

The development of a mentalization-based outcomes and research protocol for an adolescent inpatient unit

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The authors describe the development of a theory-driven assessment and research protocol at the Adolescent Treatment Program of The Menninger Clinic. First, the theoretical framework behind a mentalization-based model for assessment and treatment is described. Next, the process whereby measures were selected to operationalize key components of the mentalization-based model is discussed, including a brief discussion of each measure and assessment procedure. The next section describes the clinical and research use of the data collected. Here, the authors describe how outcomes assessment information is integrated into the clinical decision-making process, and they outline the research questions they aim to answer through the assessment protocol. The authors conclude with a section on the challenges, pitfalls, and future directions of the project. (Bulletin of the Menninger, 73[4], 311-338)

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The relevance of inpatient psychiatric care for children and adolescents has become a topic of debate in recent years. The Substance Abuse and Mental Health Administration's (2008) National Survey on Drug Use and Health, which is based on data from 22,433 persons aged 12 to 17 surveyed in the calendar year 2007, estimated that one in eight (12.5%) adolescents (i.e., youths aged 12 to 17) received treatment or counseling in a specialty mental health setting for problems with behavior or emotions (SAMHSA, 2008). Of these, 2% of adolescents received services in an overnight or longer stay hospital, 0.8% were treated in an overnight or longer stay residential treatment center, and 0.4% received care in an overnight or longer stay therapeutic foster care home. Clearly, over the past few decades, inpatient adolescent settings have experienced a significant decline in service use. Those inpatient units that have not closed have transitioned in order to better address the needs and realities of 21st-century mental health.

Against this background, three major transitions occurred at the Adolescent Treatment Program (ATP) of the Menninger Clinic in May 2008: (1) The unit shifted from a medium/long-term stay program focusing on residential treatment to a 3-6 week stay focusing on assessment and stabilization; (2) the aim of providing evidence-based practice was formulated, which meant that (3) a research protocol needed to be developed for outcomes and quality assurance purposes. The treatment team at ATP provides an intensive interdisciplinary assessment process accompanied by brief treatment designed to stabilize those symptoms that led to hospitalization. Assessment and treatment take place within the general framework of a mentalization-based approach (Bateman & Fonagy, 1999, 2001, 2004; Bleiberg, 2001; Bleiberg, Rossouw, & Sharp, in press). It is not the aim of this paper to describe the treatment approach; instead, we aim to describe in detail how we developed an assessment framework that forms the basis for a research protocol to evaluate outcomes and to ensure quality of treatment. However, we will briefly outline the main principles of the mentalization-based treatment approach which we aim to assess through our assessment and research protocol. Briefly, the mentalization-based framework for treatment of adolescents at the ATP involve a therapeutic focus on promoting the teen's and the

teen's family's capacity to mentalize in the context of emotional arousal in attachment relationships. Focusing on promoting mentalizing provides a conceptual framework that can hold together a range of therapeutic interventions in a coherent treatment model. As such, the treatment includes explicit psychoeducational mentalizing groups, as well as individual, family and group interventions with a mentalization focus. Two critical principals of treatment guide these interventions: (1) social "scaffolding" is provided to support the teens mentalizing capacities, in order to bridge the transition to greater mentalizing competence; and (2) families are helped to shift from coercive, nonmentalizing cycles to mentalizing discussions that can promote trust, security, attachment and effective communication and problem solving. For a detailed discussion of the mentalization-based treatment approach please see Bleiberg, Rossouw and Sharp (in press). Below, we describe the rationale, development and process of the assessment and research protocol developed to assess the mentalization-based treatment approach we follow at the ATP of the Menninger Clinic.

We begin by outlining the theoretical model that provides the rationale for the assessment protocol. Clinical outcome projects are rarely theory driven and focus mostly on demonstrating a reduction in symptoms at discharge. Although this approach is helpful in demonstrating effectiveness of treatment, it does not tell us *how* or *why* treatment works (Johannsson & Høgland, 2007). Thus, the mechanisms of change remain largely unknown. Given that we have chosen a mentalization-based treatment (MBT) approach (Bateman & Fonagy, 1999, 2001; Bleiberg, Rossouw & Sharp, in press), it was necessary to develop an assessment and research protocol that was not only theory driven, but also reflective of a the theory underlying a mentalization-based approach to treatment. Our assessment and research protocol is therefore designed to operationalize the various components of a mentalization-based theory for the development of psychopathology in adolescents.

Following the discussion of the theoretical basis for the assessment protocol, we describe the process whereby measures were selected, including a brief discussion of key measures and the assessment procedures. The next section describes the clinical and research use of the data collected. Here, we describe how outcomes assessment information is integrated into the clinical decision-mak-

ing process, and we outline the research questions we aim to answer through our assessment protocol. We conclude with a section on the challenges, pitfalls, and future directions of the project.

The theoretical basis for the assessment protocol

The notion that humans are somehow innately predisposed to interact socially dates back to Aristotle (350, BC/2000). Neurobiological data have since supported the idea that our brains are hard-wired to interact with other brains through our ability to mentalize (Adolphs, 2001, 2003; Brothers, 1990; Frith & Wolpert, 2004; Sharp, 2006). Further strengthening this notion is evidence that the social-cognitive precursors to the capacity to mentalize are observable in newborn infants (e.g., Franco, 1997; Gergely & Unoka, 2008; Walker-Andrews, 1997).

