

Anna Rita Egbert, "A Framework for Ethical Decision Making in the Rehabilitation of Patients with Anosognosia," *The Journal of Clinical Ethics* 28, no. 1 (Spring 2017): 57-68.

A Framework for Ethical Decision Making in the Rehabilitation of Patients with Anosognosia

Anna Rita Egbert

ABSTRACT

Currently, the number of patients diagnosed with impaired self-awareness of their own deficits after brain injury—anosognosia—is increasing. One reason is a growing understanding of this multifaceted phenomenon. Another is the development and accessibility of alternative measurements that allow more detailed diagnoses. Anosognosia can adversely affect successful rehabilitation, as often patients lack confidence in the need for treatment. Planning such treatment can become a complex process full of ethical dilemmas.

To date, there is no systematic way to deal with different aspects of anosognosia rehabilitation planning. This is the first article to present a framework for ethical decision making in establishing rehabilitation plans that are focused on increasing patients' self-awareness of their own deficits after brain injury. It concentrates especially on addressing the ethical dilemmas that may arise, and describes stepwise procedures that can be applied to distinct theoretical approaches, as well as diagnostic and rehabilitation methods. To show the flexibility of the use of this framework, alternative approaches are discussed.

INTRODUCTION

Anosognosia is a broad term that signifies a lack of awareness of observed deficits following brain injury.¹ It is also described as a multifaceted phenom-

enon that can take different forms.² It can be found in any neurological deficit due to brain damage.³ Hence, a wide spectrum of methods should be available for individualized treatment planning.

Planning rehabilitation after brain damage begins with diagnosis, followed by distinguishing the scope and aims of treatment, making decisions concerning the types of treatment and methods to be used to achieve the stated goals, and planning assessment of the outcomes of treatment. Each of these steps should involve discussions with patients and possibly the patients' relatives.

Many approaches and methods have been established to achieve these goals and may be found in review articles.⁴ Therapists may choose approaches and methods that best address the patient's needs. For patients with anosognosia, however, the issue is more complex. Patients may not accept the diagnosis, understand the need for rehabilitation, or want to undertake the suggested treatment. Thus, an ethical problem of establishing the need for treatment arises. Lately, ethical decision-making models have been used to decide whether to treat a patient or not.⁵ "Should treatment be administered against the patient's will?" should be not the only question at that point; additional fundamental questions emerge, for example, "Even if patients agree to undertake a treatment when they are not motivated to do so, can treatment be as effective as it should be?" And more importantly, "What can and should therapists do in such cases?"

Ann Rita Egbert is a PhD Candidate at the Faculty of Psychology, University of Warsaw, Poland. anna.rita.egbert@gmail.com
© 2017 by *The Journal of Clinical Ethics*. All rights reserved.

This is the first article to provide a framework for an ethical decision-making process in anosognosia rehabilitation planning for patients with acquired brain injury. It fills a gap in addressing the ethical issues that arise during the process of establishing rehabilitation in this population and provides clinicians with a structured, stepwise procedure for planning rehabilitation for patients who show different symptoms of anosognosia. The model is flexible, and alternative methods are described.

A FRAMEWORK FOR ETHICAL DECISION MAKING IN ESTABLISHING A TREATMENT PLAN FOR ANOSOGNOSIA

The framework for ethical decision making described here is a stepwise procedure to use in rehabilitation planning for patients with brain damage and impaired awareness of their own acquired deficits. It includes the following four steps,:

1. The therapist's theoretical background and practice framework,
2. Obtaining informed consent and establishing a therapeutic alliance,
3. Diagnosis,
4. A rehabilitation plan.

1. The Therapist's Theoretical Background and Practice Framework

1.1. Establish One's Own Clinical Practice Regarding Specific Theoretical Approaches

There is now no consensus definition for anosognosia. Theoretical approaches continue to evolve based on new empirical evidence. Several key explanations exist that make it possible to systematize knowledge and provide a basis for rehabilitation planning. It is important for clinicians to clarify their own perspective, allowing them to establish and systematize their own practice using particular approaches. Therapists should have a repertoire of theoretical approaches from which to choose, depending on the needs of the patient. Several clear-cut concepts of anosognosia are presented below.

Prigatano and Schacter suggested that impairments in self-awareness may take different forms and may have an organic, cognitive, and/or psychological bases.⁶ Lesions in specific areas of the brain may cause particular impairments in self-awareness regarding deficits. When the affected areas of the brain regenerate, full unawareness of deficits may change into partial unawareness of deficits. Depending on patients' pre-morbid personality characteristics, they engage in psychologically defensive or nondefensive strategies to deal with the consequences of their ill-

ness and current situation. Therapeutic interventions should take into account both cognitive and psychological factors to holistically address the impairment of self-awareness in a particular patient.

