Lee, Y.-W., Warren, F., Howard, S.,

Ghinai, R., Fearon, P., & Lowyck, B. (2016). Development and Validation of a Self-Report Measure of Mentalizing: The Reflective Functioning Questionnaire. *PloS One*, *11*(7), e0158678. https://doi.org/10.1371/journal.pone.0158678

Furr, M. (2011). *Scale Construction and Psychometrics for Social and Personality Psychology*. Sage Publications.

Giesen-Bloo, J., van Dyck, R., Spinhoven, P., van Tilburg, W., Dirksen, C., van Asselt, T., Kremers, I., Nadort, M., & Arntz, A. (2006). Outpatient Psychotherapy for Borderline Personality Disorder. *Archives of General Psychiatry*, *63*(6), 649. https://doi.org/10.1001/archpsyc.63.6.649

Gordon-King, K., Schweitzer, R. D., & Dimaggio, G. (2018). Metacognitive Interpersonal Therapy for Personality Disorders Featuring Emotional Inhibition: A Multiple Baseline Case Series. *The Journal of Nervous and Mental Disease*, *206*(4), 263–269. https://doi.org/10.1097/NMD.0000000000000789

Greenberg, D. M., Kolasi, J., Hegsted, C. P., Berkowitz, Y., & Jurist, E. L. (2017). Mentalized affectivity: A new model and assessment of emotion regulation. *PloS One*, *12*(10), e0185264–e0185264. https://doi.org/10.1371/journal.pone.0185264

Greenberg, L. S., & Bolger, E. (2001). An emotion-focused approach to the overregulation of emotion and emotional pain. *Journal of Clinical Psychology*, *57*(2), 197–211. https://doi.org/10.1002/1097-4679(200102)57:2<197::AID-JCLP6>3.0.CO;2-O

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348

Gross, James J, & Thompson, R. A. (2007). Emotion Regulation: conceptual foundations. In James J Gross (Ed.), *Handbook of Emotion Regulation*. Guildford Publications.

Gude, T., Monsen, J. T., & Hoffart, A. (2001). Schemas, Affect Consciousness, and Cluster C Personality Pathology: A Prospective One-Year Follow-Up Study of Patients in a Schema-Focused Short-Term Treatment Program. *Psychotherapy Research*, *11*(1), 85–98. https://doi.org/10.1093/ptr/11.1.85

Hellwig, S., Roberts, R. D., & Schulze, R. (2020). A new approach to assessing emotional understanding. In *Psychological Assessment* (Vol. 32, Issue 7, pp. 649–662). American Psychological Association. https://doi.org/10.1037/pas0000822

Hemphill, J. (2003). Interpreting the Magnitude of Correlation Coefficients. *The American Psychologist*, *58*, 78–79. https://doi.org/10.1037/0003-066X.58.1.78

Herpertz, S. C., Schwenger, U. B., Kunert, H. J., Lukas, G., Gretzer, U., Nutzmann, J., Schuerkens, A., & Sass, H. (2000). Emotional responses in patients with borderline as compared with avoidant personality disorder. *Journal of Personality Disorders*, *14*(4), 339–351. https://doi.org/10.1521/pedi.2000.14.4.339

Hill, C. E., & Lambert, M. J. (2004). Methodological issues in studying psychotherapy process and outcomes. In M. J. Lambert (Ed.), *Bergin & Garfield's handbook of psychotherapy and behaviour change* (pp. 84–135). John Wiley & Sons.

Hopwood, C. J., Morey, L. C., Gunderson, J. G., Skodol, A. E., Tracie Shea, M., Grilo, C. M., & McGlashan, T. H. (2006). Hierarchical relationships between borderline, schizotypal, avoidant and obsessive-compulsive personality disorders. *Acta Psychiatrica Scandinavica*, *113*(5), 430–439. https://doi.org/10.1111/j.1600-0447.2005.00683.x

Horowitz, L. M., Alden, L. E., Wiggins, J. S., & Pincus, A. L. (2000). *Inventory of Interpersonal Problems Manual*. The Psychological Corporation.

IBM Corp. (2019). *IBM SPSS Statistics for Windows, Version 26.0.* IBM Corp.

Izard, C. E. (1977). *Human emotions*. Plenum Press.

Izard, C. E. (1991). *The Psychology Of Emotions.* Plenum Press.

Izard, C. E. (2007). Basic Emotions, Natural Kinds, Emotion Schemas, and a New Paradigm. *Perspectives on Psychological Science : A Journal of the Association for Psychological Science*, *2*(3), 260–280. https://doi.org/10.1111/j.1745-6916.2007.00044.x

Izard, C. E. (2009). Emotion Theory and Research: Highlights, Unanswered Questions, and Emerging Issues. *Annual Review of Psychology*, *60*(1), 1–25. https://doi.org/10.1146/annurev.psych.60.110707.163539

Izard, C. E., & Ackerman, B. P. (2000). Motivational, organizational and regulatory functions of discrete emotions. In M. Lewis & J. M. Haviland Jones (Eds.), *Handbook of emotions* (2nd ed.). Guilford Press.

Johansen, M. S., Normann-Eide, E., Normann-Eide, T., Klungsøyr, O., Kvarstein, E. H., & Wilberg, T. (2016). Relationship Between Affect Consciousness and Personality Functioning in Patients With Personality Disorders: A Prospective Study. *Journal of Personality Disorders*, *30*(5), 633–652. https://doi.org/10.1521/pedi_2015_29_220

Johansen, M. S., Normann-Eide, E., Normann-Eide, T., & Wilberg, T. (2013). Emotional dysfunction in avoidant compared to borderline personality disorder: a study of affect consciousness. *Scandinavian Journal of Psychology*, *54*(6), 515–521. https://doi.org/10.1111/sjop.12076

Joyce, A. S., Fujiwara, E., Cristall, M., Ruddy, C., & Ogrodniczuk, J. S. (2013). Clinical correlates of alexithymia among patients with personality disorder. *Psychotherapy Research*, *23*(6), 690–704. https://doi.org/10.1080/10503307.2013.803628

Jurist, E. L. (2005). Mentalized affectivity. *Psychoanalytic Psychology*, *22*(3), 426–444. https://doi.org/10.1037/0736-9735.22.3.426

Karterud, S., Pedersen, G., Johansen, M., Wilberg, T., Davis, K., & Panksepp, J. (2016). Primary emotional traits in patients with personality disorders. *Personality and Mental Health*, *10*(4), 261–273. https://doi.org/10.1002/pmh.1345

Kongerslev, M. T., Chanen, A. M., & Simonsen, E. (2015). Personality Disorder in Childhood and Adolescence comes of Age: a Review of the Current Evidence and Prospects for Future Research. *Scandinavian Journal of Child and Adolescent Psychiatry and Psychology*, *3*(1), 31–48. https://doi.org/10.21307/sjcapp-2015-004

Kooiman, C. ., Spinhoven, P., & Trijsburg, R. . (2002). The assessment of alexithymia. *Journal of Psychosomatic Research*, *53*(6), 1083–1090. https://doi.org/10.1016/S0022-3999(02)00348-3

Kröger, C., Vonau, M., Kliem, S., & Kosfelder, J. (2011). Emotion Dysregulation as a Core Feature of Borderline Personality Disorder: Comparison of the Discriminatory Ability of Two Self-Rating Measures. *Psychopathology*, *44*(4), 253–260. https://doi.org/10.1159/000322806

Krystal, H. (1974). The genetic development of affects and affect regression. *The Annual of Psychoanalysis*, *2*, 98–126.

Krystal, H. (2015). *Integration and Self Healing: Affect, Trauma, Alexithymia*. Routledge.

Kvarstein, E. H., Antonsen, B. T., Klungsøyr, O., Pedersen, G., & Wilberg, T. (2021). Avoidant personality disorder and social functioning: A longitudinal, observational study investigating predictors of change in a clinical sample. *Personality Disorders: Theory, Research, and Treatment*. https://doi.org/10.1037/per0000471

Lambert, M., Bergin, A., & Garfield, S. (2004). Introduction and historical overview.

In *Bergin and Garfield's handbook of psychotherapy and behavior change* (5th ed, pp. 3–15). Wiley.

Lane, R. D., Quinlan, D. M., Schwartz, G. E., Walker, P. A., & Zeitlin, S. B. (1990). The Levels of Emotional Awareness Scale: A Cognitive-Developmental Measure of Emotion. *Journal of Personality Assessment*, *55*(1–2), 124–134. https://doi.org/10.1080/00223891.1990.9674052

Lech, B., Andersson, G., & Holmqvist, R. (2008). Consciousness about own and others' affects: A study of the validity of a revised version of the Affect Consciousness Interview. *Scandinavian Journal of Psychology*, *49*(6), 515–521. https://doi.org/10.1111/j.1467-9450.2008.00666.x

Lech, B., Holmqvist, R., & Andersson, G. (2012). Affect consciousness and eating disorders. Short term stability and subgroup characteristics. *European Eating Disorders Review*, *20*(1), e50–e55. https://doi.org/10.1002/erv.1091

Leible, T. L., & Snell, W. E. (2004). Borderline personality disorder and multiple aspects of emotional intelligence. *Personality and Individual Differences*, *37*(2), 393–404. https://doi.org/https://doi.org/10.1016/j.paid.2003.09.011

Lesser, I. M. (1981). A Review of the Alexithymia Concept. *Psychosomatic Medicine*, *43*(6), 531–543. https://doi.org/10.1097/00006842-198112000-00009

Lewis-Beck, M., Bryman, A., & Futing Liao, T. (2004). *The SAGE Encyclopedia of Social Science Research Methods*. https://doi.org/10.4135/9781412950589 NV - 0

Linehan, M. M. (1993). Cognitive-behavioral treatment of borderline personality disorder. In *Cognitive-behavioral treatment of borderline personality disorder.* Guilford Press.

