



Assessment of mental capacity to consent to treatment in anorexia nervosa: A comparison of clinical judgment and MacCAT-T and consequences for clinical practice



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ABSTRACT

Informed consent requires adequate mental capacity to consent to treatment. Mental capacity (MC) to consent to treatment refers to the ability to make medical decisions. MC is assessed in a general psychiatric interview, but this clinical assessment is known to overestimate mental capacity in patients and the inter rater reliability is low. The MacArthur Competence Assessment Tool for Treatment (MacCAT-T) has emerged as the gold standard to assess mental capacity to consent to treatment. The MacCAT-T is a semi-structured interview designed to aid clinicians in this assessment and has shown good inter rater reliability in patients with schizophrenia and other mental disorders, but has hardly been studied in patients with anorexia nervosa. Patients with anorexia nervosa (AN) regularly avoid treatment, even when severely ill and discussion includes assessing MC to consent to treatment.

The aim of this study is to compare clinical judgment and the MacCAT-T in evaluating MC in patients with AN which in turn may influence use of the MacCAT-T in daily practice.

In a sample of 70 consecutively referred severely ill patients with AN with a mean BMI of 15.5 kg/m² and a mean duration of illness of 8.6 years, clinical assessment of MC by experienced psychiatrists and the outcome of the MacCAT-T interview were compared. Agreement (κ -value) was calculated. Agreement between clinical assessment and outcome of the MacCAT-T was questionable (κ 0.23). Unlike in other psychiatric populations, clinicians judged a high proportion of patients with AN as having diminished MC. The MacCAT-T can be useful in assessing MC in AN when used in addition to clinical judgment to aid clinicians in complex cases. Why clinicians judge a relatively high proportion of patients with AN as having diminished MC, in contrast to lower proportions in other psychiatric disorders, is an area in need of further research.

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1. Introduction

Informed consent is considered a central theme in health care legislation in western countries. It refers to the ability of a patient to adequately decide regarding treatment, and without informed consent a clinician cannot commence treatment. In the field of medicine adequate decision making regarding treatment is referred to as mental capacity.

Contemporary ideas on informed consent in continental Europe stem from the Nuremberg Code, where it was stated that consent to research should be voluntary, based on adequate understanding and

mental capacity (Sturman, 2005). The Nuremberg Code was designed after the unethical behaviour of (German) health care professionals in the Second World War came to light and conveyed the firm resolution that such behaviour should never again occur. In the United States the informed consent principle had already been established earlier (Schloendorff v. Society of New York Hospital 105 N.E. 92, 1914).

In the more liberal view regarding patient rights that emerged after the war, informed consent in the context of medical treatment gained importance. The duty of clinicians to properly inform patients and not override patient autonomy became a central theme in health care legislation. In later years mental capacity was conceptualized further. In 1977, Roth et al. suggested this decisional capacity (i.e. mental capacity) should be assessed by tests regarding reasoning, understanding and the ability to make a choice as these were the elements on which judges

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based their verdicts in courts (Roth, Meisel, & Lidz, 1977). Based on this original work, in 1982 Appelbaum and Roth outlined four legal standards, which from that moment on have come to be used by the majority of the researchers in the field. These so-called standards, which actually are functional abilities, generally refer to the ability to understand the information provided, to engage in reasoning when deciding, to appreciate this information as relevant to one's own circumstances and to express a choice (Appelbaum & Roth, 1982). An important presumption in clinical practice is that the patient possesses adequate mental capacity to do so. Mental capacity is a task specific phenomenon and in that sense refers to one specific decision patients need to make and is not a general feature of the patient (except for extreme situations e.g. coma). A patient can thus have adequate mental capacity regarding a certain decision, but diminished or absent mental capacity regarding another medical decision (Appelbaum & Grisso, 1988; Beauchamp & Childress, 1994; Wong, Clare, Gunn, & Holland, 1999).

When severely ill patients refuse necessary treatment, the issue of mental capacity becomes especially important. In a recent review on the ethics of coercive treatment in psychiatry, Steinert states that coercive treatment can be justified only when a patient's capacity to consent is impaired and severe danger to health or life cannot be prevented by less intrusive means (Steinert, 2017). Generally, the law will permit clinicians to provide treatment over the refusal of a patient who lacks capacity to consent, when this is necessary to prevent serious harm to the health or life of that patient, and sometimes when necessary to protect the safety of others. In this case, withholding treatment can violate the principle of justice. Lacking or diminished mental capacity is a clinical dilemma, especially in cases where withholding treatment can harm the patient or others.

1.1. Assessment of mental capacity to consent to treatment

Assessment of mental capacity to consent to treatment is usually done by the treating clinician, but generally only in situations where the clinician doubts whether or not mental capacity is adequate. This clinical assessment is known to overestimate mental capacity in patients (Lepping, Sambhi, & Williams-Jones, 2010) and has low inter rater reliability (Kitamura & Kitamura, 2000; Marson, McInturff, Hawkins, Bartolucci, & Harrell, 1997; Shah & Mukherjee, 2003), i.e. two clinicians have low agreement in their assessment of mental capacity in the same patient. Therefore, efforts have been made by various researchers to provide clinicians with a tool to assess mental capacity in clinical practice. Sturman discusses in his review eight (semi)structured interviews, one self report instrument and one questionnaire (Sturman, 2005). Virtually all of these instruments demonstrated good interrater reliability, the most serious limitation of these instruments lies in their validity testing. Of these instruments, the MacArthur Competence Assessment Tool for Treatment and for Clinical Research (MacCAT-T and MacCAT-CR to assess mental capacity to consent or treatment or to consent to participating in clinical research respectively) have emerged as the gold standard today. This is due to the more substantial research into reliability, the demonstrated concurrent validity with other measures and the extensive testing in a range of patient populations, medical as well as psychiatric (Candia & Barba, 2011; Dornan, Kennedy, Garland, Rutledge, & Kennedy, 2015; Mandarelli et al., 2016; Mandarelli et al., 2017; Okai et al., 2007; Raymond et al., 2004; Sturman, 2005; Wang et al., 2016). The MacCAT-T (Grisso, Appelbaum, & Hill-Fotouhi, 1997) is a shorter version adapted from the original mental capacity assessment tool developed by Appelbaum and Grisso in the nineties of the previous century (Appelbaum & Grisso, 1995; Grisso & Appelbaum, 1995; Grisso, Appelbaum, Mulvey, & Fletcher, 1995). As mentioned in the introduction, four abilities (understanding, appreciation, reasoning and making a choice) were condensed from legal ruling in the United States in the 1980s; these were the abilities that were considered central to mental capacity by court rulings. As these abilities seemed

clinically meaningful, they became the four central issues in the research and development of their assessment tools for clinical practice. Using the MacCAT-T the clinician provides patients with adequate information and assesses their degree of understanding, reasoning and appreciation and ability to make a choice. The MacCAT-T provides ratings for four subscales; Understanding (0–6), Appreciation (0–4), Reasoning (0–8) and Choice (0–2). It has shown good inter-rater reliability in the assessment of mental capacity (Grisso et al., 1997).

The MacCAT-T has since been used in a range of populations, psychiatric and medical, and the high inter rater reliability has been replicated a number of times. Two reviews (Candia & Barba, 2011; Okai et al., 2007) and one meta-analysis (Wang et al., 2016) have been published on mental capacity in psychiatric patients. In most studies in these reviews the MacCAT-T was the instrument of choice to assess mental capacity. The inter rater reliability again proved to be high, indicating that it was possible to reliably assess mental capacity with the MacCAT-T. Schizophrenia, bipolar disorder and major depressive disorder were the most common diagnoses in the two reviews. The meta-analysis studied only patients with schizophrenia. Psychosis, symptom severity, involuntary admission and treatment refusal were indicators for incapacity. A review found 29% patients incapacitous (Okai et al., 2007), Wang et al. (2016) found that patients with schizophrenia performed worse on all subscales of the MacCAT-T compared to healthy controls.