The concept of mentalizing (Fonagy, 1991) has been in use in psychoanalytic literature since the 1970s (Allen, 2003; Fonagy, 1991). During the 1980s and 1990s, it was picked up in the neurobiological literature (Morton & Frith, 1989), as well as in the developmental literature, where it has been used interchangeably with the more frequently used concept of “theory of mind.” Premack and Woodruff (1978) coined the term *theory of mind* to refer to the capacity to interpret the behavior of others within a mentalistic framework. Thus, mentalizing, or theory of mind, is defined as the set of processes by which children and adults understand themselves and others in terms of how they think, feel, perceive, imagine, react, attribute, infer, and so on. It is through this capacity that we are able to engage in the activities that humans value most, such as family, friendship, love, cooperation, play, and community (Sharp, Fonagy, & Goodyer, 2008a).

Given the essential role of mentalizing, it is easy to assume that all humans possess the capacity in equal measure. Starting with the seminal work of Baron-Cohen and colleagues in the 1980s demonstrating the mentalizing deficits associated with autism (e.g., Baron-Cohen, Leslie, & Frith, 1985), research over the past 25 years has demonstrated a range of mentalizing deficits and distortions associated with childhood disorders (for a comprehensive review, see Sharp, Fonagy, & Goodyer, 2008b). Theoretical models

have been developed to explain the development of most major childhood disorders through mentalization or social cognition as disease mechanism, epiphenomenon, or resilience/protective factor. Of all the models developed to account for the role of social cognition in the development of childhood disorder, only one (Fonagy, Gergely, Jurist, & Target, 2002; Sharp & Fonagy, 2008b) has explicitly considered attachment theory as the developmental basis from which social-cognitive capacity may grow.

For us, the attachment relationship with primary caregivers is the natural candidate to consider as context for the early development of social-cognitive or mentalizing capacity. Bowlby (1969) suggested that there is something innate in the preparedness of the infant to seek protection from attachment figures coupled with the attachment figures' natural disposition to provide caretaking. The reciprocity that is present almost from birth between a caregiver and an infant characterizes for Bowlby an enduring bond that lays the foundation for the infant to develop internal working models of self and other that can then function as templates for future relationships. If this foundation is secure, an internal working model of the other develops such that the infant, child, adolescent, or adult is able to consider the mind of another during interactions without being emotionally overwhelmed (Bateman & Fonagy, 1999, 2001, 2004; Fonagy et al., 2002). As Fonagy (1991) noted: "I would like to argue that fundamental to the acquisition of these [mentalizing] capacities is a degree of consistency and safety in early object relationships and 'good enough' psychic functioning in the parents to empower the process of internalization" (p. 642).

In secure attachment, the individual can understand himself or herself and others in terms of how he or she thinks, feels, perceives, imagines, reacts, attributes, and infers. The person can treat himself or herself and others as psychological agents and therefore respond effectively in interpersonal situations. If a secure attachment is not present, however, an individual will struggle to develop the capacity to mentalize, which will lead to problems in emotional and behavioral regulation and ultimately psychopathology. In this model, mentalizing becomes the way in which attachment security or insecurity is operationalized in a here-and-now fashion during daily social interactions and relationships.

An important question that follows is how insecure attachment develops. Again, mentalizing seems to be key. According to the model (Fonagy et al., 2002), secure attachment comes about by the accurate and contingent mentalization of the child by the parent. Several constructs have been developed to refer to the capacity of the parent to treat the infant or child as a psychological agent (Sharp & Fonagy, 2008a). These include reflective function (Fonagy & Target, 1997), maternal mind-mindedness (Meins, 1997), parental meta-emotion philosophy (Gottman, Katz, & Hooven, 1996), and distorted parental mentalization (Sharp, 2006; Sharp, Goodyer, Croudace, 2008). What these constructs have in common is the capacity of the parent to regulate and fully experience the parent's own and the child's emotions in a nondefensive way without becoming overwhelmed or shutting down (Slade, 2005). Slade gives an example of a mentalizing response from a parent:

Sometimes she gets frustrated and angry (child mental state) in ways that I'm not sure I understand (opacity of child's mental state). She points to one thing and I hand it to her, but it turns out that's not really what she wanted (opacity). It feels very confusing to me (mother's mental state) when I'm not sure how she's feeling (opacity of child's mental state) especially when she's upset. Sometimes she'll want to do something and I won't let her because it's dangerous, and so she'll get angry (mother recognizes diversity of mother and child mental states). I may try to pick her up and she obviously didn't want to be picked up because she's in the middle of being angry (mother recognizes dynamic nature of child's affect) and I interrupted her. In those moments it's me who has the need to pick her up and make her feel better, so I'll put her back down (mother recognizes that her need is triggering a behaviour that is not in line with the child's needs, and changes her behaviour accordingly). (p. 279)

If a parent is able to mentalize his or her child, the infant is secure in the relationship and can, in turn, develop a capacity to treat self and others as psychological agents. Of course, the parent's capacity to mentalize the child accurately and contingently depends on the security of attachment to the parent's own parent. As such, mentalization becomes the key factor by which attachment security is intergenerationally transmitted (Sharp & Fonagy, 2008a).