Livesley, J. W., & Larstone, R. (2018). Etiology and development. In J. W. Livesley & R. Larstone (Eds.), *Handbook of Personality Disorders, Second Edition: Theory, Research, and Treatment* (pp. 229–233). Guilford Press.

Loewenstein, G. (2007). Affect regulation and affective forecasting. In James J Gross (Ed.), *Handbook of Emotion Regulation*. Guildford Publications.

Luborsky, L., Diguer, L., Luborsky, E., McLellan, A. T., Woody, G., & Alexander, L. (1993). Psychological health-sickness (PHS) as a predictor of outcomes in dynamic and other psychotherapies. In *Journal of Consulting and Clinical Psychology* (Vol. 61, Issue 4, pp. 542–548). American Psychological Association. https://doi.org/10.1037/0022-006X.61.4.542

Mehlum, L., Friis, S., Irion, T., Johns, S., Karterud, S., Vaglum, P., & Vaglum, S.

(1991). Personality disorders 2-5 years after treatment: a prospective follow-up study. *Acta Psychiatrica Scandinavica*, *84*(1), 72–77. https://doi.org/10.1111/j.1600-0447.1991.tb01423.x

Messick, S. (1989). Validity. In R. L. Linn (Ed.), *Educational Measurement (3rd ed.).* (pp. 13–104). American Council on education and Macmillan.

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist*, *50*(9), 741–749. https://doi.org/10.1037/0003-066X.50.9.741

Monsen J. T., Eilertsen, D. E., Melgård, T., & Ødegård, P. (1996). Affects and affect consciousness : initial experiences with the assessment of affect integration. *The Journal of Psychotherapy Practice and Research*, *5*(3), 238–249. http://www.ncbi.nlm.nih.gov/pubmed/22700292

Monsen, J. T., Hagtvet, K. A., Havik, O. E., & Eilertsen, D. E. (2006). Circumplex structure and personality disorder correlates of the Interpersonal Problems model (IIP-C): construct validity and clinical implications. *Psychological Assessment*, *18*(2), 165–173. https://doi.org/10.1037/1040-3590.18.2.165

Monsen, J. T., Ødegård, P., & Melgård, T. (1986). *Affektbevissthetsintervjuet, instruksjoner for intervju og skåring.* Unipublished manual, University of Oslo.

Monsen, K., & Monsen, J. T. (2000). Chronic pain and psychodynamic body therapy: A controlled outcome study. *Psychotherapy: Theory, Research, Practice, Training*, *37*(3), 257–269. https://doi.org/10.1037/h0087658

Monsen J. T., & Monsen, K. (1999). Affects an affect consciousness: A psychotherapy model integrating Silvan Tomkins' affect- and script theory witin the framework of self psychology. In A. Goldberg (Ed.), *Pluralism in self psychology: Progress in self psychology* (p. Vol 15, pp. 287–307). Analytic Press.

Monsen J. T., Monsen, K., Solbakken, O. A., & Hansen, R. S. (2008). *Affect Consciousness Interview (ACI) and the Affect Consciusness Scale (ACS): Instructions for the interview and rating.* Available from the Department of Psychology, University of Oslo. https://doi.org/10.1037/t51464-000

Monsen J. T., Ødegård, P., & Melgård, T. (1989). Major psychological disorders and changes after intensive psychotherapy: Findings from the Tøyen project, Oslo. *Psychoanalysis & Psychotherapy*, *7*(2), 171–180.

Monsen J. T., Odland, T., Faugli, A., Daae, E., & Eilertsen, D. E. (1995a). Personality disorders and psychosocial changes after intensive psychotherapy: A

prospective follow-up study of an outpatient psychotherapy project, 5 years after end of treatment. In *Scandinavian Journal of Psychology* (Vol. 36, Issue 3, pp. 256–268). Blackwell Publishing. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc3&NEWS=N&AN=1996-34908-001

Monsen J. T., Odland, T., Faugli, A., Daae, E., & Eilertsen, D. E. (1995b). Personality Disorders: Changes and Stability after Intensive Psychotherapy Focusing on Affect Consciousness. *Psychotherapy Research*, *5*(1), 33–48. https://doi.org/10.1080/10503309512331331126

Moran, P., Jenkins, R., Tylee, A., Blizard, R., & Mann, A. (2000). The prevalence of personality disorder among UK primary care attenders. *Acta Psychiatrica Scandinavica*, *102*(1), 52–57. https://doi.org/10.1034/j.1600-0447.2000.102001052.x

Moroni, F., Procacci, M., Pellecchia, G., Semerari, A., Nicolò, G., Carcione, A., Pedone, R., & Colle, L. (2016). Mindreading Dysfunction in Avoidant Personality Disorder Compared With Other Personality Disorders. *The Journal of Nervous and Mental Disease*, *204*(10), 752–757. https://doi.org/10.1097/NMD.0000000000000536

Nemiah, J. C., & Sifneos, P. E. (1970). Psychosomatic Illness: A Problem in Communication. *Psychotherapy and Psychosomatics*, *18*(1–6), 154–160. https://doi.org/10.1159/000286074

Nicolo, G., Semerari, A., Lysaker, P. H., Dimaggio, G., Conti, L., D'Angerio, S., Procacci, M., Popolo, R., & Carcione, A. (2011). Alexithymia in personality disorders: correlations with symptoms and interpersonal functioning. *Psychiatry Research*, *190*(1), 37–42. https://doi.org/10.1016/j.psychres.2010.07.046

Nordmo, M., Monsen, J. T., Høglend, P. A., & Solbakken, O. A. (2020). Investigating the dose–response effect in open-ended psychotherapy. *Psychotherapy Research*, 1–11. https://doi.org/10.1080/10503307.2020.1861359

Normann-Eide, E., Johansen, M. S., Normann-Eide, T., Egeland, J., & Wilberg, T. (2013). Is low affect consciousness related to the severity of psychopathology? A cross-sectional study of patients with avoidant and borderline personality disorder. *Comprehensive Psychiatry*, *54*(2), 149–157. https://doi.org/10.1016/j.comppsych.2012.07.003

Normann-Eide, E., Johansen, M. S., Normann-Eide, T., Egeland, J., & Wilberg, T. (2015). Personality Disorder and Changes in Affect Consciousness: A 3-Year Follow-Up Study of Patients with Avoidant and Borderline Personality Disorder. *PloS One*, *10*(12), e0145625.

https://doi.org/10.1371/journal.pone.0145625

Panksepp, J. (1998). *Affective Neuroscience. The Foundations of Human and Animal Emotions*. Oxford University Press.

Panksepp, J. (2000). Emotions as natural kinds within the mammalian brain. In M. Lewis & J. M. Haviland Jones (Eds.), *Handbook of emotions* (2nd ed., pp. 137–156). Guilford Press.

Panksepp, J. (2005). Affective consciousness: Core emotional feelings in animals and humans. *Consciousness and Cognition*, *14*(1), 30–80. https://doi.org/10.1016/j.concog.2004.10.004

Panksepp, J., & Watt, D. (2011). What is basic about basic emotions? Lasting lessons from affective neuroscience. *Emotion Review*, *3*(4), 387–396. https://doi.org/10.1177/1754073911410741

Preece, D. A., Becerra, R., Robinson, K., & Gross, J. J. (2020). The Emotion Regulation Questionnaire: Psychometric Properties in General Community Samples. *Journal of Personality Assessment*, *102*(3), 348–356. https://doi.org/10.1080/00223891.2018.1564319

Preece, D., Becerra, R., Robinson, K., & Dandy, J. (2018). Assessing Alexithymia: Psychometric Properties and Factorial Invariance of the 20-Item Toronto Alexithymia Scale in Nonclinical and Psychiatric Samples. *Journal of Psychopathology and Behavioral Assessment*, *40*(2), 276–287. https://doi.org/10.1007/s10862-017-9634-6

Reuter, M., Panksepp, J., Schnabel, N., Kellerhoff, N., Kempel, P., & Hennig, J. (2005). Personality and Biological Markers of Creativity. *European Journal of Personality*, *19*(2), 83–95. https://doi.org/10.1002/per.534

Salovey, P., & Mayer, J. D. (1990). Emotional Intelligence. *Imagination, Cognition and Personality*, *9*(3), 185–211. https://doi.org/10.2190/DUGG-P24E-52WK-6CDG

Samuels, J. (2011). Personality disorders: Epidemiology and public health issues. *International Review of Psychiatry*, *23*(3), 223–233. https://doi.org/10.3109/09540261.2011.588200

SCAN Advisory Committee. (2002). *Present state examination : kort version til klinisk brug* (3rd ed.). Glaxo Smith Kline.