Vuilleumier reports that anosognosia is the result of deficits in higher order processes that integrate sensory inputs with bodily representations and action planning/abnormal motor intention.⁷ Marcel and colleagues⁸ add that anosognosia is the result of a defective process of "discovering" the loss of a function through observation or indirect means, supporting Levine's discovery theory.⁹ In other words, impaired self-awareness reflects a combination of proprioceptive mechanisms and cognitive deficits.¹⁰

The *pyramidal model of awareness* divides self-awareness into three interdependent but hierarchical levels. Applying this model to anosognosia, *intellectual awareness*, at the bottom of the pyramid, is the knowledge that there are specific deficits in one's function.¹¹ Moving up one level, *emergent awareness* enables one to monitor one's own performance and to recognize errors while executing a task. At the top of the pyramid, *anticipatory awareness* allows one to predict the occurrence of difficulties regarding specific types of tasks in the future.

The *comprehensive dynamic interaction model* is based on the concept of meta-cognition and explains the relationship between self-perception and performance of different tasks.¹² The interaction between meta-cognition and awareness is seen as dynamic. Increasing self-awareness is seen as a process of restructuring self-knowledge, in two interrelated aspects. The first aspect of self-awareness includes knowledge and on-line awareness. *Knowledge* refers to beliefs about self-efficacy that are based on previous experiences (stored in long-term memory) and one's sense of being able to effectively use one's cognitive skills when needed. *On-line awareness* refers to monitoring and self-regulation: constantly evaluating one's performance while executing tasks, and changing one's responses due to the demands of performing a specific task. The second aspect of self-awareness depends on the situation and task, and so deficits in this aspect of self-awareness may become evident in performing some tasks, but not others. Knowledge, beliefs, expectations, affective state, and on-line awareness are seen as being in constant interaction. Other factors also affect their interaction, such as fatigue and motivation.

In addition to anosognosia, *denial* is another form of unawareness that may be present in a variety of health-related diseases,¹³ and so the distinction between the two impairments should be made clear

and differentially diagnosed in each patient. In contrast to anosognosia, which has underlying neurological dysfunction, denial has psychological etiology.¹⁴ Prigatano and Klonoff describe patients' reactions that occur due to denial of illness as follows: preserved partial/implicit awareness of deficits, anger in response to feedback that indicates the impairment of particular function, and the presence of active struggle when patients perform an action that involves a deficient function.¹⁵ Patients with anosognosia lack information about themselves, are perplexed when they receive feedback that indicates a deficit, and show either willingness/indifference to feedback while performing an action that involves deficient function.¹⁶

1.2. Be Aware of One's Preferences, Specialties, and Weak Points as a Practitioner

The model presented here follows the American Psychological Association *Ethical Principles of Psychologists and Code of Conduct* (hereafter, the *APA Ethical Principles*) to conduct ethical analysis. "Principle A: Beneficence and Nonmaleficence" of the *APA Ethical Principles* states that clinicians are to benefit patients with professional treatments and avoid doing harm.¹⁷ This is especially important when clinicians provide a treatment that is intended to increase self-awareness in patients with brain injury. To provide high-quality services, clinicians should cultivate self-awareness regarding their own background and practice. Further steps for improvement as a professional include distinguishing one's own specialty and weak points as a practitioner.

1.3. Constantly Update One's Own Knowledge and Practice

Conscientious clinical practice requires therapists to take active steps toward constant self-improvement as professionals and as individuals. This conforms to "Standard 2.03: Maintaining Competence," in the *APA Ethical Principles*.¹⁸ Clinicians should review the current literature and participate in peer discussion. Actualizing their knowledge will help to update their own practice.

2. Informed Consent and Establishing a Therapeutic Alliance

Obtaining the informed consent of the patient and/or the patient's relatives is one of the first steps in the process of rehabilitation planning that may create ethical issues, especially for patients with anosognosia. Every patient has the right to be informed about the treatment proposed, to be able to make an informed choice regarding the suggested therapy.

Generally, patients may approve or reject suggested treatments based on their own cultural, religious, or socioeconomic status, or on some other individual basis. For patients with anosognosia, however, a proposed rehabilitation program may be rejected because they do not acknowledge the reason for treatment. Agreement between patients and clinicians on the course of treatment is part of establishing a therapeutic alliance, which is crucial to the success of the course and outcome of rehabilitation. It may be the basis for patients and clinicians to work together toward a set of goals.¹⁹

Therefore, the first step, before patients are asked to make a decision concerning treatment, is to evaluate their decision-making capacity. It is necessary, and a great challenge, to determine whether patients are even capable of giving informed consent. Clinicians may interview the patient or use a set of guidelines proposed by Grisso and Appelbaum to determine decision-making capacity, as follows:

1. The patient understands the given information,
2. The patient appreciates the given situation and the consequences,
3. The patient is able to reason about the treatment plan and options, and
4. The patient is able to express a choice.²⁰