In studies using the MacCAT-T a persistent finding is that the proportion of patients that is judged as having diminished mental capacity is generally much higher when adding the MacCAT-T to the clinical assessment, than when clinicians judge without this tool (Cairns et al., 2005; Vollmann, Bauer, Danker-Hopfe, & Helmchen, 2003). For instance, in the study by Vollmann et al. it was found that when the clinician assessed patients with a major depressive disorder the proportion of patients found to lack capacity was substantially lower than when the MacCAT-T was used in this assessment (3% vs 20%); the same pattern was seen in patients with schizophrenia (18% vs 53%). An interesting study by Owen et al. (2013) showed that when physically ill patients have diminished mental capacity it is mainly their reasoning that is deficient, whereas in psychiatrically ill patients appreciation is lower when mental capacity is compromised. This suggests a different pathway to mental capacity problems in medically ill and psychiatrically ill patients.

1.2. Legal and ethical considerations in mental capacity to consent to treatment

The MacCAT-T and the focus on the four key abilities have been influential in clinical practice. Clinicians regarded these four abilities as essential, teaching them to new generations. But this translation of legal logic to clinical reality might be inherently problematic. The legal paradigm is much more rational than clinical reality, it is more dichotomous and pays less attention to interpersonal differences. Laws do not leave much room for personalization, whereas in medicine diagnoses, treatments and prognoses are constantly influenced by personal circumstances of the patient.

Another legal matter complicates the assessment of mental capacity in daily practice. Different health care legislation exists for mentally ill and physically ill people with a different weight put on the importance of mental capacity to consent to treatment. There have been some that have argued for the merging of these two different health care legislations as medical law would benefit from one system, with mental capacity as a core feature regardless whether a patient would have a psychiatric disorder or another medical disorder. These authors see no justification for two different legislations and argue that it promotes stigma and enables discrimination against people with a psychiatric disorder (Dawson & Szmukler, 2006; Richardson, 2007; Szmukler & Kelly, 2016). Appealing as this might seem, this has not been the turn society

or politicians have taken in designing the health care legislation in recent years.

Besides the difficulty translating legal concepts to the field of psychology and psychiatry, and complex legislation, the question of how to optimize ethical decision making in patients who might harm themselves or others is an area of continuous discussion. The issue of mental capacity stands at the core of this discussion. Although this is an area of interest for the entire medical field, it is argued by some that psychiatry has 'a special place in terms of the ethical demands it places on practice', because of three distinct aspects of psychiatric treatment: the therapeutic alliance, distinct patient features such as impaired reasoning and the goals of treatment which can extend to substantial personality change (Radden, 2002). The ethical dilemma known to medical practice for a long time is all the more applicable to the field of psychiatry: What degree of paternalism may be adopted to protect a patient's well-being? Or, in other words, when is the mental capacity of a patient not sufficient anymore to be able to refuse treatment and should society intervene? This issue is usually resolved by setting "thresholds"; i.e. the more severe the consequences of a certain decision, the more certainty the clinician needs and the higher the threshold would be for the clinician to decide that the patient has adequate mental capacity. Although some have commented on this as being ethically unsatisfactory and paternalistic (DeMarco, 2002), from a clinician's point of view this way of handling seems inevitable (Hotopf, 2005).

A famous work mentions guiding principles that ought to be taken into account when dealing with bio-ethical problems (Beauchamp & Childress, 2001). These principles are non-maleficence (first do no harm), beneficence (acting to benefit others), autonomy (acknowledging a person's right to 'self-government') and justice (treating people fairly). This theoretical framework, also known as principle-based ethics or principlism, is the dominant theoretical framework in medical ethics. A person is autonomous when he or she can make his or her own decisions and choices without constraints by either another person's action or by psychological limitation. To be autonomous one has to be able to make choices on the basis of deliberation. The principle of autonomy has increasingly dominated discussions about mental capacity and compulsory treatment (in general medicine as well as in psychiatry) and this has been criticized by some. They argue that the importance of the other three principles (non-maleficence, beneficence and justice) should not be overlooked and that autonomy was always meant to be taken into account together with these other principles. These ethical principles are not meant as rules and one should not have preference over another, but rather should be regarded as concepts that have a different weight in different situations (Berghmans, Dickenson, & Meulen, 2004; Lepping & Raveesh, 2014). Also they argue that autonomy of any person can never exist in isolation and therefore other values and social context should always be taken into consideration as well. In that way these authors advocate a larger role for the ethics of care movement, with a larger role for empathy and relationships in the decision making regarding ethical dilemmas.

In an attempt to look for an optimal ethical framework for psychiatry, Bloch and Green have discussed various ethical theories (Bloch & Green, 2006). They too propose a combination of this principle based ethical model (being a pragmatic approach) with the model of care ethics (with a large role for emotions and interpersonal relationships in moral deliberation). In this way they seek to offer a framework that is guided by principles, but takes into account unique personal circumstances as well.

In accordance with the suggestions by researchers from the bio-ethical field, more emphasis on the narrative of the patient reflecting personal values and (in psychiatric patients) more attention to premorbid values and beliefs are advocated by others working in the field of psychiatry and medical ethics (Breden & Vollmann, 2004; Charland, 1998; Charland, 2007; Tan, 2003; Tan, Stewart, Fitzpatrick, & Hope, 2006; Tan, Stewart, & Hope, 2009; Vollmann, 2006).

This dominance of the concept of autonomy over the other ethical principles is at odds with the idea that a human being exists essentially in relation to his or her environment and personal relationships and therefore cannot be seen as separate from this context and these values. Lepping describes how health care legislation is based on capacity and that when one is found to have adequate capacity, autonomy predominates from that moment on. He warns that overestimation of mental capacity is common and that the degree of capacity may fluctuate (Lepping & Raveesh, 2014). By favoring the principle of autonomy over other ethical principles in the assessment of mental capacity, according to Lepping the clinician is in danger of paying too little attention to the patient's relationships, their care needs and long-term social context. Steinert in a recent paper therefore promotes a pragmatic approach to the issue of autonomy and mental capacity (Steinert, 2017).

Besides this criticism about the domination of the concept of autonomy and the way this influences the mental capacity assessment from the bio-ethical field, another critique regarding the current concept of mental capacity is the proposed lack of attention to emotions. By some authors, mental capacity assessments in general and the MacCAT-T in particular are seen as focusing too much on cognitive and rational functioning, whereas decision-making is not wholly rational but rather very much influenced by emotional factors (Breden & Vollmann, 2004; Charland, 1998; Charland, 2007; Tan, 2003; Tan et al., 2006; Tan et al., 2009; Vollmann, 2006). Decision making that involves a certain degree of complexity and uncertainty is known to be heavily influenced by emotions (Naqvi, Shiv, & Bechara, 2006). In this type of decision making, people will have to rely on their intuition, because information in these complex situations cannot be processed in a rational and slow fashion since our working memory capacity is limited (Remmers & Michalak, 2016). Adaptive decision making entails that people will rely on their intuition that consists of feelings or bodily signals, also referred to as somatic markers (Damasio, 1994; Damasio, 1996) resulting from the decision making process when receiving evaluative feedback (e.g., reward vs. punishment). This will bias their decision making in an adaptive direction. However, when there are disturbances in the affective system, it will be difficult to rely on these bodily feelings and the decision making process will likely be hampered. How to include emotional functioning in mental capacity assessments however is still not clear.