Schoenleber, M., & Berenbaum, H. (2010). Shame aversion and shame-proneness in Cluster C personality disorders. *Journal of Abnormal Psychology*, *119*(1), 197–205. https://doi.org/10.1037/a0017982

Schoenleber, M., & Berenbaum, H. (2012). Aversion and proneness to shame in self- and informant-reported personality disorder symptoms. In *Personality Disorders: Theory, Research, and Treatment* (Vol. 3, Issue 3, pp. 294–304). Educational Publishing Foundation. https://doi.org/10.1037/a0025654

Shapiro, S. (1991). Affect integration in psychoanalysis: A clinical approach to self-destructive behavior. In *Bulletin of the Menninger Clinic* (Vol. 55, Issue 3, pp. 363–374). Guilford Publications.

Simonsen, S., Eikenaes, I. U.-M., Bach, B., Kvarstein, E., Gondan, M., Møller, S. B., & Wilberg, T. (2020). Level of alexithymia as a measure of personality dysfunction in avoidant personality disorder. *Nordic Journal of Psychiatry*, 1–9. https://doi.org/10.1080/08039488.2020.1841290

Skevington, S. M., Lotfy, M., & O'Connell, K. A. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. A Report from the WHOQOL Group. *Quality of Life Research*, *13*(2), 299–310. https://doi.org/10.1023/B:QURE.0000018486.91360.00

Skevington, S. M., & McCrate, F. M. (2012). Expecting a good quality of life in health: assessing people with diverse diseases and conditions using the WHOQOL-BREF. *Health Expectations*, *15*(1), 49–62. https://doi.org/10.1111/j.1369-7625.2010.00650.x

Skodol, A. E., Pagona, M. E., Bender, D. S., Shea, M. T., Gunderson, J. G., Yen, S., Stout, R. L., Morey, L. C., Sanislow, C. A., Grilo, C. M., Zanarini, M. C., & McGlashan, T. H. (2005). Stability of functional impairment in patients with schizotypal, borderline, avoidant, or obsessive–compulsive personality disorder over two years. *Psychological Medicine*, *35*(3), 443–451. https://doi.org/10.1017/S003329170400354X

Skodol, Andrew E. (2012). Diagnosis and DSM-5: Work in progress. In T. Widiger (Ed.), *The Oxford Handbook of Personality Disorders* (pp. 35–57). Oxford University Press.

Skodol, Andrew E., Gunderson, J. G., McGlashan, T. H., Dyck, I. R., Stout, R. L., Bender, D. S., Grilo, C. M., Shea, M. T., Zanarini, M. C., Morey, L. C., Sanislow, C. A., & Oldham, J. M. (2002). Functional Impairment in Patients With Schizotypal, Borderline, Avoidant, or Obsessive-Compulsive Personality Disorder. *American Journal of Psychiatry*, *159*(2), 276–283. https://doi.org/10.1176/appi.ajp.159.2.276

Skodol, Andrew E., Morey, L. C., Bender, D. S., & Oldham, J. M. (2015). The Alternative DSM-5 Model for Personality Disorders: A Clinical Application. *American Journal of Psychiatry*, *172*(7), 606–613.

https://doi.org/10.1176/appi.ajp.2015.14101220

Slaby, J., & Stephan, A. (2008). Affective intentionality and self-consciousness. *Consciousness and Cognition*, *17*(2), 506–513. https://doi.org/10.1016/j.concog.2008.03.007

Solbakken, O. A. (2011). *Affect integration, psychopathology, and psychotherapy: Conceptual issues, construct validity, and the prediction of change*. University of Oslo, Norway.

Solbakken, O. A. (2013). Arbeid med følelser–integrerende element i psykoterapi. In I. K. Benum, E. Dalsgaard Axelsen, & E. Hartmann (Eds.), *God psykoterapi: et integrativt perspektiv* (pp. 142–171).

Solbakken, O. A., Hansen, R. S., Havik, O. E., & Monsen, J. T. (2011). Assessment of affect integration: Validation of the affect consciousness construct. *Journal of Personality Assessment*, *93*(3), 257–265. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc7&NE WS=N&AN=2011-08629-008

Solbakken, O. A., Hansen, R. S., Havik, O. E., & Monsen, J. T. (2012). Affect integration as a predictor of change: Affect consciousness and treatment response in open-ended psychotherapy. *Psychotherapy Research*, *22*(6), 656–672. https://doi.org/10.1080/10503307.2012.700871

Solbakken, O. A., Hansen, R. S., & Monsen, J. T. (2011). Affect integration and reflective function: Clarification of central conceptual issues. *Psychotherapy Research*, *21*(4), 482–496. https://doi.org/10.1080/10503307.2011.583696

Solbakken, O. A., & Monsen, J. (2021). Validation of a short form of the Affect Integration Inventory. *International Journal of Psychology & Psychological Therapy*, *21*(1), 107–122.

Solbakken, O. A., Rauk, M., Solem, A., Lødrup, W., & Monsen, J. T. (2017). Tell me how you feel and I will tell you who you are : First validation of the affect integration inventory. *Scandinavian Psychologist*, *4*(e2), 1–31.

Spinhoven, P., Bamelis, L., Molendijk, M., Haringsma, R., & Arntz, A. (2009). Reduced specificity of autobiographical memory in Cluster C personality disorders and the role of depression, worry, and experiential avoidance. *Journal of Abnormal Psychology*, *118*(3), 520–530. https://doi.org/10.1037/a0016393

StataCorp. (2019). *Stata Statistical Software: Release 16*. College Station, TX: StataCorp LLC.

StataCorp. (2015). *Stata Statistical Software: Release 14*. College Station, TX:

StataCorp LP.

Stern, D. N. (1985). *The interpersonal world of the infant : a view from psychoanalysis and development psychology.* Basic Books.

Stolorow, R. D., & Atwood, G. E. (1992). *Contexts of being: the intersubjective foundations of psychological life*. Analytic Press.

Stolorow, R. D., Atwood, G. E., & Brandchaft, B. (1987). *Psychoanalytic treatment: an intersubjective approach*. Analytic Press.

Taarvig, E., Solbakken, O. A., Grova, B., & Monsen, J. T. (2015). Affect Consciousness in children with internalizing problems: Assessment of affect integration. *Clinical Child Psychology and Psychiatry*, *20*(4), 591–610. https://doi.org/10.1177/1359104514538434

Taarvig, E., Solbakken, O. A., Grova, B., & Monsen, J. T. (2016). Exploring affect integration in children with anxiety disorders: A pilot study. *Psychology of Consciousness: Theory, Research, and Practice*, *3*(4), 338–356. https://doi.org/10.1037/cns0000108

Taylor, C. T., Laposa, J. M., & Alden, L. E. (2004). Is avoidant personality disorder more than just social avoidance? *Journal of Personality Disorders*, *18*(6), 571–594. https://doi.org/10.1521/pedi.18.6.571.54792

Tingey, R., Lambert, M., Burlingame, G., & Hansen, N. (1996). Assessing Clinical Significance: Proposed Extensions to Method. *Psychotherapy Research*, *6*(2), 109–123. https://doi.org/10.1080/10503309612331331638

Tomkins, S. S. (1995). Script Theory. In E. V. Demos (Ed.), *Exploring Affect. The selected writings of Silvan Tomkins*. University of Cambridge Press.

Tomkins, S. S. (2008a). *Affect imagery consciousness: The complete edition. Volumes I and II*. Springer Publishing Company.

Tomkins, S. S. (2008b). *Affect imagery consciousness: the complete edition. Volumes III and IV*. Springer Publishing Company.

Torgersen, S., Kringlen, E., & Cramer, V. (2001). The Prevalence of Personality Disorders in a Community Sample. *Archives of General Psychiatry*, *58*(6), 590. https://doi.org/10.1001/archpsyc.58.6.590

Tracey, T., Rounds, J., & Gurtman, M. (1996). Examination of the General Factor with the Interpersonal Circumplex Structure: Application to the Inventory of Interpersonal Problems. *Multivariate Behavioral Research - MULTIVARIATE BEHAV RES*, *31*, 441–466. https://doi.org/10.1207/s15327906mbr3104_3

Tyrer, P., Mulder, R., Kim, Y.-R., & Crawford, M. J. (2019). The Development of the ICD-11 Classification of Personality Disorders: An Amalgam of Science, Pragmatism, and Politics. *Annual Review of Clinical Psychology*, *15*(1), 481–502. https://doi.org/10.1146/annurev-clinpsy-050718-095736

Tyrer, P., Reed, G. M., & Crawford, M. J. (2015). Classification, assessment, prevalence, and effect of personality disorder. *The Lancet*, *385*(9969), 717–726. https://doi.org/10.1016/S0140-6736(14)61995-4

Verheul, R., Andrea, H., Berghout, C. C., Dolan, C., Busschbach, J. J. V, van der Kroft, P. J. A., Bateman, A. W., & Fonagy, P. (2008). Severity Indices of Personality Problems (SIPP-118): development, factor structure, reliability, and validity. *Psychological Assessment*, *20*(1), 23–34. https://doi.org/10.1037/1040-3590.20.1.23