Tunzi describes a strategy to evaluate patients' ability to make decisions using illustrative cases.²¹ More recently, Appelbaum elaborated on the guidelines and recommendations he made with Grisso.²² Based on the outcome of these evaluations, clinicians will learn whether the patient or a surrogate should make decisions regarding treatment. This is a part of a clinical decision-making model proposed by Jonsen, Siegler, and Winslade that is explained below.²³

2.1. When Patients Are Not Mentally Capable or Legally Competent to Make Decisions

After assessment, patients may be found to be unable to make decisions. Moreover, in rare cases, patients may be declared mentally incapable or legally incompetent by the courts. In those cases, surrogates must be chosen. Many state statutes describe how to designate a surrogate; when the courts are involved, they may appoint a surrogate. This is in line with "Principle E: Respect for People's Rights and Dignity," from the *APA Ethical Principles*, because choices concerning treatment should be made by patients or surrogates.²⁴ Beyond this, the following questions should be addressed as special, additional safeguards for patients:

1. Is this patient unwilling or unable to cooperate with medical treatment?

2. Is this patient's surrogate using appropriate standards (that is, the best interest of the patient) to make treatment decisions?

Even when a patient is not able to make decisions, a therapist must still provide substantial information about the proposed treatment to the patient and the surrogate. Then, the therapist must obtain assent from the surrogate, in accord with "Standard 3.10(b): Informed Consent," of the *APA Ethical Principles*.²⁵

2.2. Provide the Patient and Surrogate with All Pertinent Information

Prior to giving informed consent, patients should receive information about their assessment, about the nature and anticipated course of treatment, fees, the involvement of third parties, and the limits of confidentiality. Patients should also be encouraged to ask questions, and they should receive satisfying answers. This procedure addresses "Standard 9.03: Informed Consent to Assessment," and "Standard 10.01: Informed Consent to Therapy," of the *APA Ethical Principles*.²⁶

2.3. An Informed Decision Is Made by the Patient or Surrogate

After all of the parties involved (that is, the patient or surrogate and therapist) are clear on the specifics, the patient or surrogate chooses whether she or he is willing to work with the therapist and accept an initial working plan—or not.

2.3.a. The patient or surrogate consent. When consent is obtained, the therapist may continue with the working plan. The patient and his or her significant others should be enabled and encouraged to take an active role in the process of rehabilitation.

2.3.b. The patient or surrogate do not consent. After a clinician suggests the best method of treatment and, if possible, gives the patient alternatives to choose from, the patient has the right to accept or refuse proceeding with proposed methods, which might depend, for example, on religious views or cultural beliefs. Should the patient or surrogate refuse, the clinician should involve the patient or surrogate in further discussion to clarify the reasons for the decision and describe other possible methods that could be used. A clinician may choose a different method of treatment to adjust to a patient's or surrogate's preferences and expectations, and always keep in mind the goals of treatment. If consent is still not given, and the clinician does not have methods in his or her practice repertoire that are agreeable to the patient or surrogate, the clinician may choose to redirect the patient to another practi-

tioner or rehabilitation center that provides treatment methods that meet the patient's or surrogate's preferences and expectations. This conforms to "Standard 2.05: Delegation of Work to Others," in the *APA Ethical Principles*.²⁷ The therapist should assure that this situation does not negatively influence the patient in a physical or psychological way.

3. Diagnosis

3.1. Choice of Diagnostic Methods

Diagnostic methods should be chosen appropriately and individually for each patient. This addresses "Standard 9.02: Use of Assessments," in the *APA Ethical Principles*.²⁸ The following key points should be considered:

- The patient's medical condition,
- The patient's currently defined disabilities and cognitive deficits,
- The patient's currently defined intact functions,
- The patient's pre-morbid cognitive functioning,
- The patient's pre-morbid personality and psychological coping style,
- The presence and absence of persons who can provide knowledge about the patient,
- The theoretical background of the diagnostician,
- Available measures.

Anosognosia is most commonly assessed by comparing observed deficits with verbal self-reports by the patient.²⁹ Deficits are identified by a diagnostician, persons who know the patient, or both. The diagnostician observes the patient, evaluates neuropsychological test results, and consults the patient's medical history. Persons who know the patient can identify changes in her or his behavior through the comparison of the patient's current functioning with the patient's pre-morbid functioning.³⁰ To elicit a patient's verbal self-report, a structured clinical interview or questionnaire is typically used.³¹ A patient's pre-task and post-task verbal estimations of his or performance may also be used as a measure.³²

There is an alternative to a verbal report: by observing a patient perform a normal task, a clinician can estimate the number of corrections of errors and the patient's reactions (verbal and nonverbal) during and after the task as an indirect indication of the patient's impairment in self-awareness of her or his own functioning.³³ Less commonly used, VATA-m (a visual-analogue test for anosognosia for motor impairment) and VATA-l (a visual-analogue test for anosognosia for language impairment) are instruments that assess self-awareness for impairments.³⁴

Currently, a multi-modal approach to assessment of anosognosia is gaining popularity.³⁵

3.2. State the Diagnosis and Prognosis

An assessment should be finalized with a clear picture of a patient's deficits and intact functions. It is important to include the severity or phase of the impairments. Based on all of the information gathered, a prognosis should be made. The following questions should be addressed:

1. Is neuropsychological rehabilitation needed?
2. Is it the best option for this particular patient?
3. Are the deficits reversible?