1.3. Anorexia nervosa

Anorexia nervosa (AN) is a disorder, where discussions on mental capacity and consent to treatment often play a major role. Patients with anorexia nervosa usually deny that they are ill, even when they are in a life threatening condition. The mortality rates of AN are among the highest in psychiatric disorders with a crude mortality rate of 5.1% per decade (Arcelus, Mitchell, Wales, & Nielsen, 2011; Fichter & Quadflieg, 2016; Smink, van Hoeken, & Hoek, 2013). Even in cases without a lethal course, anorexia nervosa is a very severe mental illness impacting on all life domains. The onset of the disorder is usually in adolescence but, as the mean duration of illness to recovery takes around 7 years (Herzog, Deter, Fiehn, & Petzold, 1997; Strober, Freeman, & Morrell, 1997), transition to adult life is fraught with difficulties. Finishing secondary education is hampered, but also starting higher education or a job, engaging in relationships and generally finding the way into society are life domains severely hindered by this devastating illness. In the global burden of disease study published in 2016 it was found that eating disorders were among the leading causes of burden in young females in high income countries, with a burden greater than that of alcohol use disorders, gynecological disorders and interpersonal violence (Erskine, Whiteford, & Pike, 2016). This finding highlights the severe morbidity of AN. The causes of AN are not yet clear. Multiple factors, including genetic, social and psychological factors appear to have an influence in the onset of AN (Treasure, Claudino, & Zucker,

2010; Zipfel, Giel, Bulik, Hay, & Schmidt, 2015). Recent studies have shown a lifetime prevalence of 1 to 4% in Europe (Keski-Rahkonen & Mustelin, 2016; Smink et al., 2013) indicating that AN is not uncommon. Central features of AN are restriction of energy intake, an intense fear of weight gain, body image disturbance and altered cognitive and emotional functioning. A rigid thinking style, a tendency to focus on details at the expense of the bigger picture and intolerance of uncertainty have been shown in patients with AN (Chan et al., 2014; Danner et al., 2012; Galimberti et al., 2012; Lopez, Tchanturia, Stahl, & Treasure, 2008; Sternheim, Startup, & Schmidt, 2011; Tchanturia et al., 2007; Tchanturia et al., 2012). Furthermore, emotion regulation difficulties and less adequate emotion recognition and processing have been found (Danner et al., 2016; Fairburn et al., 2009; Harrison, Sullivan, Tchanturia, & Treasure, 2010; Treasure & Schmidt, 2013; Wildes, Marcus, Cheng, McCabe, & Gaskill, 2014). These features lead to numerous pathological behaviors to promote weight loss, such as severe dietary restriction, purging or excessive physical activity. These behaviors also result in physical complications, such as fatigue, amenorrhoea, loss of bone mass and dryness of hair and skin. In extreme cases life threatening bradycardia, hypotension, hypothermia or electrolyte disturbances can occur (Zipfel et al., 2015). Not only are mortality rates high, but prognosis also is unfavorable with only 50% of adults recovering completely, 30% reaching partial recovery and 20% remaining severely ill (Keel & Brown, 2010). Psychiatric comorbidity is common, with mood disorders in nearly two-thirds and anxiety disorders in 25–75% (Fernandez-Aranda et al., 2007; Raney et al., 2008). Remarkably, given this unfavorable outcome and the severe consequences, only a minority of patients are treated within the mental health care system (Hoek, 2006; Keski-Rahkonen et al., 2007; Smink, 2012).

The most recent treatment guidelines for AN are the Australian and New Zealand Clinical Practice Guideline of 2014 (Hay et al., 2014) and the British NICE Guideline for Eating disorders from 2017 (National Institute for Health and Care Excellence, May, 2017). These guidelines promote a comprehensive assessment of the patients and her context with thorough attention to comorbid psychiatric and medical diagnosis and risks. It is advised to give great attention to engagement and medical stabilization (if necessary) and not embark directly into psychological treatment as meaningful engagement is a crucial factor in treating AN.

Regarding mental capacity the NICE Guideline mentions that “some patient may have the intellectual ability to understand the treatment, but be unable to give valid consent because their capacity to consent is compromised by fears of obesity”. It also mentions that people with AN might have impaired decisional capacity despite having a good understanding of the risks.

1.4. Mental capacity to consent to treatment in anorexia nervosa

Little research has examined mental capacity to consent to treatment in patients with AN, which is surprising given their great resistance to treatment, their seemingly irrational behaviour and the dire possible consequences of refusing treatment. As mental capacity to consent to treatment in severely ill patients with AN therefore is important to assess, an instrument that might aid the clinician in this judgment could be of great value. Until recently only two small studies had been done in patients with AN, with conflicting results. One small qualitative study (Tan, Hope, & Stewart, 2003, 2003; Tan, Hope, Stewart, & Fitzpatrick, 2003) using the MacCAT-T did not show any problems in mental capacity to consent to treatment in a sample of 10 adolescents with AN who had been severely ill. However, the interview was done retrospectively, looking back at a period of more severe illness and thus not at the clinically relevant moment for consent to treatment. One quantitative study in 35 adolescents with AN (Turrell, Peterson-Badali, & Katzman, 2011) showed mild problems with reasoning compared to healthy controls. Recently we published the results of a large study into mental capacity to consent to treatment in 70 severely

ill patients with AN (Elzakkers, Danner, Hoek, & van Elburg, 2016). It was shown that mental capacity as judged by the clinician was diminished in one-third of the patients and that associated factors of this diminished mental capacity were a lower body mass index (BMI), previous treatment for AN and previous hospitalization. That study used the MacCAT-T as well as clinicians' judgment in the assessment of mental capacity. The results indicated that in AN it was the aspect of appreciation that was driving diminished mental capacity (as determined by the clinician), in line with the findings by Owen et al. (2013) in a more general psychiatric population.

In AN the discussion regarding the mental capacity assessment focusing too much on cognitive abilities and paying too little attention to the role of emotions is very much alive (Breden & Vollmann, 2004; Charland, 1998; Charland, 2007; Tan, 2003; Tan et al., 2006; Tan et al., 2009; Vollmann, 2006). That discussion also argues that values of patients do not get enough merit in the MacCAT-T. However, in a reply to this criticism Grisso and Appelbaum (2006) remark that the assessment of appreciation in the MacCAT-T captures the effects of emotion and personal values. Adding to the criticism, Sturman (2005) mentioned that the distorted or false beliefs so commonly encountered in patients with AN might not emerge well enough in the assessment of mental capacity, whilst they have a profound impact on the choice of the patient. This suggests that mental capacity to consent to treatment in AN might be even more complex than in other psychiatric disorders.

1.5. The current study

Many issues are as yet unresolved in assessing mental capacity in AN. As a starting point we therefore conducted a large longitudinal study to find parameters associated with diminished mental capacity in patients with AN, which we reported on previously (Elzakkers et al., 2016). The issue of the mental capacity assessment itself is the focus of the current paper. Using our data from the first large scale study into mental capacity in AN described earlier (Elzakkers et al., 2016) we compared clinical judgment and outcome of the MacCAT-T in patients with AN. The MacCAT-T ratings of severely ill patients with AN will be discussed in comparison to clinical judgment, and feasibility of the MacCAT-T in daily clinical practice will be addressed.