Verheul, R., Bartak, A., & Widiger, T. (2007). Prevalence and Construct Validity of Personality Disorder not Otherwise Specified (PDNOS). *Journal of Personality Disorders*, *21*(4), 359–370. https://doi.org/10.1521/pedi.2007.21.4.359

Volkert, J., Gablonski, T.-C., & Rabung, S. (2018). Prevalence of personality disorders in the general adult population in Western countries: systematic review and meta-analysis. *The British Journal of Psychiatry*, *213*(6), 709–715. https://doi.org/10.1192/bjp.2018.202

Waller, E., & Scheidt, C. E. (2006). Somatoform disorders as disorders of affect regulation: A development perspective. *International Review of Psychiatry*, *18*(1), 13–24. https://doi.org/10.1080/09540260500466774

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

Wilberg, T., Karterud, S., Pedersen, G., & Urnes, Ø. (2009). The impact of avoidant personality disorder on psychosocial impairment is substantial. *Nordic Journal of Psychiatry*, *63*(5), 390–396. https://doi.org/10.1080/08039480902831322

Winsper, C., Bilgin, A., Thompson, A., Marwaha, S., Chanen, A. M., Singh, S. P., Wang, A., & Furtado, V. (2020). The prevalence of personality disorders in the community: a global systematic review and meta-analysis. *The British Journal of Psychiatry*, *216*(2), 69–78. https://doi.org/10.1192/bjp.2019.166

World Health Organization. (2018). *International classification of diseases for mortality and morbidity statistics (11th Revision)*. Retrieved from https://icd.who.int/browse11/l-m/en.

World Health Organization. Division of Mental Health. (1996). *WHOQOL-BREF : introduction, administration, scoring and generic version of the assessment :*

field trial version, December 1996. World Health Organization. https://apps.who.int/iris/handle/10665/63529

World Medical Association. (2013). World Medical Association Declaration of Helsinki. *JAMA*, *310*(20), 2191. https://doi.org/10.1001/jama.2013.281053

Wupperman, P., Neumann, C. S., & Axelrod, S. R. (2008). Do Deficits in Mindfulness Underlie Borderline Personality Features and Core Difficulties? *Journal of Personality Disorders*, *22*(5), 466–482. https://doi.org/10.1521/pedi.2008.22.5.466

Wupperman, P., Neumann, C. S., Whitman, J. B., & Axelrod, S. R. (2009). The Role of Mindfulness in Borderline Personality Disorder Features. *The Journal of Nervous and Mental Disease*, *197*(10). https://journals.lww.com/jonmd/Fulltext/2009/10000/The_Role_of_Mindfulne ss_in_Borderline_Personality.9.aspx

Ye, G., Yao, F., Wen-Qing, F., & Kong, M. (2011). The relationships of self-esteem and affect of university students with avoidant personality disorder. *Chinese Mental Health Journal*, *25*, 141–145.

Young, D. A., Campbell, Z., Zakzanis, K. K., & Weinstein, E. (2003). A comparison between an interview and a self-report method of insight assessment in chronic schizophrenia. *Schizophrenia Research*, *63*(1–2), 103–109. https://doi.org/10.1016/S0920-9964(02)00378-X

Zimmerman, M., Rothschild, L., & Chelminski, I. (2005). The Prevalence of DSM-IV Personality Disorders in Psychiatric Outpatients. *American Journal of Psychiatry*, *162*(10), 1911–1918. https://doi.org/10.1176/appi.ajp.162.10.1911

APPENDICES

Appendix A. Papers

Paper I

Due to copyright issues the paper included in this Ph.D. thesis have been removed in the e-published version.

Appendix B. Affect Integration Inventory (dansk oversættelse)

Vejledning:

Formålet er, at du skal beskrive dig selv, sådan som du normalt er. Dette gør du ved at tage stilling til i hvor høj grad følgende udsagn, passer på dig som person og dit forhold til dine følelser. Graduer udsagnene alt efter hvor godt, beskrivelsen passer. Sæt ring om 9-tallet, hvis udsagnet er fuldstændig beskrivende for dig. Sæt derimod ring om 0, hvis udsagnet på ingen måde er beskrivende for dig.

		På ingen måder beskrivende	Fuldstændig beskrivende
1	Når der sker noget meget trist, kan jeg græde og føle mig lettet efterfølgende	0 1 2 3 4 5 6 7 8 9	
2	Når jeg er trist ender jeg ofte med at føle mig håbløs, opgivende eller deprimeret	0 1 2 3 4 5 6 7 8 9	
3	Når jeg er trist, er det som regel over vigtige ting, som er sket i mit liv	0 1 2 3 4 5 6 7 8 9	
4	Jeg tåler rimelig godt at være trist	0 1 2 3 4 5 6 7 8 9	
5	Jeg kan sørge, når jeg har brug for det	0 1 2 3 4 5 6 7 8 9	
6	Jeg kan dele min tristhed med andre og få støtte	0 1 2 3 4 5 6 7 8 9	
7	Som regel forstår jeg godt, at jeg bliver trist og hvorfor	0 1 2 3 4 5 6 7 8 9	
8	Jeg undertrykker som regel triste følelser	0 1 2 3 4 5 6 7 8 9	

9	Jeg synes, det er rart at snakke med andre om de ting, der gør mig trist	0 1 2 3 4 5 6 7 8 9
10	Jeg kan som regel sige direkte til andre, at jeg føler mig trist	0 1 2 3 4 5 6 7 8 9
11	Når jeg bliver trist, føler jeg mig som regel tom	0 1 2 3 4 5 6 7 8 9
12	At føle tristhed er meget negativt for mig	0 1 2 3 4 5 6 7 8 9
13	Når jeg bliver vred, er der som regel god grund til det	0 1 2 3 4 5 6 7 8 9
14	Når jeg bliver vred, kan jeg sætte grænser og stå op for mig selv på en god måde	0 1 2 3 4 5 6 7 8 9
15	Når jeg er vred ender jeg ofte ud med at føle mig opgivende og dårlig	0 1 2 3 4 5 6 7 8 9
16	Når jeg bliver vred, forstår jeg som regel godt hvorfor	0 1 2 3 4 5 6 7 8 9
17	Der er sædvanligvis gode grunde til, at jeg bliver vred	0 1 2 3 4 5 6 7 8 9
18	Jeg synes det er ok at vise andre, at jeg er vred	0 1 2 3 4 5 6 7 8 9
19	Jeg kan på en direkte, men ordentlig måde sige, at jeg er vred over noget	0 1 2 3 4 5 6 7 8 9
20	Jeg er bange for at miste kontrollen over min vrede, eller bange for hvad der kan ske, hvis jeg bliver vred	0 1 2 3 4 5 6 7 8 9
21	Jeg forsøger at undertrykke min vrede	0 1 2 3 4 5 6 7 8 9
22	Når jeg er vred, markerer jeg mig på en god måde overfor andre	0 1 2 3 4 5 6 7 8 9
23	Jeg føler mig stærk og tydelig, når jeg er vred	0 1 2 3 4 5 6 7 8 9

24	Når jeg er vred, mister jeg let kontrollen og siger og gør ting, som jeg senere fortryder	0 1 2 3 4 5 6 7 8 9
25	Jeg har svært ved at tillade mig selv at være vred - selv når jeg har god grund til at være det	0 1 2 3 4 5 6 7 8 9
26	Jeg har let ved at føle ømhed og hengivenhed for andre	0 1 2 3 4 5 6 7 8 9
27	Når jeg føler ømhed for nogen, viser jeg det gerne	0 1 2 3 4 5 6 7 8 9
28	At jeg føler ømhed og nærhed skaber værdi i mit liv	0 1 2 3 4 5 6 7 8 9
29	Ømhed er en følelse, der er vanskelig for mig at genkende	0 1 2 3 4 5 6 7 8 9
30	Når jeg føler ømhed eller nærhed, bliver følelsen hurtigt væk fra mig igen	0 1 2 3 4 5 6 7 8 9
31	I mødet med andre har jeg vanskeligt ved at tillade mig selv at føle ømhed, nærhed eller hengivenhed	0 1 2 3 4 5 6 7 8 9
32	Det er let for mig at fortælle andre, at jeg føler varme, ømhed eller nærhed	0 1 2 3 4 5 6 7 8 9
33	Jeg har svært ved at stole på, at min kærlighed og omsorg vil blive modtaget på en god måde	0 1 2 3 4 5 6 7 8 9
34	Jeg bryder mig ikke om at mærke ømhed og nærhed i forhold til andre mennesker	0 1 2 3 4 5 6 7 8 9
35	Typisk tør jeg ikke tillade mig selv at blive rigtig glad for andre	0 1 2 3 4 5 6 7 8 9