3.2.a. If the answers to these questions are "yes."

A clinician then should ask, "What are the aims of rehabilitation?" A clinician should make clear the main goals and the partial steps needed to achieve the main goals. The goals should be realistic and individualized for each patient.

3.2.b. If the answers to these questions are "no."

A clinician should then ask, "What can the patient be offered?" When a patient will not benefit from treatment and/or a therapy will cause harm, the clinician should consider alternative options. Perhaps the therapy could be postponed? Or should a different type of therapy be offered, for example, family support, psychotherapy, or adjustment of the patient's environment (for example, to protect a patient with unilateral neglect—lack of awareness of one side of the body or lack of response to stimuli on one side—to prevent physical harm). This is in accord with "Principle A: Beneficence and Nonmaleficence," of the APA *Ethical Principles*.³⁶

4. The Rehabilitation Plan

The ethical considerations that arise in anosognosia rehabilitation planning are most evident in the phase after diagnosis, when a clinician develops a scope of rehabilitation to present to the patient or surrogate and to discuss it with him or her. There are three key questions to be addressed in this phase:

1. Is neuropsychological rehabilitation needed, and is it the best option for this particular patient?
2.
 - a. If the answer is "no," what should the patient be offered?
 - b. If the answer is "yes," what are the goals of rehabilitation?
3. How should these goals be achieved, taking into consideration the patient's preferences?

Developing a treatment plan is complex for patients with anosognosia. Due to a patient's symptoms, she or he may be not willing to undertake rehabilitation. Rehabilitation planning, at that point, becomes an ethical problem. There are several models for ethical clinical decision making that may be

used to plan treatment in an organized fashion and to ensure that ethical standards are followed. The following outline for developing a treatment plan for patients with anosognosia uses the *clinical ethical reasoning model* that was developed by Kaldjian, Weir, and Duffy:

1. Define the problem: The clinician identifies the cause of the dilemma. Here, for anosognosia, a neuropsychologist may suggest rehabilitation that concentrates on cognitive function, but the patient does not believe he or she needs to improve anything in his or her own functioning.
2. Gather and organize data: The clinician gathers information about the patient's case, that is:
 - a. Medical facts: The patient's condition, diagnosis, prognosis, cognitive and emotional status, decision-making ability, the benefits and burdens that may result from the recommended treatment, the probability that the goals of rehabilitation may be achieved.
 - b. Medical goals: The goals of rehabilitation.
 - c. Patient's goals and preferences: The patient's personal goals (based on his or her values and beliefs) are incorporated into the model of benefits and burdens, considering each of the options for rehabilitation.
 - d. Context: The personal status of the patient, which can influence her or his perception, preferences, and understanding of the rehabilitation options; also, the personal status of the clinician, that is, personal and professional obligations, moral standing, and socioeconomic circumstances.
3. Ask: "Is the problem ethical?" and interpret the problem in terms of whether it includes a question regarding moral values, norms, principles, *et cetera*. If the problem is of an ethical nature, examine the discrepancy in values that contributes to the problem.
4. Ask: "Is more information or dialogue needed?" Analyze the gathered data and incorporate additional information. Acquire a clear understanding of the patient's attitude toward the situation. It is important that the patient feels listened to and understood. When the patient does not convey his or her thoughts in a straightforward manner, discourse analysis might be helpful. Elaborate on ambiguous issues or new rehabilitation options, as this may resolve some of the problems. Dialog with the patient or surrogate until all of the issues are clarified.
5. Determine the best course of action, and support your position by referring to one or more sources of ethical values:

- a. Principles: Beneficence, nonmaleficence, respect for patient's autonomy, justice.
 - b. Rights: The rights of the patient as an individual and as a patient.
 - c. Consequences: Choose the best possible option in terms of the highest benefits and the lowest costs for the patient, the family, physicians, the hospital, *et cetera*.
 - d. Comparable cases: Find comparable previous cases and analyze them in terms of their resolution and the consequences of their implementation. That is, if a previous case was successful, it may be serve as a useful paradigm to follow in the current case.
 - e. Professional guidelines: Apply ethical codes of conduct.
 - f. Conscientious practice and the integrity of medical professionals: Redirect a patient to another specialist when you are not able to execute the rehabilitation plan, due to your own beliefs and moral values.
6. Confirm the adequacy and coherence of the conclusion: Check whether your conclusions are correct in terms of adequacy and coherence.³⁷

4.1. Learn from Previous Cases

If similar cases exist, review them for treatment options. If not, discuss the patient's case with colleagues, maintaining the confidentiality of the patient. A literature search may be helpful and provide appropriate treatment approaches.