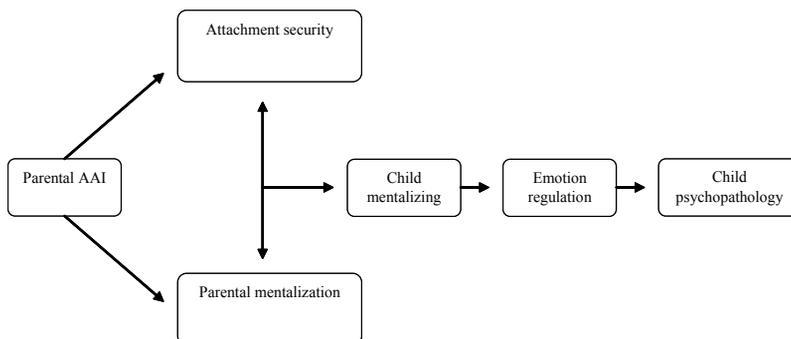


Figure 1. A mentalization-based theoretical model for the development of psychopathology in children and adolescents (reproduced from Sharp & Fonagy, 2008a).

This intergenerational model of attachment and mentalization is described in rich detail in Fonagy et al. (2002). In what follows, we distill the bare essentials of the model as represented graphically in Sharp and Fonagy (2008a) where the empirical research in support of the model is summarized.

The model depicted in Figure 1 is particularly relevant for disorders that are associated with insecure attachment. The most relevant disorders in this regard are the internalizing and externalizing disorders, or emotional-behavior disorders (Mize & Pettit, 2008) and emerging personality disorders (Sharp & Fonagy, 2008b; Bleiberg, 2001). Because many of the patients admitted to the ATP suffer from emotional-behavior and emerging personality disorders (see Table 1 for patient characteristics), we believe this model to be the most relevant and have therefore used this model to inform the development of an assessment, research, and treatment framework.

Measure selection and assessment procedures

Given that our assessment and research protocol is theory driven, we developed an approach to measure selection whereby each of the key components of the theoretical model (Figure 1) is operationalized quantitatively. Therefore we have identified five domains of functioning that are assessed at admission.

Table 1. ATP patient demographics and diagnostic information (n = 53)

Sex		
	Male	24 (45.3%)
	Female	29 (54.7%)
Age		
	Mean (SD)	15.98 (1.35)
	Min	12
	Max	18
No. of previous hospitalizations		
	Median	1
	Min	0
	Max	10
History		
	Psychiatric	100%
	Medical	41.5%
	Cutting (past year)	20.8%
	Cutting (lifetime)	39.6%
Diagnoses		
	BPD/borderline features	37.7%
	Internalizing problems	81.2%
	Externalizing problems	64.6%
	ADHD	31.2%
	ODD	33.3%
	CD	35.4%
	Affective problems	68.8%
	Anxiety problems	56.2%
	Somatic problems	35.4%
	Probability of substance abuse/dependency diagnosis	50%

Axis I psychopathology

To assess Axis I psychopathology, we have selected both interview- and questionnaire-based measures of psychopathology. As such, we have taken both a categorical and a dimensional approach to measuring psychopathology. Given that parents and youth each contribute a unique perspective regarding the youth's problems (Verhulst & van der Ende, 1992), we also included parent- and self-report versions of the measures. Axis I psychopathology measures include computerized versions of the Youth Self-Report and Child Behavior Checklist (YSR; CBCL; Achenbach & Rescorla, 2001), the computerized, clinician-assisted version of the Diagnostic Interview Schedule for Children (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), and the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). These measures are

well-established measures of Axis I psychopathology in children and adolescents and provide a comprehensive picture of the problems with which the teen struggles from the perspectives of both the teen and the parents.

As part of the assessment of Axis I pathology, we also measure high-risk behaviors at both admission and discharge, because these are often major foci of treatment. We included the Deliberate Self-Harm Inventory (DSHI; Gratz, 2001), a 17-item self-report measure that assesses the frequency, severity, duration, and type of self-harm behavior. The DSHI has high internal consistency ($\alpha = .82$); adequate construct, convergent, and discriminate validity; and adequate test-retest reliability over a 2–4 week period. Deliberate self-harm is assessed at admission and discharge. We have also included the Car, Relax, Alone, Forget Friends, Trouble (CRAFFT; Knight, Sherritt, Shrier, Harris, & Chang, 2002), a 6-item clinician-administered questionnaire to screen for substance-related problems and disorders in adolescents. Finally, we included the Peer Conflict Scale (PCS; Marsee & Frick, 2007), a 10-item self-report measure that assesses proactive and reactive aggression and overt and relational aggression.