36	Jeg synes det er svært at tage imod ømhed og omsorg fra andre	0 1 2 3 4 5 6 7 8 9
37	Jeg har let ved at vise andre, at jeg kan lide dem	0 1 2 3 4 5 6 7 8 9
38	Jeg viser det tydeligt, når jeg kan lide eller er glad for andre	0 1 2 3 4 5 6 7 8 9
39	Der er som regel gode grunde til, at jeg føler skyld eller dårlig samvittighed	0 1 2 3 4 5 6 7 8 9
40	Når jeg føler dårlig samvittighed over noget jeg har gjort, plejer jeg at gøre det godt igen	0 1 2 3 4 5 6 7 8 9
41	Jeg lider af meget skyldfølelse, som jeg egentlig ikke burde have	0 1 2 3 4 5 6 7 8 9
42	Hvis jeg har dårlig samvittighed, forsøger jeg at lade være med at tænke på det	0 1 2 3 4 5 6 7 8 9
43	Jeg forstår som regel, at jeg føler dårlig samvittighed og hvorfor	0 1 2 3 4 5 6 7 8 9
44	Dårlig samvittighed er for mig et meningsfuldt signal om, at jeg har gjort noget uheldigt	0 1 2 3 4 5 6 7 8 9
45	Når jeg føler skyld eller dårlig samvittighed, tager jeg ansvar for det og løser det	0 1 2 3 4 5 6 7 8 9
46	Jeg vil helst ikke vise andre, at jeg har dårlig samvittighed	0 1 2 3 4 5 6 7 8 9
47	Når jeg føler skyldfølelse, kan jeg sige det direkte og tydeligt	0 1 2 3 4 5 6 7 8 9
48	Jeg er god til at sige undskyld, når det er nødvendigt	0 1 2 3 4 5 6 7 8 9

49	Jeg har svært ved at sige undskyld selvom jeg inderst inde synes, at jeg burde gøre det	0 1 2 3 4 5 6 7 8 9
50	Jeg lider af alt for meget dårlig samvittighed	0 1 2 3 4 5 6 7 8 9
51	Der er som regel gode grunde til, at jeg bliver bange eller ængstelig	0 1 2 3 4 5 6 7 8 9
52	Jeg er bange for mange ting, som jeg egentlig ikke burde være bange for	0 1 2 3 4 5 6 7 8 9
53	Jeg bliver nogle gange fyldt af en overvældende uro eller angst	0 1 2 3 4 5 6 7 8 9
54	For mig udvikler frygt og angst sig ofte til panik	0 1 2 3 4 5 6 7 8 9
55	Jeg opdager først min angst, når følelsen er blevet meget stærk	0 1 2 3 4 5 6 7 8 9
56	Når jeg er bange eller ængstelig tænker jeg ofte, at jeg overreagerer	0 1 2 3 4 5 6 7 8 9
57	Jeg vil helst ikke, at andre skal se, at jeg er bange eller ængstelig	0 1 2 3 4 5 6 7 8 9
58	Hvis jeg bliver bange for noget, fortæller jeg det som regel til andre	0 1 2 3 4 5 6 7 8 9
59	Når jeg er bange eller ængstelig, er jeg god til at berolige mig selv	0 1 2 3 4 5 6 7 8 9
60	Jeg har meget irrationel angst og bekymring	0 1 2 3 4 5 6 7 8 9
61	Jeg er god til at sætte ord på min følelse af ængstelse eller frygt	0 1 2 3 4 5 6 7 8 9
62	Jeg synes, det kan være vanskeligt at skelne mellem ængstelse og andre ubehagelige følelser	0 1 2 3 4 5 6 7 8 9

63	Jeg plages af urimelig frygt og ængstelse	0 1 2 3 4 5 6 7 8 9
64	Når jeg føler mig flov eller skamfuld, er der som regel god grund til det	0 1 2 3 4 5 6 7 8 9
65	Jeg skammer mig urimeligt meget	0 1 2 3 4 5 6 7 8 9
66	Når jeg føler skam virker det ofte overvældende eller lammende på mig	0 1 2 3 4 5 6 7 8 9
67	Skamfølelse eller generthed får mig til at undgå vigtige sociale sammenhænge	0 1 2 3 4 5 6 7 8 9
68	Jeg vil ikke, at nogen skal se, at jeg er skamfuld eller flov	0 1 2 3 4 5 6 7 8 9
69	Jeg sætter som regel ord på, hvis jeg oplever noget som pinligt eller flovt	0 1 2 3 4 5 6 7 8 9
70	Jeg prøver som regel at skubbe følelsen af at være flov eller skamfuld væk	0 1 2 3 4 5 6 7 8 9
71	Skamfølelsen kan ofte være en nyttig rettesnor for, hvordan jeg skal opføre mig i mødet med andre	0 1 2 3 4 5 6 7 8 9
72	Når jeg har gjort noget flovt eller skamfuldt, er det vanskelig for mig at komme mig over det	0 1 2 3 4 5 6 7 8 9
73	Det er fint for mig at vise andre, at jeg føler mig skamfuld eller flov	0 1 2 3 4 5 6 7 8 9
74	Når jeg føler mig virkelig skamfuld eller flov, over noget jeg har gjort eller sagt, er jeg god til at rette op på det efterfølgende	0 1 2 3 4 5 6 7 8 9

75	Når jeg skammer mig, får det mig til at tænke, at der er noget alvorlig galt med mig	0 1 2 3 4 5 6 7 8 9
76	Når jeg er interesseret eller ivrig, får jeg altid ekstra energi og lyst til at gøre noget	0 1 2 3 4 5 6 7 8 9
77	Jeg har let ved at føle mig interesseret eller ivrig	0 1 2 3 4 5 6 7 8 9
78	Jeg føler, at min interesse for ting alt for ofte forsvinder	0 1 2 3 4 5 6 7 8 9
79	Jeg er god til at opsøge ting, som gør mig interesseret og ivrig	0 1 2 3 4 5 6 7 8 9
80	Jeg deler gerne min følelse af interesse og iver med andre	0 1 2 3 4 5 6 7 8 9
81	Det er let for mig, at handle på min følelse af interesse og iver	0 1 2 3 4 5 6 7 8 9
82	Jeg er god til at fortælle det til andre, når jeg føler interesse eller iver	0 1 2 3 4 5 6 7 8 9
83	Jeg er bange for at andre ikke vil dele min interesse, hvis jeg fortæller om den	0 1 2 3 4 5 6 7 8 9
84	Når jeg er interesseret eller ivrig, holder jeg mig ofte tilbage for ikke at tage for meget plads	0 1 2 3 4 5 6 7 8 9
85	Jeg har let ved at blive alt for ivrig	0 1 2 3 4 5 6 7 8 9
86	Jeg er mindre interesseret og ivrig end jeg ville ønske mig jeg var	0 1 2 3 4 5 6 7 8 9
87	Interesse og iver giver mig en følelse af, at det jeg gør, har værdi	0 1 2 3 4 5 6 7 8 9

| 88	Jeg har vanskeligt ved at glæde mig over ting i hverdagen	0 1 2 3 4 5 6 7 8 9
89	Når jeg er glad, bliver jeg ofte bange for, at det hurtigt går over igen	0 1 2 3 4 5 6 7 8 9
90	Jeg glæder mig over mange ting i livet og er god til at lade glæden være der	0 1 2 3 4 5 6 7 8 9
91	Jeg er dårlig til at opsøge ting, selvom jeg har glæde af dem	0 1 2 3 4 5 6 7 8 9
92	Jeg viser tydeligt, når jeg er glad	0 1 2 3 4 5 6 7 8 9
93	Det er let for andre at se det på mig, når jeg er glad	0 1 2 3 4 5 6 7 8 9
94	Jeg er god til at fortælle andre, når jeg er glad	0 1 2 3 4 5 6 7 8 9
95	Jeg formår ikke at glæde mig ordentlig over de gode ting i livet	0 1 2 3 4 5 6 7 8 9
96	Når jeg føler glæde og tilfredshed, er jeg god til at holde på følelsen	0 1 2 3 4 5 6 7 8 9
97	Når jeg føler glæde, er det vanskelig for mig at tro på, at det vil vare ved	0 1 2 3 4 5 6 7 8 9
98	Jeg synes ofte det er hårdt at forholde mig til andres glæde	0 1 2 3 4 5 6 7 8 9
99	Jeg har vanskeligt ved at vise glæde	0 1 2 3 4 5 6 7 8 9
100	Jeg bliver nogle gange overvældet af jalousi	0 1 2 3 4 5 6 7 8 9
101	Når jeg er jaloux, har jeg let ved at miste kontrollen over, hvad jeg siger og gør	0 1 2 3 4 5 6 7 8 9
102	Jeg har behandlet min partner dårligt på grund af jalousi	0 1 2 3 4 5 6 7 8 9

| 103	Når jeg føler jalousi, bekymrer jeg mig vældig meget over ting, som jeg ikke burde bekymre mig om	0 1 2 3 4 5 6 7 8 9
104	Jeg arbejder hårdt på at kontrollere jalousien og holde den i skak	0 1 2 3 4 5 6 7 8 9
105	Når jeg er jaloux, prøver jeg som regel at fortælle mig selv, at jeg ikke har nogen grund til at føle det	0 1 2 3 4 5 6 7 8 9
106	Jeg ønsker ikke, at nogen skal vide, at jeg føler jalousi	0 1 2 3 4 5 6 7 8 9
107	Jeg kan snakke med min partner på en ordentlig måde, hvis jeg føler mig jaloux	0 1 2 3 4 5 6 7 8 9
108	Når jeg bliver jaloux, kan det køre rundt i mit hoved uden, at jeg kan stoppe det	0 1 2 3 4 5 6 7 8 9
109	Når jeg føler jalousi, er der som regel gode grunde til det	0 1 2 3 4 5 6 7 8 9
110	Når jeg føler jalousi, kan jeg blive meget kontrollerende overfor min partner	0 1 2 3 4 5 6 7 8 9
111	Jeg lader som regel som om jeg ikke er jaloux, selv når jeg føler det stærkt	0 1 2 3 4 5 6 7 8 9
112	Jeg er bange for min egen jalousi	0 1 2 3 4 5 6 7 8 9