4.2. Choice of Treatment Method

These considerations may be helpful in choosing a treatment approach, technique, and method:

- The patient's diagnosed cognitive and affective deficits,
- The patient's level of awareness of her or his own functioning,
- The patient's attitude toward his or her own illness and situation,
- The patient's pre-morbid personality and psychological coping style,
- The patient's intact cognitive and affective functioning,
- The theoretical background of the diagnostician,
- Available methods of rehabilitation,
- The context, that is, the personal status of the patient, which can influence his or her perception, preferences, and understanding of the rehabilitation options, as well as the personal status of the clinician, that is, his or her personal and professional obligations, moral standing, and socioeconomic circumstances.

There are several rehabilitation methods established for patients with anosognosia. These methods can be categorized using the following theoretical approaches regarding the patient's awareness of his or her own functioning:

1. Awareness as constituted of cognitive and psychological factors,
2. The pyramidal model of awareness,³⁸
3. The comprehensive dynamic interaction model,³⁹
4. Mixtures of approaches.

There are several techniques that can be used across the different approaches. Chittum and colleagues constructed individualized training packages for adult patients with brain damage.⁴⁰ They combined educational discussion with board games to teach patients about the cognitive and behavioral deficits that may follow brain damage.

Rehabilitation using a group format has been proposed by many authors. Ownsworth, McFarland, and Young described support group therapy combined with psycho-education.⁴¹ Lundqvist, Linnors, Orlenius, and Samuelsson developed a group therapy model composed of psycho-education, stress management, joint problem solving, and exercises focused on anticipating consequences.⁴² Goverover described a therapy focused on enhancing awareness and the use of strategies in activities of daily living.⁴³ Fotopoulou used exercises with third-person observation and self-evaluation, based on video recordings of the patient's performance of tasks.⁴⁴ Other rehabilitation techniques that may be incorporated into a treatment plan include: embedding, substitution, distraction, time out, natural facilitation, and the implicit recognition of deficits.⁴⁵

In addition, there are several well-established programs that incorporate different techniques aimed at the holistic improvement of patients. For example Malec, Smigielski, DePompolo, and Thompson designed the comprehensive day treatment program (CDTP).⁴⁶ The program was established within the Mayo Brain Injury Outpatient Program, which constitutes a series of community re-integrative programs.⁴⁷ The CDTP uses a group-oriented, comprehensive, integrated approach to rehabilitate patients with brain damage in post-acute stages.

4.3. Analyze Potential Treatment Options, Including Benefits and Risks

Taking into consideration possible alternatives, a clinician should analyze how each of option may benefit or possibly harm the patient. Creating a list of options, from the most to the least beneficial, may

be useful for a later discussion with the patient and significant others.

4.4. Address Outcome Measurement

The methods used in treatment should allow the reliable and valid measurement of outcomes. Do not use treatment methods that are similar to diagnostic measurements to track rehabilitation outcomes and that avoid checking practice effects.

4.5. Address Questions

Several important questions arise at this point:

- How do the chosen methods allow the patient to achieve the stated goals of treatment?
- Should psychotherapy be implemented?
- What is the probability of success?
- How can this particular patient benefit from the planned treatment?
- How can harm to this particular patient be avoided?
- What are alternative options in case of therapeutic failure?
- Are there plans and rationales in place, in case the treatment should stop?

4.6. Discuss Treatment Options with the Patient, Surrogate, and Significant Others

Therapists should take into account the patient's opinion at all times, including when deciding on a rehabilitation plan. With the patient, surrogate, and significant others (if they are involved in the process), set a final course for rehabilitation. A written plan is advisable, as it can be used to discuss progress with the patient during treatment. This approach corresponds to "Standard 10.01: Informed Consent to Therapy," in the *APA Ethical Principles*.⁴⁸

4.6.1.a. When consent is obtained. If the patient or surrogate agrees on the treatment plan, it can be implemented.

4.6.1.b. Encourage the patient to take an active part in the process of rehabilitation. During treatment, therapists should engage the patient in taking an active part in personalizing therapy and altering it due to the patient's current needs and circumstances, and to new opportunities, while keeping in mind the set goals. The therapist should track the patient's progress and discuss with him or her the outcomes of different methods.

4.6.2.a. When consent is not obtained. The patient or surrogate has the right to make a decision to end treatment at any time. It is better to discuss this before a treatment is initiated; that is why the patient or surrogate should be well informed at all stages of rehabilitation. If the patient or surrogate

does not agree to the treatment plan, treatment cannot be implemented.