Axis II psychopathology

The measurement of emerging personality disorders in children and adolescents is controversial (Edens, Skeem, Cruise, & Cauffman, 2001; Sharp & Bleiberg, 2007; Sharp & Kine, 2008; Bleiberg, 2001). Although measures have been developed to assess Axis II psychopathology, many of these measures lack adequate norms. Nevertheless, we have selected the most frequently used tools in the field to include both dimensional and categorical measures of emerging personality. Measures of psychopathy and associated traits include the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), the Inventory of Callous Unemotional Traits (ICUT; Essau, Sasagawa, & Frick, 2006; Kimonis et al., 2008), and the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Sattin, & Levander, 2002). For the assessment of borderline traits, we have included the Borderline Personality Disorder Feature Scale for Children (BPFS; Crick, Murray-Close, & Woods, 2005) and the Childhood Interview for DSM-IV Borderline Personality Disorder

(CI-BPD; Zanarini, 2003). The Personality Assessment Inventory–Adolescent (PAI-A; Morey, 2007) is used to assess global personality traits and dysfunction.

Antisocial Process Screening Device (APSD). The APSD (Frick & Hare, 2001) is a 20-item behavioral rating scale used to assess psychopathic traits in youth. Factor analytic studies have generally revealed three dimensions: a 7-item Narcissism factor, a 5-item Impulsivity factor, and a 6-item Callous-Unemotional (CU) factor, with moderate correlations among the factors (Dadds, Fraser, Frost, & Hawes, 2005; Frick, Barry, & Bodin, 2000; Vitacco, Rogers, & Neumann, 2003). Frick et al. (2000) reported internal consistencies ranging from .74 (Impulsivity) to .83 (Narcissism); however, subsequent studies have typically found lower reliabilities, particularly for self-report (Dadds et al., 2005; Poythress et al., 2006).

Youth Psychopathic Traits Inventory (YPI). While the APSD is the most frequently used measure of juvenile psychopathy (Sharp & Kine, 2008), some have raised the issue that questions are worded such that answers may be easily manipulated by those with psychopathic traits. Thus, Andershed and colleagues (2002) developed the 50-item, self-report YPI to assess the core personality traits of psychopathy in community samples of youth. The YPI is based upon a 3-factor conceptualization of psychopathy (Cooke & Michie, 2001) and emphasizes the affective and interpersonal traits over the antisocial lifestyle traits (Skeem & Cauffman, 2003). The YPI was designed with 10 subscales in mind, with five items per subscale. Factor analysis suggested three moderately correlated dimensions, labeled Grandiose/Manipulative, Callous/Unemotional, and Impulsive/Irresponsible (Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006). Internal consistencies have been found to range from .61 to .84 for the 10 subscales, from .61 (Callous/Unemotional) to .82 (Grandiose/Manipulative) for the three factors, and from .74 to .92 for the total score (Andershed et al., 2002; Andershed, Hodgins, & Tengström, 2007; Skeem & Cauffman, 2003).

Inventory of Callous Unemotional Traits (ICUT). Given the importance of callous-unemotional traits in predicting a variety of youth outcomes, Frick (2003) developed the ICUT to elaborate the item content of the APSD CU scale and to improve upon its often

reported low reliability. The expanded 24-item scale contains 12 positively and 12 negatively worded items answered on a 4-point Likert scale from 0 (*Not at all true*) to 3 (*Definitely true*). As with the APSD, teacher-, parent-, and self-report versions are available. Factor analyses of the ICUT have revealed three factors, labeled *Callousness*, *Uncaring*, and *Unemotional*. Adequate internal consistency has been found for the ICUT total score ($\alpha = .77$ to $.81$), as well as for the Callousness ($\alpha = .70$ to $.80$) and Uncaring ($\alpha = .73$ to $.81$) subscales, whereas the Unemotional subscale has shown poorer reliability ($\alpha = .53$ to $.64$; Essau et al., 2006; Kimonis et al., 2008).

Borderline Personality Features Scale for Children (BPFS). The BPFS was developed as a self-report measure to assess borderline personality features in children ages 9 and older (Crick et al., 2005). The measure was adapted from the borderline scale of the Personality Assessment Inventory (PAI; Morey, 1997) and assesses affective instability, identity problems, negative relationships, and self-harm. Responses are scored on a 5-point Likert scale, ranging from 1 (*Not at all true*) to 5 (*Always true*). A parent-report version (Sharp, Musko, Chang, & Ha, in press) is being developed from the self-report measure with the original items slightly modified (e.g. "I feel very lonely" was replaced with "My child seems to feel very lonely").

Child Interview for Borderline Personality Disorder (CI-BPD). The CI-BPD (Zanarini, 2003) is the first interview-based measure developed specifically for use with adolescents to assess borderline personality disorder and has been shown to have adequate psychometrics. The interview was adapted from a semistructured interview for *DSM-IV* personality disorders for adults, with items adapted from the borderline module of the Diagnostic Interview for Personality Disorders (DIPD; Zanarini, Frankenburg, Sickel, & Yong, 1996). A total of nine criteria reflecting symptoms of borderline personality disorder (BPD) are scored as 0 (*absent*), 1 (*probably present*), or 2 (*definitely present*); and a minimum of five criteria must be scored "2" for a diagnosis of BPD. If four criteria are scored "2," then a diagnosis of borderline features or traits is given. Similar to adult criteria for a *DSM-IV* diagnosis of BPD, the nine criteria on the CI-BPD interview include symptoms of inappropriate, intense anger or difficulty controlling anger; affective in-

stability; chronic feelings of emptiness; identity disturbance; transient stress-related paranoid ideation or severe dissociative symptoms; fears of abandonment; recurrent suicidal behavior, gestures or threats or self-mutilating behavior; impulsivity; and a pattern of unstable and intense interpersonal relationships.