Appendix C. Supplementary material study I

Confirmatory factor analysis – Global AI model
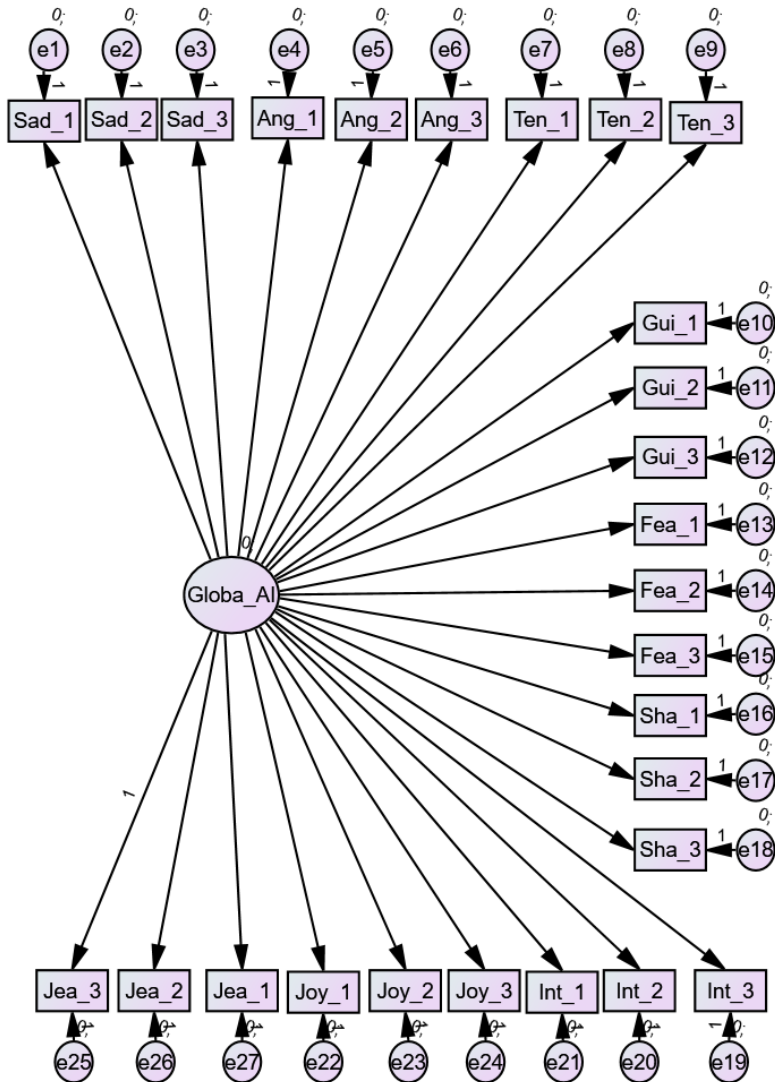
Confirmatory factor analysis – pleasent and unpleasent affect model
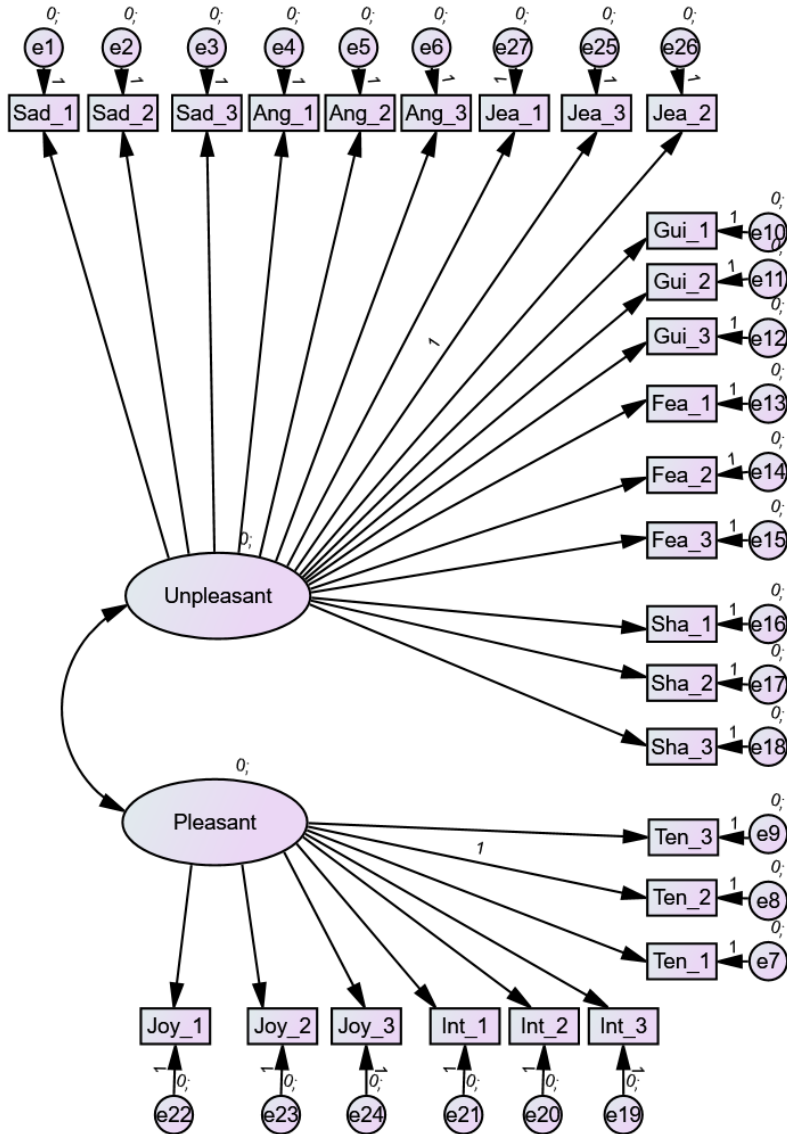
Confirmatory factor analysis - Discrete affect model
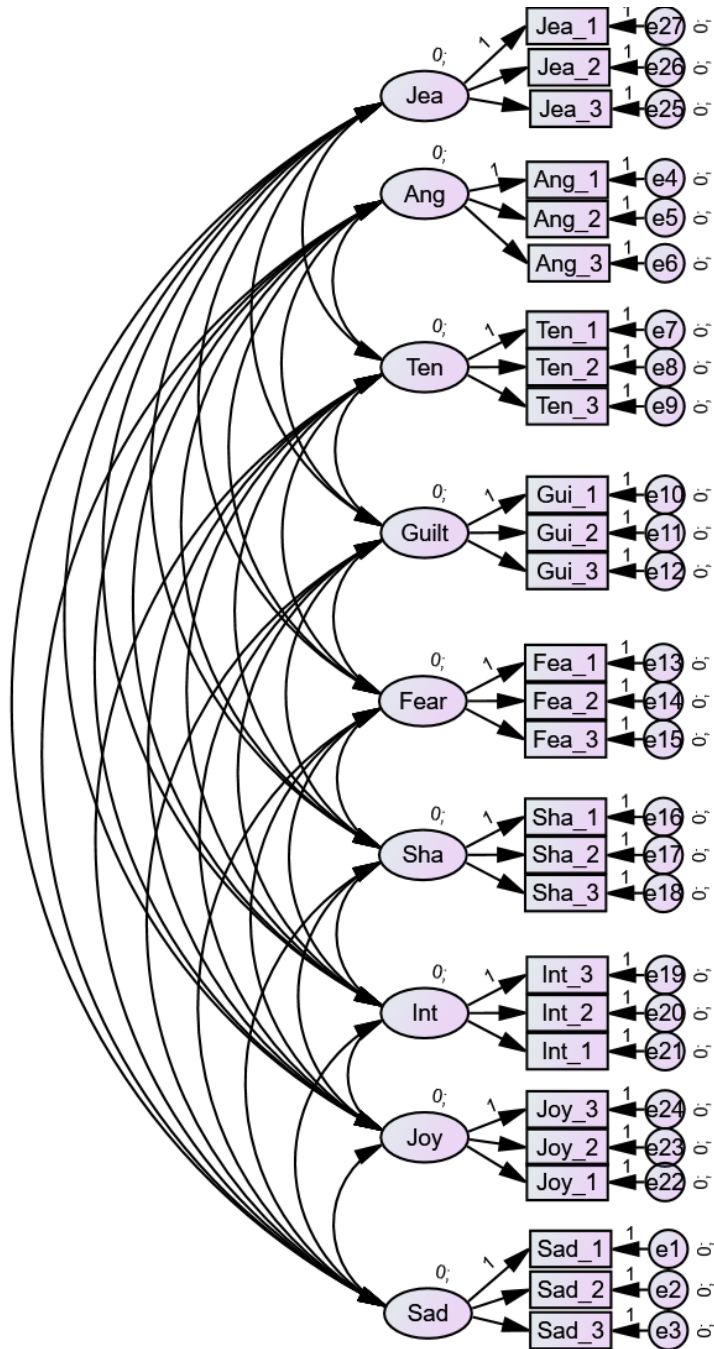
Factor loadings General AI model