On the other hand, a therapist can choose not to conduct rehabilitation for personal reasons. This is in line with "Standard 2.06: Personal Problems and Conflicts," of the *APA Ethical Principles*.⁴⁹ In addition, the therapist should closely monitor the attitudes of the patient or surrogate throughout the process of therapy. Involving the patient or surrogate in making further treatment decisions during therapy can prevent a patient from leaving therapy.

4.6.2.b. Redirect the patient to another therapist.

A clinician should prepare in advance how to support a patient, surrogate, and family should the clinician choose to redirect the patient to another clinician. It is optimal to redirect the patient to a therapist who will be suitable for the particular patient. This is in accordance with "Standard 2.05: Delegation of Work to Others," in the *APA Ethical Principles*.⁵⁰ Further recommendations may be found in section 2.3.b. of this article, above.

SUMMARY

Impairment in self-awareness is a downside for rehabilitation and turns planning for rehabilitation into a very complex process.⁵¹ In these situations, ethical decision making is indispensable. The clinical ethical decision-making model proposed by Kaldjian, Weir, and Duffy, reviewed above, represents a structured way of dealing with ethical problems in clinical settings.⁵² These authors suggest considering and weighing different rehabilitative options, in six consecutive steps.

In terms of diagnosis, anosognosia is usually considered when the patient's own ratings of functional abilities are higher than ratings by family members⁵³ and standardized neuropsychological testing.⁵⁴ A patient's ratings can be determined by several methods, including questionnaires, interviews, and pre- and post-task performance estimations. Structured interviews may be useful for patients with neglect of a half of their visual field, as it minimizes the possibility that their answers will be disturbed by the deficit. Questionnaires that include forms for different raters allow an estimation of a patient's self-awareness of deficits in comparison to his or her pre-morbid functioning (informant's rating), as well as to typical impairments in a patient's population (compared by the diagnostician). Through the use of questionnaires, anosognosia can be differentiated from other disorders, such as anosodiaphoria (indifference to the existence of a handicap) or denial.

Still, asking a patient to estimate her or his own performance prior to and after the execution of a task has its limits. It may exhibit a patient's ability to estimate his or her own abilities in general, rather than a lack of awareness of acquired deficits. Both interviews and questionnaires are verbal, which may limit their use with patients who are aphasic. When a patient has verbal deficits, nonverbal methods are advisable. Observation of a patient's behavior during a particular activity and his or her post-task reactions are then critically important. For example, in "jargon aphasia," a patient does not only verbally deny making language errors, but also does not correct them.⁵⁵ Further, some patients may deny their deficits but never initiate activity with the affected limb, or verbally admit a deficit, but act as if they are not experiencing any deficits.⁵⁶ Recently developed nonverbal measures that assess patients' self-awareness of deficits by using pictures may be helpful in such cases.

Because each of the described methods assesses a different aspect of anosognosia, a multi-modal approach is gaining popularity.⁵⁷ Ideally, the measures chosen for a particular patient should be resistant to the cognitive deficits he or she exhibits. Since no one such measure exists, the use of a set of measurements could minimize the confounding effects of cognitive deficits. Taking into account several sources of information provides an opportunity to address the issue holistically.

A common notion in psychology that is well worth considering in regard to anosognosia is that a mentally healthy person is in contact with reality and has an accurate perception of the self, but this may be applicable only to a point. As Taylor and Brown note, certain illusions are found in healthy persons (for example, viewing the self with an unrealistic optimism, viewing the self as changing for the better in the future, enhanced self-esteem or self-efficacy).⁵⁸ Such illusions may be adaptive for mental health and well-being, and may foster self-care, care for others, being happy, and engaging in productive and creative work. Ellis and Small add to this discussion by pointing out that defensive mechanisms such as denial of illness can occur without brain damage.⁵⁹ Given these observations, a clear picture of a patient's self-awareness of deficits should be established before any decisions about treatment are made. Distinctions should be made between impairments in self-awareness of deficits and pre-morbid personality characteristics. Holding certain illusions about oneself may be a psychological coping strategy in response to one's illness and current situation.

Once a diagnosis is made, a rehabilitation plan may be established that articulates major goals, as well as smaller steps to achieve those goals. Methods should be chosen that consider a patient's impairments, intact functions, predispositions, preferences, *et cetera*. The plan should be made in consultation with the patient and possibly relatives, so they may take an active part in the process. They should be made aware of their responsibilities and their importance in the success of the rehabilitation.

After informed consent is obtained from a patient or surrogate, treatment may be implemented. During the treatment, the patient and family should be kept updated on the patient's progress and attainment of rehabilitation goals so that they are informed at all steps of the therapy. The patient and possibly the family should take an active part in elaborating and individualizing the treatment as it progresses, according to the patient's needs, as well as to changing situations.