Personality Assessment Inventor–Adolescent (PAI-A). The PAI-A (Morey, 2007) is a dimensional measure of personality functioning that has demonstrated convergent validity with other broad-based personality assessment instruments as well as with more focused measures targeting specific constructs. It consists of 264 self-report items comprising 4 Validity scales, 11 Clinical scales, 5 Treatment Consideration scales, and 2 Interpersonal scales. Ten of the Clinical scales contain conceptually driven subscales. Internal consistency for the substantive scales was .79 for the community standardization sample and .80 for the clinical sample, and average test-retest reliability ($M = 18$ days; $SD = 5.77$) was .78 (Morey, 2007).

Mentalizing capacity of the adolescent

The measurement of mentalization is crucial to the outcomes assessment and research protocol described in this article. Previous studies demonstrating the efficacy of MBT in adult patients with BPD have been criticized for not demonstrating mentalization as the mechanism of change (Choi-Kain & Gunderson, 2008). Given that our treatment approach at the ATP is mentalization-based, it is of crucial importance that we demonstrate mentalization as the mechanism of change. This, however, involves some challenges, partly because the construct of mentalizing is multifaceted (Choi-Kain & Gunderson, 2008; Sharp, 2006), and partly because further measure development is needed even for the assessment of a global construct. We have therefore included several measures, each purporting to measure a different aspect of mentalizing.

Movie for the Assessment of Social Cognition (MASC). To measure the implicit aspects of mentalizing, we administer the MASC (Dziobek et al., 2006). The MASC is a 15-minute movie, consisting of 46 clips, that is shown to the youth on a computer using a PowerPoint presentation. The movie shows four characters meeting for a dinner party, and questions at the end of each scene ask about

how the characters think and feel. There are a total of six control questions to see if the respondent is paying attention to the task, and correct item scores are summed to yield a total mentalizing score, with higher scores indicating good mentalizing.

Child's Eyes Task (CET). The CET (Baron-Cohen, Wheelwright, Scahill, Lawson, & Spong, 2001) is a self-report measure that also assesses implicit mentalization. Consisting of 28 pictures of the eye region of the face, the CET requires the youth to choose one of four words that best describes what the person in the photo is feeling or experiencing. Correct responses are totaled to yield the youth's overall score, with a high score indicating good mentalizing.

Avoidance and Fusion Questionnaire–Youth (AFQ-Y). Cognitive aspects of mentalizing are assessed using the AFQ-Y (Greco, Lambert, & Baer, 2008). The 17-item self-report measure assesses for psychological inflexibility, which may develop from high levels of cognitive fusion and experiential avoidance. This unidimensional measure is rated on a 4-point Likert scale ranging from 0 (*Not at all true*) to 4 (*Very true*). Scores are derived from the sum of all responses, with higher scores indicating greater psychological inflexibility.

Basic Empathy Scale (BES). To assess the empathizing component of mentalizing, we use the BES (Jolliffe & Farrington, 2006), which is a valid multidimensional measure of empathy. The self-report measure consists of 40 items rated on a 5-point Likert scale ranging from 0 (*Strongly disagree*) to 5 (*Strongly agree*) with eight items reverse-scored. All responses are summed for a total score; high scores reflect high empathy, with 9 items measuring cognitive empathy and 11 measuring affective empathy.

The Mentalizing Stories Test for Adolescents (MSTA). The MSTA (Vrouva & Fonagy, 2008) is a 21-item self-report measure assessing both mentalizing and pseudomentalizing. Each item provides a vignette with instructions to choose one of three possible answer choices. Responses are summed to provide a total score for mentalizing, with a higher score suggesting adequate mentalizing. The same items are also scored for pseudomentalizing, with higher scores indicating a greater use of the strategy.

The Reflective Functioning Questionnaire-Adolescent (RFQ-A). This measure was originally developed for use in adult samples (Fonagy, Target, Steele, & Steele, 1998) to assess mentalizing ca-

capacity in the context of attachment security. We adapted the RFQ for use in adolescents by adapting items to be more developmentally appropriate and more appropriate for the US context (the RFQ was developed in the United Kingdom). For instance, "People's thoughts are a mystery to me" would be replaced with "People's thoughts are a secret to me" or "If I feel insecure I can behave in ways that put other's backs up" would be replaced with "If I feel unsure of myself, I can behave in ways that offend others".

Family functioning

Adolescent attachment. Adolescent attachment is measured through the Child Attachment Interview (CAI; Target, Fonagy, & Shmueli-Goetz, 2003), the Security Scale (SS; Kerns, Aspelmeier, Gentzler, & Grabill, 2001), and the Parental Bonding Inventory (PBI; Parker, Tupling, & Brown, 1979).

The CAI was developed to assess a child's mental representations of his or her primary attachment figure through analysis of verbal statements and behavior. Analysis yields one of three attachment classifications: dismissing, secure, or preoccupied. The CAI was shown to have high correspondence in the main attachment classification for parent-child dyads (mothers: 64% agreement; $k = 0.29$, $p < .01$; fathers: 65% agreement; $k = .29$, $p < 0.01$) as measured by the Adult Attachment Interview (AAI; Main & Goldwyn, 1994).