Observed variable	Latent Factor	B	β	SE
Sadness_1	Global AI	0.60	0.43	0.20
Sadness_2	Global AI	0.78	0.53	0.23
Sadness_3	Global AI	0.71	0.47	0.22
Anger_1	Global AI	1.05	0.61	0.29
Anger_2	Global AI	1.35	0.73	0.35
Anger_3	Global AI	0.68	0.60	0.19
Tenderness_1	Global AI	1.08	0.49	0.33
Tenderness_2	Global AI	1.44	0.73	0.37
Tenderness_3	Global AI	1.22	0.62	0.33
Guilt_1	Global AI	0.49	0.35	0.19
Guilt_2	Global AI	0.80	0.45	0.26
Guilt_3	Global AI	1.06	0.55	0.31
Fear_1	Global AI	0.40	0.23	0.21
Fear_2	Global AI	0.59	0.41	0.20
Fear_3	Global AI	0.61	0.46	0.19
Shame_1	Global AI	0.92	0.49	0.29
Shame_2	Global AI	0.63	0.49	0.20
Shame_3	Global AI	1.08	0.62	0.30
Interest_3	Global AI	0.92	0.64	0.25
Interest_2	Global AI	0.95	0.53	0.29

Interest_1	Global AI	0.60	0.35	0.23
Joy_3	Global AI	1.32	0.65	0.35
Joy_2	Global AI	1.21	0.70	0.32
Joy_1	Global AI	1.08	0.70	0.29
Jealousy_1	Global AI	1.23	0.42	0.40
Jealousy_2	Global AI	0.88	0.40	0.29
Jealousy_3	Global AI	1.00	0.44	—

Note. Dashes indicate that standard error was not estimated. B: Unstandardized Factor Loading, β: Standardized Factor Loading, SE Standard Error.

Factor loadings for pleasant vs. unpleasant affects model

Observed variable	Latent Factor	B	β	SE
Sadness_1	Unpleasant	0.61	0.45	0.20
Sadness_2	Unpleasant	0.81	0.60	0.23
Sadness_3	Unpleasant	0.69	0.47	0.21
Anger_1	Unpleasant	1.05	0.63	0.29
Anger_2	Unpleasant	1.31	0.74	0.33
Anger_3	Unpleasant	0.65	0.60	0.18
Tenderness_1	Pleasant	0.78	0.47	0.19
Tenderness_2	Pleasant	1.00	0.67	—
Tenderness_3	Pleasant	0.88	0.60	0.17
Guilt_1	Unpleasant	0.57	0.43	0.19
Guilt_2	Unpleasant	0.81	0.48	0.26
Guilt_3	Unpleasant	1.06	0.57	0.30
Fear_1	Unpleasant	0.57	0.34	0.23
Fear_2	Unpleasant	0.61	0.44	0.20
Fear_3	Unpleasant	0.72	0.57	0.21
Shame_1	Unpleasant	0.99	0.56	0.29
Shame_2	Unpleasant	0.63	0.51	0.19
Shame_3	Unpleasant	1.07	0.71	0.29
Interest_3	Pleasant	0.68	0.63	0.13
Interest_2	Pleasant	0.83	0.61	0.17

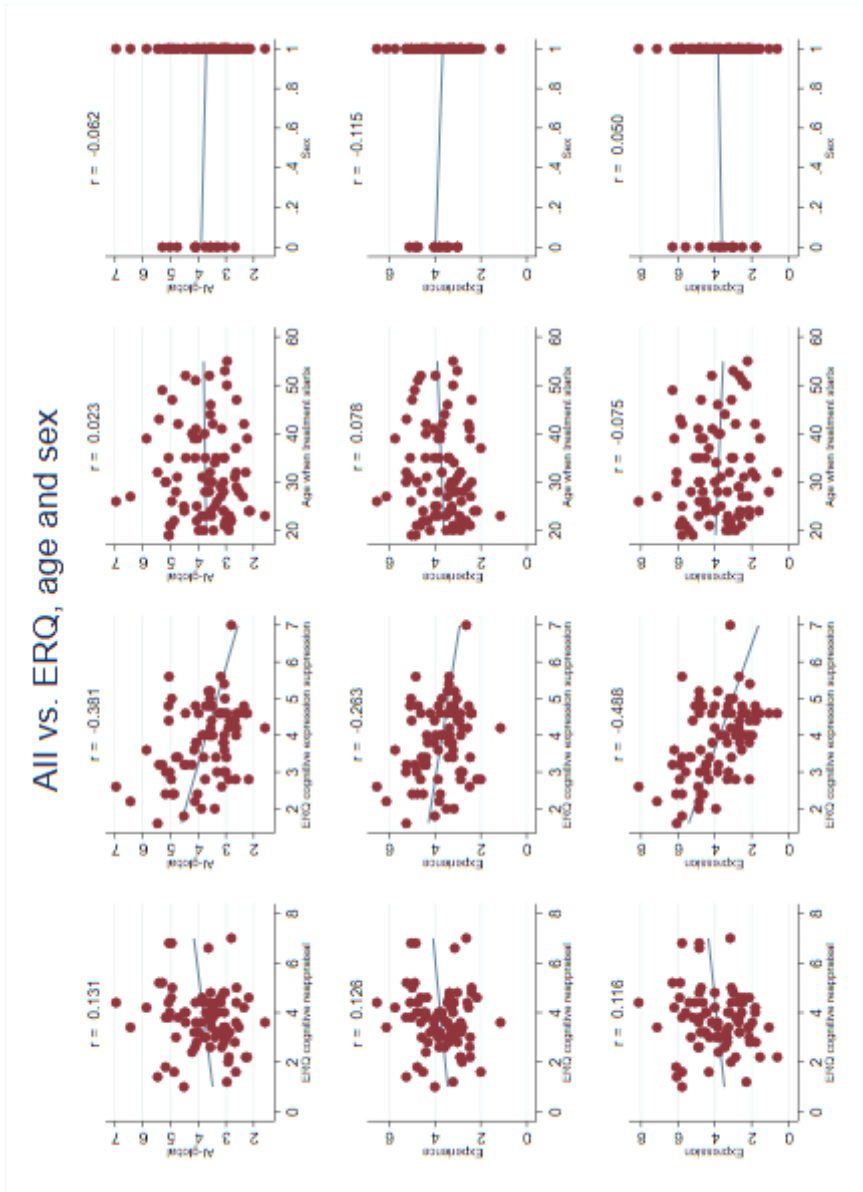|		B	β	SE
Interest_1	Pleasant	0.64	0.50	0.16
Joy_3	Pleasant	1.14	0.80	0.19
Joy_2	Pleasant	1.07	0.83	0.17
Joy_1	Pleasant	0.97	0.78	0.16
Jealousy_1	Unpleasant	1.21	0.43	0.37
Jealousy_2	Unpleasant	0.89	0.43	0.28
Jealousy_3	Unpleasant	1.00	0.46	—