In conclusion, several key points should be kept in mind while implementing treatment for patients with anosognosia. First, ethical principles and standards must be met. This can be achieved by paying close attention to principles and standards throughout the process of rehabilitation and by addressing ethical questions at each step. Second, the patient as well as his or her significant others should take an active part in the process of rehabilitation and should be encouraged by the therapist to do so. Third, anosognosia may take different forms and should be diagnosed and treated with caution. As this is the case, a spectrum of methods should be available to the therapist, who should be well-informed about their use. Therapists should keep abreast of scientific news about this and related impairments to provide a high-quality service.

NOTES

1. J.M. Leatham, L.J. Murphy, and R.A. Flett, "Self- and Informant-Ratings on the Patient Competency Rating Scale in Patients with Traumatic Brain Injury," *Journal of Clinical and Experimental Neuropsychology* 20, no. 5 (1998): 694-705.
2. L.J. Bach and A.S. David, "Self-Awareness after Acquired and Traumatic Brain Injury," *Neuropsychological Rehabilitation* 16, no. 4 (2004): 397-414.
3. P. Vuilleumier, "Anosognosia: The Neurology of Beliefs and Uncertainties," *Cortex* 40 (2004): 9-17.
4. J.M. Fleming and T. Ownsworth, "A Review of Awareness Interventions in Brain Injury Rehabilitation," *Neuropsychological Rehabilitation* 16, no. 4 (2006): 474-500.
5. L.R. Cherney, "Ethical Issues Involving the Right Hemisphere Stroke Patient: To Treat or Not to Treat?" *Top-*

- ics in Stroke Rehabilitation* 13, no. 4 (2006): 47-53.
6. G.P. Prigatano and D.L. Schacter, *Awareness of Deficit After Brain Injury. Clinical and Theoretical Issues* (New York: Oxford University Press, 1991).
 7. Vuilleumier, "Anosognosia: The Neurology of Beliefs and Uncertainties," see note 3 above.
 8. A.J. Marcel, R. Tegner, and I. Nimmo-Smith, "Anosognosia for Plegia: Specificity, Extension, Partiality and Disunity of Bodily Unawareness," *Cortex* 40 (2004): 19-40.
 9. D.N. Levine, "Unawareness of Visual and Sensorimotor Defects: A Hypothesis," *Brain and Cognition* 13 (1990): 233-81.
 10. S.J. Ellis and M. Small, "Denial of Illness in Stroke," *Stroke* 24 (1993): 757-9.
 11. B. Crosson et al., "Awareness and Compensation in Postacute Head Injury Rehabilitation," *Journal of Head Trauma Rehabilitation* 4 (1989): 46-54.
 12. J. Toglia and U. Kirk, "Understanding Awareness Deficits following Brain Injury," *NeuroRehabilitation* 15 (2000): 57-70.
 13. K.B. Kortte and S.T. Wegener, "Denial of Illness in Medical Rehabilitation Populations: Theory, Research, and Definition," *Rehabilitation Psychology* 49 (2004): 187-99.
 14. *Ibid.*
 15. G.P. Prigatano and P.S. Klonoff, "A clinician's rating scale for evaluating impaired self-awareness and denial of disability after brain injury," *Clinical Neuropsychologist* 12 (1998): 56-67.
 16. *Ibid.*
 17. American Psychological Association, *Ethical Principles of Psychologists and Code of Conduct*, effective 1 January 1, 2010, amended 1 January 2017, <http://www.apa.org/ethics/code/>.
 18. *Ibid.*
 19. R. Greenson, "The Real Relationship between the Patient and the Psychoanalyst," *The Unconscious Today*, ed. M. Kanzer (New York: International Universities Press, 1971), 213-32.
 20. T. Grisso and P.S. Appelbaum, *Assessing Competence to Consent to Treatment: A Guide for Physicians and Other Health Professionals* (New York: Oxford University Press, 1998).
 21. M. Tunzi, "Can the Patient Decide? Evaluating Patient Capacity in Practice," *American Family Physician* 64 (2001): 299-306.
 22. P.S. Appelbaum, "Assessment of Patients' Competence to Consent to Treatment," *New England Journal of Medicine* 357 (2007): 1834-40.
 23. A.R. Jonsen, M. Siegler, and W.J. Wislade, *Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine* (New York: McGraw-Hill, 2002).
 24. APA, *Ethical Principles*, see note 17 above.
 25. *Ibid.*
 26. *Ibid.*
 27. *Ibid.*
 28. *Ibid.*
 29. M. Jehkonen, M. Laihosalo, and J. Kettunen, "Anosognosia after Stroke: Assessment, Occurrence, Subtypes and Impact on Functional Outcome Reviewed," *Acta Neurologica Scandinavica* 114 (2006): 293-306.
 30. I.S. Markova and G.E. Berrios, "Approaches to the assessment of awareness: Conceptual issues," *Neuropsychological Rehabilitation* 16 (2006): 439-55.
 31. S.E. Starkstein, R.E. Jorge, and R.G. Robinson, "The Frequency, Clinical Correlates, and Mechanism of Anosognosia After Stroke," *Canadian Journal of Psychiatry* 55 (2010): 355-61.
 32. M.T. Wagner, K.B. Spangenberg, D.L. Bachman, and P. O'Connell, "Unawareness of Cognitive Deficit in Alzheimer Disease and Related Dementias," *Alzheimer's Disease and Associated Disorders* 11 (1997): 125-31.
 33. T. Hart, T. Giovannetti, M.W. Montgomery, and M.F. Schwartz, "Awareness of Errors in Naturalistic Action following Traumatic Brain Injury," *Journal of Head Trauma and Rehabilitation* 13 (1998): 16-28.
 34. S. Della Sala, G. Cocchini, N. Beschin, and A. Cameron, "VATA-m: Visual-Analogue Test Assessing Anosognosia for Motor Impairment," *Clinical Neuropsychologist* 23 (2009): 406-27.
 35. F. O'Keefe, P. Dockree, P. Moloney, S. Carton, and I.H. Robertson, "Awareness of Deficits in Traumatic Brain Injury: A Multidimensional Approach to Assessing Metacognitive Knowledge and Online-Awareness," *Journal of the International Neuropsychological Society* 13 (2007): 38-49.
 36. APA, *Ethical Principles*, see note 17 above.
 37. L.C. Kaldjian, R.F. Weir, and T.P. Duffy, "A Clinician's Approach to Clinical Ethical Reasoning," *Journal of General Internal Medicine* 20, no. 3 (2005): 306-11.
 38. Crosson et al., "Awareness and compensation in postacute head injury rehabilitation," see note 11 above.
 39. Toglia and Kirk, "Understanding awareness deficits following brain injury," see note 12 above.
 40. W.R. Chittum et al., "Road to Awareness: An Individualised Training Package for Increasing Knowledge and Comprehension of Personal Deficits in Persons with Acquired Brain Injury," *Brain Injury* 10, no. 10 (1996): 763-76.
 41. T.L. Ownsworth, K. McFarland, and R. McD. Young, "Self-Awareness and Psychosocial Functioning following Acquired Brain Injury: An Evaluation of a Group Support Programme," *Neuropsychological Rehabilitation* 10, no. 5 (2000): 465-84.
 42. A. Lundqvist, H. Linnors, H. Orlenius, and K. Samuelsson, "Improved Self-Awareness and Coping Strategies for Patients with Acquired Brain Injury—A Group Therapy Programme," *Brain Injury* 24, no. 6 (2010): 823-32.
 43. Y. Goverover, M.V. Johnston, J. Toglia, and J. Deluca, "Treatment to Improve Self-Awareness in Persons with Acquired Brain Injury," *Brain Injury* 21, no. 9 (2007): 913-23.
 44. A. Fotopoulou, A. Rudd, P. Holmes, and M. Kopelman, "Self-Observation Reinstates Motor Awareness in Anosognosia for Hemiplegia," *Neuropsychologia* 47, no. 5 (2009): 1256-60.
 45. G. Fluharty and C. Wallat, "Modifying the Environment to Optimize Outcome for People with Behavior Disorders Associated with Anosognosia," *NeuroRehabili-*