The SS is a short questionnaire-based measure of attachment style and children's perception of the degree to which their parents are (1) available to them, (2) dependable, and (3) easy to engage. In a study with 10–12-year-old youth, the SS was shown to have both convergent and discriminant validity in multiple domains (Kerns, Klepac, & Cole, 1996).

The PBI (Parker et al., 1979) assesses an adolescent's perception of his or her relationship with his or her parents. This 25-item self-report instrument measures the adolescent's perception of the mother's and father's "care" and "control/overprotection" aspects of the relationship. The youth fills out a form for mother and father separately, using a 4-point Likert scale ranging from 0 (*Very like*) to 3 (*Very unlike*). A high score on the "care" scale suggests that parents were considered to be empathetic, warm, understanding, and friendly, whereas a high score on the "control/overprotection"

scale implies too much control in the relationship, which is a risk factor for development of psychosocial problems. Although this is a retrospective measure asking the raters to report on their perception of their parents up to age 16, researchers have used it in several studies with adolescents (Beautrais, Joyce, & Mulder, 1996; Howard, 1981; Mak, 1990; Rey & Plapp, 1990).

Parent attachment. To assess parent attachment, we have included the Experiences in Close Relationships–Revised (ECR-R; Sibley, Fischer, & Liu, 2005). This measure assesses anxiety and avoidance in attachment in adult romantic relationships where each quality is continuous. In comparison with the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991), the ECR-R was shown to be positively correlated with dimensions of adult romantic attachment related to anxiety and avoidance ($r(80) = 0.69$, $p < .001$ and $r(80) = 0.45$, $p < .001$, respectively). Parents also complete the PBI and the Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988), a measure of interpersonal difficulties. For the purposes of our study, we use the short (32-item) form of the IIP.

Parenting style and stress. The Alabama Parenting Questionnaire (APQ; Frick, Christian, & Wootton, 1999; Shelton, Frick, & Wootton, 1996) is used to assess parenting style. The measure has five scales, each tapping into different parenting behaviors, including parental involvement, positive parenting, poor monitoring/supervision, inconsistent discipline, and corporal punishment. We use the parent and child global report forms, which are rated on a 5-point Likert scale from 1 (*Never*) to 5 (*Always*). The Stress Index for Parents with Adolescents (SIPA; Sheras, Abidin, & Konold, 1998) is a 112-item measure developed to measure parenting stress. This screening and diagnostic measure is an upward extension of the Parenting Stress Index and is designed specifically for use with adolescents ages 11-19. The SIPA examines four areas of the parent-adolescent relationship, including adolescent characteristics, parent characteristics, adolescent-parent interactions, and stressful life circumstances. This instrument has high reliability and validity with well-developed norms from both community and clinical samples.

Parental mentalizing. The RFQ (Fonagy et al., 1998) described in the section on adolescent mentalizing is also completed by parents.

Trauma. Early trauma may or may not be related to the family context. The Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is a 54-item self-report inventory of symptoms related to traumatic experiences. The measure consists of two validity scales (underresponse and hyperresponse) and six clinical scales, including anxiety, depression, posttraumatic stress, dissociation, anger, and sexual concerns. The items are rated on a 4-point scale ranging from 0 (*Never*) to 3 (*Almost all the time*), and raw scores are transformed into standardized T-scores based on the youth's sex and age. Clinical scale T-scores at or above 65 are considered clinically significant.

Cognitive functioning

We have included several well-established measures of cognitive functioning. These include the Wechsler Intelligence Scale for Children—Fourth Edition (WISC-IV; Wechsler, 2003) for adolescents 16 years and under and the Wechsler Adult Intelligence Scale—Third Edition (WAIS-III; Wechsler, 1997) for adolescents aged 17 years, the Woodcock Johnson Tests of Achievement—Third Edition (Woodcock, McGrew, & Mather, 2001), the Peabody Picture Vocabulary Test—Fourth Edition (PPVT-4; Dunn & Dunn, 2007), and the Expressive Vocabulary Test—Second Edition (EVT-2; Williams, 2007). We have also included a measure of executive functioning. The Behavior Rating Inventory of Executive Function (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000) is an 86-item behavioral rating scale completed by parents (or teachers). Briefly, executive function is an ability to monitor and control thoughts and actions and includes such skills as attentional flexibility, inhibitory control, resistance to interference, working memory, and emotion regulation. The BRIEF consists of eight clinical scales (Inhibit, Shift, Emotional Control, Initiate, Working Memory, Plan/Organize, Organization of Materials, and Monitor), which underlie two broad indexes (Behavioral Regulation and Metacognition). Additionally, a Global Executive Composite is formed by summing the two indexes. The BRIEF has shown very good psychometric properties.

Assessment procedures

All patients admitted to the Adolescent Treatment Program (ATP) at The Menninger Clinic are consented to the outcomes study on the day of admission and oriented to the assessment protocol. The assessment process involves both youth and parent participation in completing self-report questionnaires and structured clinical interviews during the adolescent's stay. The results of the assessments are provided to the clinical team at the patient's diagnostic conference, which takes place two weeks after admission. Parents and youth are assessed again at discharge with selected self-report measures. For the follow-up phase of the assessment process, families are contacted at six, 12, and 18 months after discharge to complete self-report measures.