Note. Dashes indicate that standard error was not estimated. B: Unstandardized Factor Loading, β: Standardized Factor Loading, SE Standard Error.
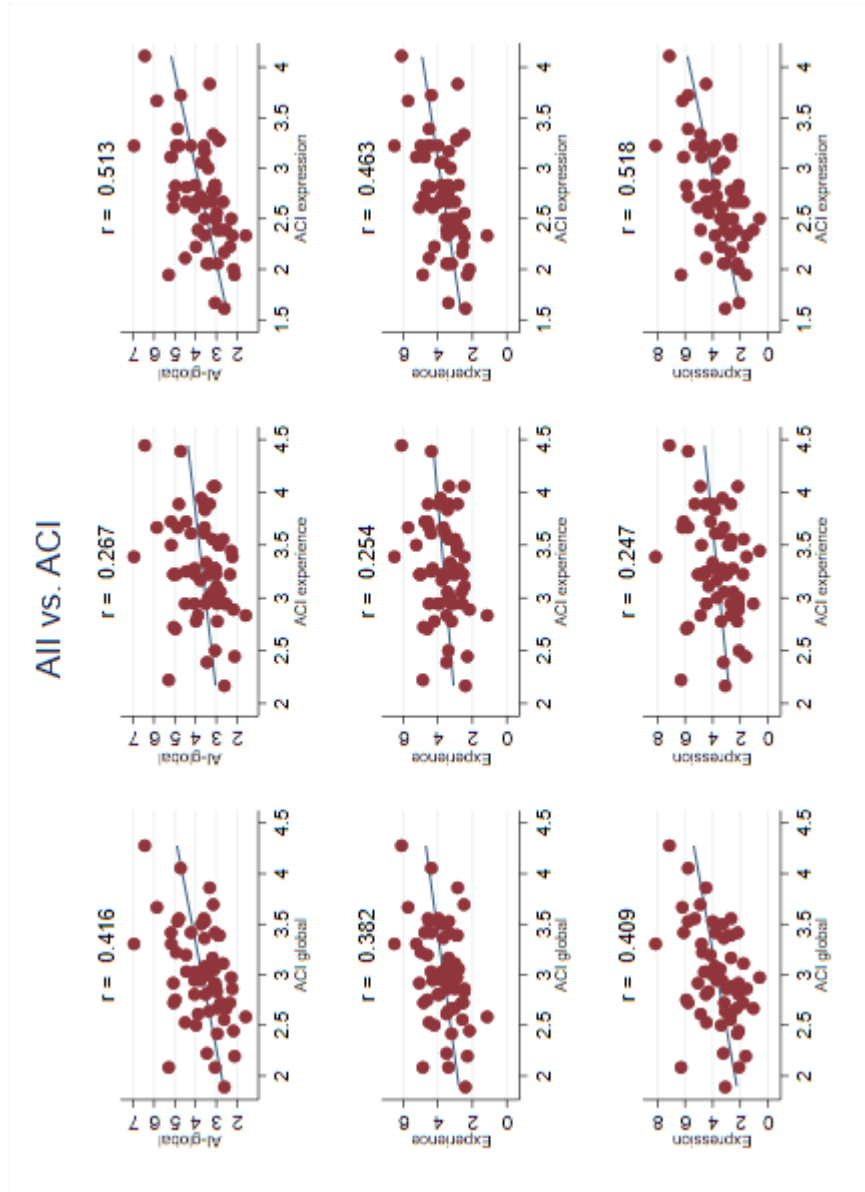
Principal factor analysis of scores from the AII; The exploratory factor analysis produced a nine-factor solution. Before rotation, the factors accounted for 77.9 % of the variance in the scores. The solution was rotated with various common rotation methods, all producing highly similar results. The clearest representation of the internal domain of AII-ratings, closely approximating criteria for simple factor structure (all factors having high loadings only on variables central to the factor in question) was obtained with equamax rotation.
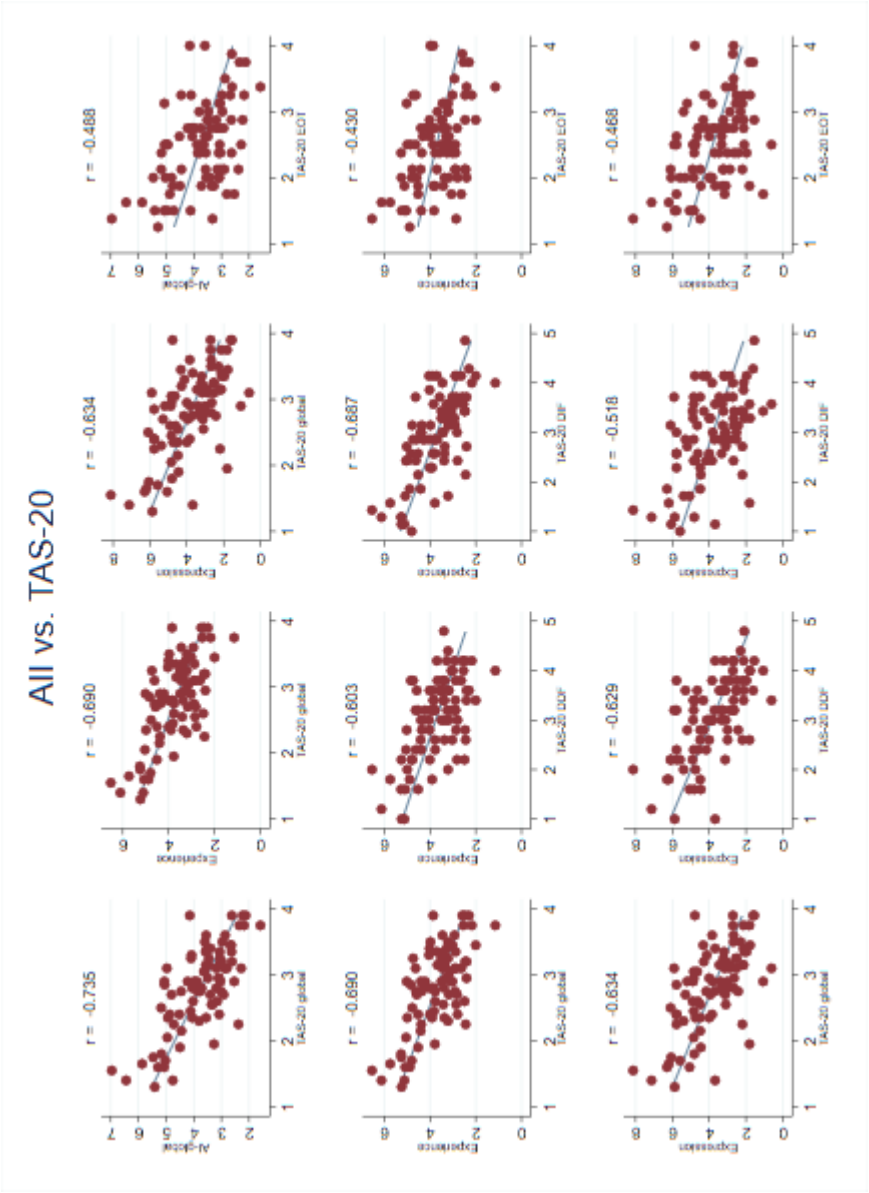
	Factor								
	1	2	3	4	5	6	7	8	9
Jea_1	**0,92**	0,12	0,06	0,01	0,03	0,09	0,03	0,16	0,04
Jea_3	**0,87**	0,07	0,03	0,16	0,13	0,11	0,09	0,10	0,00
Jea_2	**0,79**	0,10	-0,04	0,10	0,05	0,26	0,00	-0,02	0,18
Joy_1	0,08	**0,84**	0,18	0,17	0,13	0,14	0,02	0,11	0,16
Joy_3	0,22	**0,70**	0,28	0,14	0,05	0,06	0,21	0,13	0,20
Joy_2	0,02	**0,65**	0,37	0,23	0,11	0,16	0,13	0,19	0,10
Int_1	-0,16	0,28	**0,71**	0,04	-0,16	0,15	-0,04	0,08	0,01
Int_2	-0,02	0,29	**0,70**	0,07	0,04	0,11	0,02	0,19	0,14
Int_3	0,31	0,11	**0,70**	0,21	0,23	0,03	0,07	0,19	0,15
Ten_1	-0,01	0,14	0,06	**0,74**	-0,11	0,09	0,15	0,23	0,04
Ten_3	0,15	0,23	0,11	**0,67**	-0,05	0,23	0,13	0,11	0,21
Ten_2	0,19	0,17	0,23	**0,61**	0,16	0,11	0,13	0,23	0,30
Fea_1	-0,02	0,01	0,03	-0,24	**0,75**	0,05	0,16	0,12	0,12
Fea_2	0,13	0,14	0,02	0,20	**0,64**	0,07	0,06	0,03	0,13
Fea_3	0,12	0,12	-0,02	-0,13	**0,58**	0,12	0,10	0,30	0,38
Sad_2	0,09	0,10	0,01	0,13	0,01	**0,76**	0,09	0,29	0,19

Sad_1	0,18	0,13	0,10	0,01	0,02	**0,72**	0,03	0,09	0,10
Sad_3	0,14	0,08	0,15	0,26	0,18	**0,52**	0,17	0,01	-0,02
Gui_1	-0,02	0,01	0,01	-0,03	0,20	0,04	**0,77**	0,08	0,19
Gui_2	0,00	0,11	0,06	0,19	0,06	0,12	**0,65**	0,18	0,05
Gui_3	0,28	0,21	-0,15	0,29	-0,07	0,08	**0,57**	0,29	0,17
Ang_1	0,03	0,06	0,11	0,24	0,17	0,07	0,19	**0,65**	0,23
Ang_2	0,02	0,18	0,25	0,25	0,19	0,25	0,22	**0,65**	0,17
Ang_3	0,28	0,24	0,27	0,03	0,04	0,10	0,15	**0,43**	0,20
Sha_3	0,08	0,25	0,08	0,16	0,11	0,12	0,17	0,23	**0,63**
Sha_1	0,01	0,04	0,05	0,09	**0,51**	0,01	0,10	0,22	**0,56**
Sha_2	-0,07	-0,03	0,29	0,14	0,25	**0,43**	0,34	-0,14	**0,43**

Note. Principal Axis Factoring, Equamax rotation with Kaiser Normalization. Jea = Jealousy, Int = Interest, Ten = Tenderness, Fea = Fear, Sad = Sadness, Gui = Guilt, Ang = Anger, Sha = Shame. Numbers in variable list indicating discrete item parcels. Loadings > .40 in bold.

All vs. ERQ, age and sex

AII vs. ACI