2. Method

Details of the original study design are described elsewhere (Elzakkers et al., 2016). Briefly, a group of 70 adult women with AN assessed and treated in a specialized center for eating disorders in The Netherlands participated in a study of mental capacity to consent to treatment. Group characteristics are shown in Tables 1 and 2. Altrecht Eating Disorders Rintveld is a specialist eating disorder department of the Altrecht Mental Health Institute that offers assessments, consultation and treatment for in- and outpatients. All consecutive adult female

Table 1
Characteristics of participants (n = 70).

Characteristic	Value (s.d.)
Age (years)	27.3 (9.7)
Age of onset (in years)	17.8 (4.9)
Length of illness (years)	8.6 (8.1)
BMI	15.5 (1.9)
EDE	3.6 (1.3)
ANR	49%
ANP	51%
Previous ED treatment	74%
Previous hospitalization	46%
Medication	58%

s.d., standard deviation; BMI, body mass index; EDE, Eating Disorder Examination, a structured interview for diagnosing eating disorders culminating in a score from 0 to 6; ANR, anorexia nervosa restrictive subtype; ANP, anorexia nervosa purging subtype; ED, eating disorder.

Table 2
Comorbid axis I disorders of participants (n = 62) classified with SCID-I.

	N	%
Depressive disorders	30	48.4
Anxiety disorders	42	70.0
PTSD	13	21.7
Social phobia	11	18.3
GAD	8	13.3
OCD	4	6.7
Panic disorder	4	6.7
ADNOS	2	3.3

PTSD, post-traumatic stress disorder; GAD, generalized anxiety disorder; OCD, obsessive compulsive disorder; ADNOS, anxiety disorder not otherwise specified.

patients who were referred to our center from February 2012 to July 2013 were eligible for inclusion if they had a diagnosis of AN or EDNOS clinically referred to as AN according to DSM-IV (American Psychiatric Association, Task Force on DSM-IV, 2000). The only exclusion criterion for this study was an IQ lower than 70, as we expected neuropsychological difficulties in this group of patients due to their cognitive impairments. The presence of AN was established by eating disorder experts (all psychiatrists) and confirmed by the Eating Disorder Examination (EDE, Cooper & Fairburn, 1987). The study was conducted in accordance with the ethical standards described by the Medical Research Involving Human Subjects Act (WMO) and was approved by the Institutional Review Board. After complete description of the study to the participants, written informed consent was obtained.

2.1. Assessment of mental capacity

Mental capacity to consent to treatment was assessed in two ways. Firstly, a psychiatrist seeing the patient for clinical assessment after referral to our center noted his or her impression of the degree of mental capacity regarding the decision to enter treatment as full or diminished. The psychiatrists assessing patients had several years of experience in the field of eating disorders and were thus used to the way patients could present their symptoms (e.g. playing down of severity). Secondly, the MacCAT-T scoring for every participant was done by another clinician who was blind to the judgment by the first psychiatrist (the clinical judgment). A total of seven medical doctors or psychiatrists were involved in the MacCAT-T scoring. In a previous publication we reported high intra class coefficients (ICC) for the subscales of the MacCAT-T (Elzakkers et al., 2016).

The MacCAT-T is a semi structured interview to assess mental capacity. The MacCAT-T generates four ratings (Understanding 0–6, Reasoning 0–8, Appreciation 0–4 and Making a Choice 0–2), which are not combined into a total score. Clinicians were trained in administering the MacCAT-T by watching the instruction DVD and reading the manual (Grisso & Appelbaum, 1998). The patient's decision whether or not to follow the doctor's treatment advice was used as content for the semi-structured interview, so it was tailored to the specific situation of the patient. The doctor's treatment advice was for either inpatient or outpatient treatment. As the MacCAT-T is about the process of arriving at a choice and explicitly not about the content of the actual choice itself, differences in treatment advice did not hinder this assessment.

Table 3
MacCAT-T ratings for patient groups with full and diminished mental capacity.

	Understanding 0–6 Mean (sd)	Min-max	Appreciation 0–4 Mean (sd)	Min-max	Reasoning 0–8 Mean (sd)	Min-max	Choice 0–2 Mean (sd)	Min-max
Full MC	5.8 (0.4)	4.5–6	3.8 (0.4)	2–4	7.4 (1.0)	4–8	2.0 (0.3)	0–2
Diminished MC	5.7 (0.5)	4.6–6	3.5* (0.9)	1–4	7.1 (1.3)	3–8	1.9 (0.3)	1–2

MC, mental capacity; sd, standard deviation; min, minimum rating; max, maximum rating.

* p 0.03 (ratings on other subscales did not differ significantly).

2.2. Formation of two groups from the entire study sample

Patients were divided into two groups based on psychiatrists' clinical judgments as having either "full mental capacity" or "diminished mental capacity" (for details see Elzakkers et al., 2016). The total group was also divided into two groups based on ratings on the four subscales of the MacCAT-T. In a previous study using the MacCAT-T, Owen et al. (2013) used a rating of 50% or less on a subscale to indicate a poor outcome and any rating over 50% as a good outcome. To create two groups (full and diminished mental capacity) based on MacCAT-T scores, this cut off was adapted in the present study. For every subscale a patient could rate poor (50% or less of the maximum rating on that subscale), intermediate (51–75% of the maximum rating) and good (76–100%). If a patient had a poor or intermediate rating on one or more of the four subscales, this patient was regarded as having diminished mental capacity on the MacCAT-T. All others were rated as possessing full mental capacity. A somewhat higher cut off rating than Owen et al. was used, as full mental capacity is the preferred situation and anything that impedes on this was presumed to be clinically meaningful in so ill a population with such high stakes surrounding their decision-making regarding treatment.

2.3. Statistical analysis

To test for differences on the MacCAT-T subscales between the two mental capacity groups based on clinical judgment, independent *t*-tests were used. To test agreement between clinical judgments and the MacCAT-T, a kappa coefficient was calculated.

3. Results

Table 3 shows ratings on the MacCAT-T divided into the two mental capacity groups based on clinical judgment (full and diminished mental capacity). This result has been published before (Elzakkers et al., 2016), but is presented again for the reader's information. Mean ratings on the MacCAT-T were all above 50% of the maximum rating values on every subscale of the MacCAT-T, but a significant difference was present with regard to the Appreciation subscale. The group with diminished mental capacity (as assessed by the clinician) had a significantly lower appreciation rating than the group with full mental capacity.

Based on clinical judgment, 46 patients had full mental capacity and 24 diminished mental capacity. Based on the MacCAT-T, 43 patients had full mental capacity and 25 diminished capacity. Two participants were not scored using the MacCAT-T as they only consented to do part of the questionnaires. This means that both clinicians and the MacCAT-T would judge about one-third of the entire group as having either diminished or absent mental capacity. At first this might suggest excellent agreement between the two measurements. However, when the intersection of the two outcomes for each of the measures is examined (see Table 4), it is apparent that the agreement is not so strong. For 32 participants, clinicians and MacCAT-T assessment agreed on full mental capacity, and they agreed for 12 participants on diminished mental capacity. So in 65% of cases the two measures agreed with each other. But 13 patients who were judged to have full mental capacity by the clinicians were assessed as having diminished mental capacity by the MacCAT-T rating, and of the 23 patients the clinicians judged to

Table 4
Agreement between clinical judgment and MacCAT-T on mental capacity assessment.

		MacCAT-T		
		Full MC	Diminished MC	N
Clinical judgment	Full MC	32	13	45
	Diminished MC	11	12	23
	N	43	25	68

NB; N = 68 and not 70 as two participants did not do the MacCAT-T. MC, mental capacity.

have diminished mental capacity, nearly one-half (11 patients) showed good MacCAT-T ratings. Kappa value between clinical judgment and MacCAT-T was 0.23, suggesting questionable agreement (Landis & Koch, 1977).