The Menninger Clinic's Information Technology (IT) department has developed an electronic system to administer and score youth and parent self-report measures. The implementation of a system for the follow-up phase of the assessment process is in progress and will allow parents and youth to access the system through the Internet to take self-report measures at postdischarge time points for the outcomes study. The development of the electronic process for self-report measures allows for quicker scoring of the measures and streamlines data management in allowing for a central storage point for patient data collection. The assessment procedures are represented graphically in Figure 2.

Clinical and research use of the data collected

Clinical use of the data collected

The assessment data collected during the first two weeks of admission are first collated into a quantitative report form. This form contains the norms for each of the measures and a key for interpretation that clinicians may use. Next, the quantitative summary is collated into a narrative report under five domain headings (roughly mirroring the components of the assessment protocol).

The first section describes Axis I psychopathology. Here, the aim is to describe areas characterized by the most severe problems, including risky behaviors and trauma. Discrepancies between sources (parent/child) are highlighted.

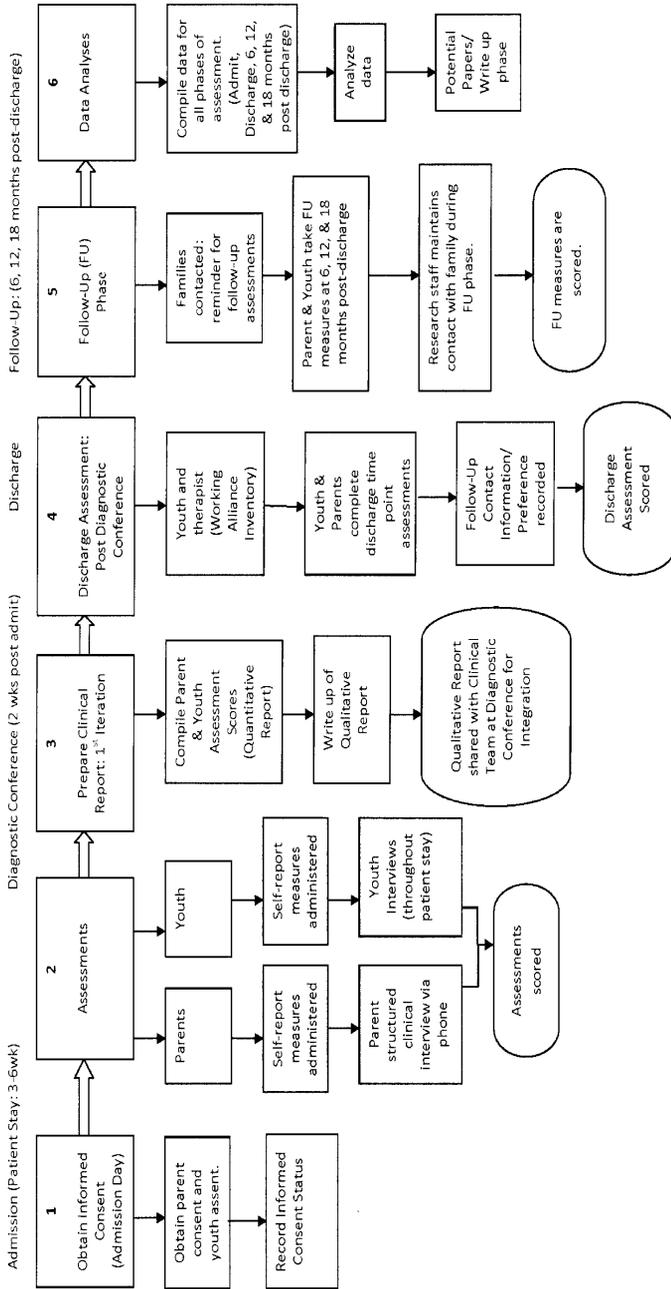


Figure 2. Patient assessment and follow-up process

Section 2 of the narrative report focuses on describing the emerging personality dysfunction (Axis II). The PAI-A is used to provide a global assessment of personality functioning and identify possible interpersonal strengths from a dimensional point of view that goes beyond a *DSM-IV* approach. Sections 1 and 2 both stay fairly close to the assessment data with little narrative interpretation.

Section 3 aims to describe family functioning in terms of the parents' experience of the child through measures of parenting stress, parenting practices, general characteristics of the parents (attachment security and mentalizing capacity), and parenting strengths. Next, the child's perception of the family is described through reliance on child attachment measures. In this section, narrative integration is encouraged as the aim is to form a coherent picture of the family's functioning and relationships with mentalizing capacity because the key explanatory factor.

Section 4 focuses on the adolescent's cognitive functioning and regulatory capacity. This includes cognitive and executive functioning abilities, social-cognitive (mentalizing) capacity, and emotion regulation capacity. Here, the report writer is charged with providing a picture of child characteristics in the context of previous sections. For example, an adolescent who meets criteria for borderline personality disorder may be conceptualized differently against the background of low intellectual functioning. In other words, problems raised in other sections of the narrative report are demystified in the context of salient child characteristics.

The narrative report concludes with a section outlining an integrated individual and family care pathway tailored to the specific needs of the adolescent and the family. The integrated care pathway refers to a multidisciplinary outline of anticipated care, placed in an appropriate time frame, to help the adolescent and his or her family move progressively through a clinical experience to obtain positive outcomes (Hall & Howard, 2006). The ultimate aim of the integrated individual and family care pathway is to increase the mentalization capacity of the adolescent and the family. Thus, the pathway is formulated such that a variety of treatment modalities are used to target treatment to this end.

Currently, the ATP is making use of the quantitative report during diagnostic conferences. Information provided to the clinical team is integrated with assessments performed and observations

made by clinical staff (psychologists, psychiatrists, social workers, and nurses). The use of the narrative report presently remains undecided because procedures for integrating the information gained from the assessment continue to be developed (see later section titled “Challenges, pitfalls, and future directions”). The ultimate aim of the narrative report is to provide the adolescent, family, and referring clinician(s) with a description, explanation, and integrated care pathway relevant to each adolescent and his or her family situation within a mentalization-based framework.

Research use of the data collected

The comprehensive clinical assessment described in this article provides a rich dataset that can be used to answer a plethora of research questions. First, and of most importance, are questions regarding the effectiveness of the mentalization-based treatment approach followed at ATP. These include changes in Axis I and II symptomatology and behavioral risks from admission to discharge to postdischarge follow-ups at 3, 6, and 18 months. Given the extensive assessment of variables that could act as mediators (mechanisms of change), we are in an ideal position to evaluate why and how our treatment works, as well as the interaction amongs several potential mediators.

Second, we have a unique opportunity to chart the development of the phenomenology of various disorders through adolescence and the protective and risk factors associated with or causal to the emergence or maintenance of psychiatric disorders in adolescence. This opportunity is provided by the longitudinal nature of the data, the characteristics of our patient population (see Table 1), and the fact that adolescents are still developing across all domains of functioning. In particular, and against the background of the fact that more than a third of patients admitted to ATP meet criteria for BPD features (see Table 1), this assessment and research protocol allows us to shed light on the development of emerging personality disorders. Research on emerging personality disorders is still in its infancy and therefore requires more attention if at-risk youngsters are to be identified and treated early before maladaptive personality patterns become entrenched (Crick et al., 2005; Sharp & Bleiberg, 2007; Sharp & Romero, 2007).

Third, our dataset provides us with the opportunity to empirically link all aspects of the model presented in Figure 1. Although the various axes of the model have been empirically demonstrated in infants, preschoolers, and elementary school-age children, more work is needed to empirically support these links in adolescents and with a focus on emerging personality disorders.

Finally, the assessment and research protocol described here offers a valuable laboratory for the development and refinement of measures of psychopathology (e.g., the CI-BPD) and measures of mechanisms of change (e.g., mentalizing measures). In summary, we are in a unique position to ask and answer difficult questions regarding the assessment, treatment, and trajectories of adolescents suffering from complex and severe psychiatric disorders.

Challenges, pitfalls, and future directions

Notwithstanding the opportunities described here, there are also a variety of challenges and pitfalls involved in the development of a comprehensive, theory-driven, mentalization-based assessment protocol that dovetails with a research agenda. First, such an endeavor requires dedicated research and assessment staff beyond clinical staff. More specifically, it requires a principal investigator (PI) who is clinically and research trained to take the scientific lead in developing and overseeing a viable research program. The PI also provides budgetary oversight and staff supervision while adhering to human subjects research standards as set by institutional review boards. In addition to a PI, a research coordinator is needed to coordinate the time-sensitive day-to-day activities of parent and adolescent assessments. Furthermore, the research coordinator is responsible for the computerization of measures and data management, and he or she may be involved in initial data analyses and write-up of findings. In addition, several clinically trained personnel are necessary to conduct the assessments, and a research assistant is needed to assist the team in tasks such as data entry, literature searches, and general administration. Finally, a supportive medical and clinical program director is essential to develop the infrastructure needed for an outcomes research protocol of this scope.

A second challenge in the development of an assessment and research protocol is the problem of integrating the assessment data into other assessments conducted as part of the clinical workup. For instance, several projective measures may be administered to the patient in a clinician-specific manner. This information provides helpful representation of the internal and subjective world of the patient and is helpful in formulating treatment goals, but it is less helpful in tracking outcome. Whether this information should be included in the narrative report described previously, or whether the assessment and research data should be integrated into other reports, remains a topic of debate and may challenge the aim of mapping a mentalization-based assessment and research protocol onto a mentalization-based treatment protocol.

A third challenge that is particularly relevant to the research agenda described here is the heterogeneity of the patient population. This, in itself, is not a problem and may even be a strength (in that the research sample consists of real-life patients), but given the fact that the ATP is a 16-bed unit with around 100 admissions a year, it may take several years to recruit a homogeneous sample that may provide meaningful information about the correlates or predictors of any particular disorder.

Despite these challenges and pitfalls, the assessment and research protocol described here provides an exciting example of how research can be integrated into evidence-based practice in an inpatient adolescent setting. It may also form the basis for the development of multisite collaborations eligible for obtaining external funding.

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