The doctors conducting the MacCAT-T semi-structured interview reported it was feasible to administer it in clinical practice. The preparation for the interview took approximately 10 min while the interview itself ranged from 15 to 20 min. Clinicians did not experience difficulties in training nor in executing the interview. Patients reported that the interview gave them another opportunity to think things over and generally were positive about the interview.

4. Discussion

In this paper the aim was to examine the agreement between clinicians' judgment and the MacCAT-T in the assessment of mental capacity to consent to treatment in severely ill patients with AN. We found that clinicians' judgments and MacCAT-T conclusions identified the same proportion of patients with AN as having adequate capacity (about two-thirds), however agreement between the two measures was only moderate (k 0.23).

Approximately two-thirds of the 68 participants showed no serious deficiencies on any of the MacCAT-T subscales. The finding that clinicians judged one-third of the patients with AN to have diminished mental capacity was strikingly high. Appreciation ratings on the MacCAT-T differed significantly between those whom clinicians perceive as having full and diminished mental capacity. However in comparison to ratings of appreciation in other psychiatric populations such as among patients with dementia (appreciation rating 2.4) and schizophrenia (appreciation rating 2.8) this difference is subtle (Vollmann et al., 2003).

The poor agreement between clinicians' judgments and scores using the standardized MacCAT-T causes a dilemma to clinicians treating patients with AN. Inter rater reliability between clinicians in the assessment of mental capacity is known to be low (Kitamura & Kitamura, 2000; Marson et al., 1997; Shah & Mukherjee, 2003; Vellinga, Smit, Van Leeuwen, Van Tilburg, & Jonker, 2004). Mental capacity often is overestimated in daily clinical practice (Lepping, 2011; Lepping et al., 2010). Thus a standardized instrument to raise the reliability of this assessment could be a valuable contribution to daily practice, especially since this instrument, the MacCAT-T, has shown good inter rater reliability in other populations before (Cairns et al., 2005; Grisso et al., 1997).

The MacCAT-T has been criticized in the past, mainly for having too much focus on rationality and cognitive abilities (Breden & Vollmann, 2004; Charland, 1998). This criticism is voiced loudest regarding patients with AN (Charland, 2007; Tan, 2003; Tan et al., 2006; Tan et al., 2009; Vollmann, 2006). Altered values (so called "pathological" values) towards life and death have been shown in currently ill patients with AN as opposed to recovered patients (Tan et al., 2003; Tan et al., 2003, 2003) and obviously this complicates treatment in a profound way. When an outcome that is generally feared by many patients in general ("you might die") does not mean the same for the patient as for the clinician, it becomes very hard to motivate the patient to change life threatening behaviour. Also, Tan et al. (2003, 2003b) and Tan et al. (2003) revealed in their qualitative studies that AN is often seen as part of the personal identity of the patient, in contrast to many other

mental disorders, like anxiety or depressive disorders. In the literature, therefore, doubts exist whether or not the MacCAT-T, even though appreciation is also assessed, can grasp the subtleties in mental capacity issues in AN. In a comment by Grisso and Appelbaum (2006) regarding this criticism, they remark that values actually are an inherent part of the MacCAT-T when assessing appreciation of the disorder. Also, Grisso and Appelbaum warn against complicating the concept of mental capacity by incorporating the element of "pathological" values. In their view sensitivity and reliability of the mental capacity assessment might be compromised and patients' rights might be diminished by using such a moral concept in the assessment.

The finding that clinicians judged one-third of patients with AN as having diminished mental capacity is remarkable in itself. In no other study into mental capacity do clinicians judge so many patients as having problems with their mental capacity, not even in major depression or schizophrenia, although overestimation of mental capacity is acknowledged. (Lepping et al., 2010). But of the 23 participants judged by clinicians as having diminished capacity, only 12 were found to have diminished capacity on the MacCAT-T. Could it be that clinicians overestimate absence of mental capacity in AN? This would be an exceptional finding and contrary to what has been found before in other disorders (Cairns et al., 2005; Lepping, 2011; Vellinga et al., 2004; Vollmann et al., 2003) Overestimation of mental capacity by the MacCAT-T would also be contrary to the present literature and therefore not likely. On the other hand, of the 45 participants judged by the clinician to have full mental capacity, 13 had diminished mental capacity according to the ratings on the MacCAT-T. Might the MacCAT-T be more sensitive and reveal a blind spot in the judgment of clinicians?

Data of the current study cannot answer these important questions, but it is clear that use of the MacCAT-T in AN encounters specific issues not seen in other psychiatric disorders. The claim that the MacCAT-T emphasizes cognitive abilities and is less sensitive to values or emotions might be part of the explanation for the difference between the two types of judgment. In AN, emotional dysregulation (difficulty in recognizing and processing emotions) is a well-known maintaining factor (Danner et al., 2016; Fairburn et al., 2009; Harrison et al., 2010; Treasure & Schmidt, 2013; Wildes et al., 2014). Being severely underweight can further compromise this ability of recognizing and processing emotions. Possibly clinicians working with patients with AN let themselves be guided by this knowledge and therefore judge other patients to have diminished mental capacity than when a more "neutral" assessment like the MacCAT-T is done. The clinical judgment was done in an interview lasting for about one hour where other symptoms and personal circumstances were discussed. In the MacCAT-T interview the topic of discussion was much more focused with less contextual information. In that sense, overestimation of mental capacity problems in the clinical judgment or underestimation of mental capacity problems in the MacCAT-T interview might arise, but this is speculative.

4.1. Strengths and limitations

A major strength of this study is the size of the group, which is large for the AN field, and the naturalistic design, excluding no patients on the basis of comorbidity. In this way the generalizability of the results is high. Also the fact that the group consists of severely ill patients is a strength, as particularly in this group mental capacity is a relevant issue.

Limitations include the lack of inter rater reliability measurement of the clinical judgment, which was judged not feasible in daily practice, and possibly the way the groups with full and diminished mental capacity were made based on the MacCAT-T scores. The MacCAT-T has no cut off scores, so our classification was indeed artificial. In adapting previously published cut off scores (Owen et al., 2013) an effort was made at least do this systematically. Regarding the higher cut off ratings than in the study by Owen et al. (2013) false positives were regarded

as the lesser problem (this being an explorative study) as future studies would be able to specify in a more detailed way what would constitute diminished mental capacity. The kappa value of 0.23 is lower than that reported (0.45) in the review by Okai et al. (2007). Possibly the low to medium kappa values could also be explained by a difference in the concepts that are measured. Perhaps the clinical judgment and the MacCAT-T tap on different underlying concepts of mental capacity which might in part explain the lack of good agreement between the two measurements. Although this is speculative, it would fit the unease clinicians had in this particular study when the MacCAT-T ratings were all adequate but their own clinical intuition told them otherwise.

4.2. Suggestions for future research

Summarising the results, it can be said that clinicians and MacCAT-T have questionable agreement in the assessment of mental capacity in patients with AN and that MacCAT-T ratings generally are near maximum values. This suggests subtle difficulties in mental capacity problems in patients with AN, and precisely this subtlety might be a complicating element in the assessment of mental capacity in AN. The most important recommendation is for further research to replicate and explore the finding, because these results stem from the first large scale study into mental capacity to consent to treatment in AN. In future studies the inter rater reliability of the clinical judgment regarding mental capacity should be determined by asking two different clinicians to judge the mental capacity of the same patient, as this has not yet been studied in patients with AN. If this reveals a high inter rater reliability, then the question would remain which assessment is more valid. If inter rater reliability proves low, this would scientifically speak in favor of a larger role for the MacCAT-T in the assessment of mental capacity in AN. As the MacCAT-T specifically has been designed to aid clinicians in their mental capacity judgment, studies using the MacCAT-T in that way (and not as separate assessment) could provide meaningful information. Qualitative studies investigating clinicians' reasons to say mental capacity is diminished might shed more light on the present difference between the two assessments and might be helpful in bridging that gap. Although not a subject of the present study, future studies in patients and their carers from the legal-ethical field could furthermore be informative in the ongoing discussion regarding the presumed dominance of the concept of autonomy in mental capacity assessments and how to incorporate the concept of care ethics in clinical practice. This discussion touches upon the concept of mental capacity and could potentially influence the way mental capacity is assessed in clinical practice.

4.3. Conclusion

As for now, we advise the use of the MacCAT-T in the education of clinicians, especially those in the beginning of training, to familiarize them with abilities relevant to mental capacity in general. Also, when grave decisions regarding treatment of patients with AN have to be made, the MacCAT-T might aid the clinician in the assessment of mental capacity. As can be seen in Table 3, in 44 participants full mental capacity was agreed on by clinician and MacCAT-T. In practice, clinicians could do their own assessment and then (especially in complex cases) do the MacCAT-T. When both measures agree, one could be justifiably confident regarding the assessment. If not, more contextual information and advice from colleagues needs to be sought. In the mental capacity assessment itself, premorbid beliefs and wishes of the patient should be discovered by talking to patients themselves, their families and by involving other team members. In this way the assessment will be done more thoroughly and possible distortions of reality, diminished appreciation of disorder by the patient, will be better revealed.

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References

- American Psychiatric Association. Task Force on DSM-IV (2000). *Diagnostic and statistical manual of mental disorders, DSM-IV-TR* (4th ed., text rev. ed.). Washington, DC: American Psychiatric Association.
- Appelbaum, P., & Grisso, T. (1988). Assessing patients' capacities to consent to treatment. *The New England Journal of Medicine*, 319, 1635–1638.
- Appelbaum, P. S., & Grisso, T. (1995). The MacArthur Treatment Competence Study. I: Mental illness and competence to consent to treatment. *Law and Human Behavior*, 19, 105–126.
- Appelbaum, P. S., & Roth, L. H. (1982). Competency to consent to research: A psychiatric overview. *Archives of General Psychiatry*, 39, 951–958.
- Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Archives of General Psychiatry*, 68, 724–731. <https://doi.org/10.1001/archgenpsychiatry.2011.74>.
- Beauchamp, T., & Childress, J. (Eds.). (2001). *Principles of biomedical ethics* (5th ed.). Oxford University Press.
- Beauchamp, T. L., & Childress, J. (1994). *Principles of biomedical ethics*. New York: Oxford University Press.
- Berghmans, R., Dickenson, D., & Meulen, R. T. (2004). Mental capacity: In search of alternative perspectives. *Health Care Analysis: HCA: Journal of Health Philosophy and Policy*, 12, 251–263 (discussion 265–72).
- Bloch, S., & Green, S. A. (2006). An ethical framework for psychiatry. *British Journal of Psychiatry*, 188, 7–12.
- Breden, T. M., & Vollmann, J. (2004). The cognitive based approach of capacity assessment in psychiatry: A philosophical critique of the MacCAT-T. *Health Care Analysis: HCA: Journal of Health Philosophy and Policy*, 12, 273–283 (discussion 265–72) <https://doi.org/10.1007/s10728-004-6635-x>.
- Cairns, R., Maddock, C., Buchanan, A., David, A. S., Hayward, P., Richardson, G., & Hotopf, M. (2005). Reliability of mental capacity assessments in psychiatric in-patients. *The British Journal of Psychiatry: the Journal of Mental Science*, 187, 372–378. <https://doi.org/10.1192/bjp.187.4.372>.
- Candia, P. C., & Barba, A. C. (2011). Mental capacity and consent to treatment in psychiatric patients: The state of the research. *Current Opinion in Psychiatry*, 24, 442–446. <https://doi.org/10.1097/YCO.0b013e328349bba5>.
- Chan, T. W. S., Ahn, W., Bates, J. E., Busemeyer, J. R., Guillaume, S., Redgrave, G. W., & Courtet, P. (2014). Differential impairments underlying decision making in anorexia nervosa and bulimia nervosa: A cognitive modeling analysis. *International Journal of Eating Disorders*, 47, 157–167.
- Charland, L. C. (1998). Appreciation and emotion: Theoretical reflections on the MacArthur Treatment Competence Study. *Kennedy Institute of Ethics Journal*, 8, 359–376.
- Charland, L. C. (2007). Anorexia and the MacCAT-T test for mental competence, validity, value, and emotion. *Philosophy, Psychiatry, & Psychology*, 13(4), 283–287.
- Cooper, Z., & Fairburn, C. (1987). The eating disorder examination: A semi-structured interview for the assessment of the specific psychopathology of eating disorders. *International Journal of Eating Disorders*, 6, 1–8. [https://doi.org/10.1002/1098-108X\(198701\)6:1<1::AID-EAT2260060102>3.0.CO;2-9](https://doi.org/10.1002/1098-108X(198701)6:1<1::AID-EAT2260060102>3.0.CO;2-9).
- Damasio, A. R. (1994). Descartes' error and the future of human life. *Scientific American*, 271, 144.
- Damasio, A. R. (1996). The somatic marker hypothesis and the possible functions of the prefrontal cortex. *Philosophical Transactions of the Royal Society of London, Series B: Biological Sciences*, 351, 1413–1420. <https://doi.org/10.1098/rstb.1996.0125>.
- Danner, U. N., Sanders, N., Smeets, P. A. M., van Meer, F., Adan, R. A. H., Hoek, H. W., & van Elburg, A. A. (2012). Neuropsychological weaknesses in anorexia nervosa: Set-shifting, central coherence, and decision making in currently ill and recovered women. *International Journal of Eating Disorders*, 45, 685–694. <https://doi.org/10.1002/eat.22007>.
- Danner, U. N., Sternheim, L., Bijsterbosch, J. M., Dingemans, A. E., Evers, C., & van Elburg, A. A. (2016). Influence of negative affect on decision making in women with restrictive and binge-purge type anorexia nervosa. *Psychiatry Research*, 239, 39–46. <https://doi.org/10.1016/j.psychres.2016.02.054>.
- Dawson, J., & Szmukler, G. (2006). Fusion of mental health and incapacity legislation. *The British Journal of Psychiatry: the Journal of Mental Science*, 188, 504–509. <https://doi.org/10.1192/bjp.188.6.504>.
- DeMarco, J. P. (2002). Competence and paternalism. *Bioethics*, 16, 231–245. <https://doi.org/10.1111/1467-8519.00283>.
- Dornan, J., Kennedy, M., Garland, J., Rutledge, E., & Kennedy, H. G. (2015). Functional mental capacity, treatment as usual and time: Magnitude of change in secure hospital patients with major mental illness. *BMC Research Notes*, 8, 1–9.
- Elzakkers, I. F. F. M., Danner, U. N., Hoek, H. W., & van Elburg, A. A. (2016). Mental capacity to consent to treatment in anorexia nervosa: Explorative study. *British Journal of Psychiatry Open*, 2, 147–153.
- Erskine, H. E., Whiteford, H. A., & Pike, K. M. (2016). The global burden of eating disorders. *Current Opinion in Psychiatry*, 29, 346–353 Retrieved from <http://131.211.208.19/login?auth=eng&url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=ovfr&AN=00001504-201611000-00006>.
- Fairburn, C. G., Cooper, Z., Doll, H. A., O'Connor, M. E., Bohn, K., Hawker, D. M., & Palmer, R. L. (2009). Transdiagnostic cognitive-behavioral therapy for patients with eating

- disorders: A two-site trial with 60-week follow-up. *The American Journal of Psychiatry*, 166, 311–319. <https://doi.org/10.1176/appi.ajp.2008.08040608>.
- Fernandez-Aranda, F., Pinheiro, A. P., Tozzi, F., La Via, M., Thornton, L. M., Plotnicov, K. H., & Crawford, S. F. (2007). Symptom profile of major depressive disorder in women with eating disorders. *Australian and New Zealand Journal of Psychiatry*, 41, 24–31. <https://doi.org/10.1080/00048670601057718>.
- Fichter, M. M., & Quadflieg, N. (2016). Mortality in eating disorders - Results of a large prospective clinical longitudinal study. *The International Journal of Eating Disorders*, 49, 391–401.
- Galimberti, E., Fadda, E., Cavallini, M. C., Martoni, R. M., Erzegovesi, S., & Bellodi, L. (2012). Executive functioning in anorexia nervosa patients and their unaffected relatives. *Psychiatry Research*. <https://doi.org/10.1016/j.psychres.2012.10.001>.
- Grisso, T., & Appelbaum, P. S. (1995). The MacArthur Treatment Competence Study. III: Abilities of patients to consent to psychiatric and medical treatments. *Law and Human Behavior*, 19, 149–174.
- Grisso, T., & Appelbaum, P. S. (1998). *Assessing competence to consent to treatment: A guide for physicians and other health professionals*.
- Grisso, T., & Appelbaum, P. S. (2006). Appreciating anorexia: Decisional capacity and the role of values. *Philosophy, Psychiatry, & Psychology*, 13, 293–301.
- Grisso, T., Appelbaum, P. S., & Hill-Fotouhi, C. (1997). The MacCAT-T: A clinical tool to assess patients' capacities to make treatment decisions. *Psychiatric Services (Washington, D.C.)*, 48, 1415–1419.
- Grisso, T., Appelbaum, P. S., Mulvey, E. P., & Fletcher, K. (1995). The MacArthur Treatment Competence Study. II: Measures of abilities related to competence to consent to treatment. *Law and Human Behavior*, 19, 127–148.
- Harrison, A., Sullivan, S., Tchanturia, K., & Treasure, J. (2010). Emotional functioning in eating disorders: Attentional bias, emotion recognition and emotion regulation. *Psychological Medicine*, 40, 1887–1897. <https://doi.org/10.1017/S0033291710000036>.
- Hay, P., Chinn, D., Forbes, D., Madden, S., Newton, R., Sugenor, L., & Ward, W. (2014). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. *Australian and New Zealand Journal of Psychiatry*, 48, 977–1008. <https://doi.org/10.1177/0004867414555814>.
- Herzog, W., Deter, H., Fiehn, W., & Petzold, E. (1997). Medical findings and predictors of long-term physical outcome in anorexia nervosa: A prospective, 12-year follow-up study. *Psychological Medicine*, 27, 269–279. <https://doi.org/10.1017/S0033291796004394>.
- Hoek, H. W. (2006). Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Current Opinion in Psychiatry*, 19, 389–394. <https://doi.org/10.1097/01.yco.0000228759.95237.78>.
- Hotopf, M. (2005). The assessment of mental capacity. *Clinical Medicine*, 5, 580–584.
- Keel, P. K., & Brown, T. A. (2010). Update on course and outcome in eating disorders. *The International Journal of Eating Disorders*, 43, 195–204. <https://doi.org/10.1002/eat.20810>.
- Keski-Rahkonen, A., Hoek, H. W., Susser, E. S., Linna, M. S., Sihvola, E., Raevuori, A., ... Rissanen, A. (2007). Epidemiology and course of anorexia nervosa in the community. *American Journal of Psychiatry*, 164, 1259–1265.
- Keski-Rahkonen, A., & Mustelin, L. (2016). Epidemiology of eating disorders in Europe: Prevalence, incidence, comorbidity, course, consequences and risk factors. *Current Opinion in Psychiatry*, 29, 340–345. <https://doi.org/10.1097/YCO.0000000000000278>.
- Kitamura, T., & Kitamura, F. (2000). Reliability of clinical judgment of patients' competency to give informed consent: A case vignette study. *Psychiatry and Clinical Neurosciences*, 54, 245–247.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159–174. <https://doi.org/10.2307/2529310>.
- Lepping, P. (2011). Overestimating patients' capacity. *British Journal of Psychiatry*, 199, 355–356.
- Lepping, P., & Raveesh, B. N. (2014). Overvaluing autonomous decision-making. *British Journal of Psychiatry*, 204, 1–2.
- Lepping, P., Sambhi, R. S., & Williams-Jones, K. (2010). Deprivation of liberty safeguards: How prepared are we? *Journal of Medical Ethics*, 36, 170–173.
- Lopez, C., Tchanturia, K., Stahl, D., & Treasure, J. (2008). Central coherence in eating disorders: A systematic review. *Psychological Medicine*, 38, 1393–1404. <https://doi.org/10.1017/S0033291708003486>.
- Mandarelli, G., Carabellese, F., Parmigiani, G., Bernardini, F., Pauselli, L., Quartesan, R., & Ferracuti, S. (2017). Treatment decision-making capacity in non-consensual psychiatric treatment: A multicentre study. *Epidemiology and Psychiatric Sciences*, 1–8. <https://doi.org/10.1017/S2045796017000063>.
- Mandarelli, G., Sabatello, U., Laponi, E., Pace, G., Ferrara, M., & Ferracuti, S. (2016). Treatment decision-making capacity in children and adolescents hospitalized for an acute mental disorder: The role of cognitive functioning and psychiatric symptoms. *Journal of Child and Adolescent Psychopharmacology*. <https://doi.org/10.1089/cap.2016.0092>.
- Marson, S. D., McInturff, B., Hawkins, L., Bartolucci, A., & Harrell, L. E. (1997). Consistency of physician judgments of capacity to consent in mild Alzheimer's disease. *Journal of the American Geriatrics Society*, 45, 453–457.
- Naqvi, N., Shiv, B., & Bechara, A. (2006). The role of emotion in decision making. *Current Directions in Psychological Science*, 15, 260–264. <https://doi.org/10.1111/j.1467-8721.2006.00448.x>.
- National Institute for Health and Care Excellence (2017, May). *Eating disorders: Recognition and treatment (London, United Kingdom)*.
- Okai, D., Owen, G., McGuire, H., Singh, S., Churchill, R., & Hotopf, M. (2007). Mental capacity in psychiatric patients: Systematic review. *The British Journal of Psychiatry: The Journal of Mental Science*, 191, 291–297. <https://doi.org/10.1192/bjp.bp.106.035162>.
- Owen, G. S., Szmukler, G., Richardson, G., David, A. S., Raymont, V., Freyenhagen, F., ... Hotopf, M. (2013). Decision-making capacity for treatment in psychiatric and medical in-patients: Cross-sectional, comparative study. *British Journal of Psychiatry*, 203, 461–467.
- Radden, J. (2002). Notes towards a professional ethics for psychiatry*. *Australian and New Zealand Journal of Psychiatry*, 36, 52–59. <https://doi.org/10.1046/j.1440-1614.2002.00989.x>.
- Raney, T. J., Thornton, L. M., Berrettini, W., Brandt, H., Crawford, S., Fichter, M. M., & Bulik, C. M. (2008). Influence of overanxious disorder of childhood on the expression of anorexia nervosa. *International Journal of Eating Disorders*, 41, 326–332. <https://doi.org/10.1002/eat.20508>.
- Raymont, V., Bingley, W., Buchanan, A., David, A. S., Hayward, P., Wessely, S., & Hotopf, M. (2004). Prevalence of mental incapacity in medical inpatients and associated risk factors: Cross-sectional study. *Lancet*, 364, 1421–1427. [https://doi.org/10.1016/S0140-6736\(04\)17224-3](https://doi.org/10.1016/S0140-6736(04)17224-3).
- Remmers, C., & Michalak, J. (2016). Losing your gut feelings. Intuition in depression. *Frontiers in Psychology*, 7, 1291. <https://doi.org/10.3389/fpsyg.2016.01291>.
- Richardson, G. (2007). Balancing autonomy and risk: A failure of nerve in England and Wales? *International Journal of Law and Psychiatry*, 30, 71–80.
- Roth, L. H., Meisel, A., & Lidz, C. W. (1977). Tests of competency to consent to treatment. *American Journal of Psychiatry*, 134, 279–284. <https://doi.org/10.1176/ajp.134.3.279>.
- Shah, A., & Mukherjee, S. (2003). Ascertaining capacity to consent: A survey of approaches used by psychiatrists. *Medicine, Science, and the Law*, 43, 231–235.
- Smink, F. R. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports*, 14, 406–414.
- Smink, F. R. E., van Hoeken, D., & Hoek, H. W. (2013). Epidemiology, course, and outcome of eating disorders. *Current Opinion in Psychiatry*, 26, 543–548. <https://doi.org/10.1097/YCO.0b013e328365a24f>.
- Steinert, T. (2017). Ethics of coercive treatment and misuse of psychiatry. *PS*, 68, 291–294. <https://doi.org/10.1176/appi.ps.201600066>.
- Sternheim, L., Startup, H., & Schmidt, U. (2011). An experimental exploration of behavioural and cognitive-emotional aspects of intolerance of uncertainty in eating disorder patients. *Journal of Anxiety Disorders*, 25, 806–812 (doi:http://dx.doi.org.proxy.library.uu.nl/10.1016/j.janxdis.2011.03.020).
- Strober, M., Freeman, R., & Morrell, W. (1997). The long-term course of severe anorexia nervosa in adolescents: Survival analysis of recovery, relapse, and outcome predictors over 10–15 years in a prospective study. *International Journal of Eating Disorders*, 22, 339–360. [https://doi.org/10.1002/\(SICI\)1098-108X\(199712\)22:4<339::AID-EAT13.0.CO;2-N](https://doi.org/10.1002/(SICI)1098-108X(199712)22:4<339::AID-EAT13.0.CO;2-N).
- Sturman, E. D. (2005). The capacity to consent to treatment and research: A review of standardized assessment tools. *Clinical Psychology Review*, 25, 954–974 (doi: http://dx.doi.org.proxy.library.uu.nl/10.1016/j.cpr.2005.04.010).
- Szmukler, G., & Kelly, D. (2016). We should replace conventional mental health law with capacity-based law. *British Journal of Psychiatry*, 209, 449–453.
- Tan, J. (2003). The anorexia talking? *Lancet*, 362, 1246 Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=afh&AN=11037066&site=ehost-live>.
- Tan, J., Hope, T., & Stewart, A. (2003). Competence to refuse treatment in anorexia nervosa. *International Journal of Law and Psychiatry*, 26, 697–707. <https://doi.org/10.1016/j.ijlp.2003.09.010>.
- Tan, J., Hope, T., Stewart, A., & Fitzpatrick, R. (2003). Control and compulsory treatment in anorexia nervosa: The views of patients and parents. *International Journal of Law and Psychiatry*, 26, 627–645. <https://doi.org/10.1016/j.ijlp.2003.09.009>.
- Tan, J., Stewart, A., Fitzpatrick, R., & Hope, T. (2006). Studying penguins to understand birds. *Philosophy, Psychiatry, & Psychology*, 13, 299–301.
- Tan, J., Stewart, A., & Hope, T. (2009). Decision-making as a broader concept. *Philosophy, Psychiatry, & Psychology*, 16, 345–349.
- Tan, J. O. A., Hope, T., & Stewart, A. (2003). Anorexia nervosa and personal identity: The accounts of patients and their parents. *International Journal of Law and Psychiatry*, 26, 533–548. [https://doi.org/10.1016/S0160-2527\(03\)00085-2](https://doi.org/10.1016/S0160-2527(03)00085-2).
- Tchanturia, K., Davies, H., Roberts, M., Harrison, A., Nakazato, M., Schmidt, U., & Morris, R. (2012). Poor cognitive flexibility in eating disorders: Examining the evidence using the Wisconsin Card Sorting Task. *PLoS One*, 7, e28331. <https://doi.org/10.1371/journal.pone.0028331>.
- Tchanturia, K., Liao, P. C., Uher, R., Lawrence, N., Treasure, J., & Campbell, I. C. (2007). An investigation of decision making in anorexia nervosa using the Iowa Gambling Task and skin conductance measurements. *Journal of the International Neuropsychological Society: JINS*, 13, 635–641. <https://doi.org/10.1017/S1355617707070798>.
- Treasure, J., Claudino, A. M., & Zucker, N. (2010). Eating disorders. *Lancet*, 375, 583–593. [https://doi.org/10.1016/S0140-6736\(09\)61748-7](https://doi.org/10.1016/S0140-6736(09)61748-7).
- Treasure, J., & Schmidt, U. (2013). The cognitive-interpersonal maintenance model of anorexia nervosa revisited: A summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors. *Journal of Eating Disorders*, 1.
- Turrell, S. L., Peterson-Badali, M., & Katzman, D. K. (2011). Consent to treatment in adolescents with anorexia nervosa. *International Journal of Eating Disorders*, 44, 703–707. <https://doi.org/10.1002/eat.20870>.
- Vellinga, A., Smit, J. H., Van Leeuwen, E., Van Tilburg, W., & Jonker, C. (2004). Competence to consent to treatment of geriatric patients: Judgements of physicians, family members and the vignette method. *International Journal of Geriatric Psychiatry*, 19, 645–654. <https://doi.org/10.1002/gps.1139>.
- Vollmann, J. (2006). "But I don't feel it": Values and emotions in the assessment of competence in patients with anorexia nervosa. *Philosophy, Psychiatry, & Psychology*, 13, 289–291.
- Vollmann, J., Bauer, A., Danker-Hopfe, H., & Helmchen, H. (2003). Competence of mentally ill patients: A comparative empirical study. *Psychological Medicine*, 33, 1463–1471.
- Wang, S., Wang, Y., Ungvari, G., Ng, C., Wu, R., Wang, J., & Xiang, Y. (2016). The MacArthur Competence Assessment Tools for assessing decision-making

- capacity in schizophrenia: A meta-analysis. *Schizophrenia Research*. <https://doi.org/10.1016/j.schres.2016.11.020>.
- Wildes, J. E., Marcus, M. D., Cheng, Y., McCabe, E. B., & Gaskill, J. A. (2014). Emotion acceptance behavior therapy for anorexia nervosa: A pilot study. *International Journal of Eating Disorders*, 47, 870–873. <https://doi.org/10.1002/eat.22241>.
- Wong, J. G., Clare, I. C. H., Gunn, M. J., & Holland, A. J. (1999). Capacity to make health care decisions: Its importance in clinical practice. *Psychological Medicine*, 437–446.
- Zipfel, S., Giel, K. E., Bulik, C., Hay, P., & Schmidt, U. (2015, December). Anorexia nervosa: Aetiology, assessment and treatment. *Lancet Psychiatry*, 2(12), 1099–1111.