tation 9, no.3 (1997): 221-4.

46. J.F. Malec, J.S. Smigielski, R.W. DePompolo, and J.M. Thompson, "Outcome Evaluation and Prediction in a Comprehensive-Integrated Post-acute Outpatient Brain Injury Rehabilitation Programme," *Brain Injury* 7, no. 1 (1993): 15-29.

47. Ibid.

48. APA, *Ethical Principles*, see note 17 above.

49. Ibid.

50. Ibid.

51. M.D. Lezak, "Relationships Between Personality Disorders, Social Disturbances, and Physical Disabilities following Traumatic Brain Injury," *Journal of Head Trauma Rehabilitation* 2 (1987): 57-69.

52. Kaldjian, Weir, and Duffy, "A Clinician's Approach to Clinical Ethical Reasoning," see note 37 above.

53. G. Goldstein and M. McCue, "Differences Between Patient and Informant Functional Outcome Ratings in Head-Injured Individuals," *International Journal of Rehabilitation and Health* 1, no. 1 (1995): 25-35.

54. G.P. Prigatano, I.M. Altman, and K.P. O'Brien, "Behavioral Limitations that Brain Injured Patients Tend to Underestimate," *Clinical Neuropsychologist* 4 (1990): 163-76.

55. A.B. Rubens and M.F. Garrett. "Anosognosia of Linguistic Deficits in Patients with Neurological Deficits," *Awareness of Deficit After Brain Injury: Clinical and Theoretical Issues*, ed. G.P. Prigatano and D.L. Schacter (New York: Oxford University Press, 1991), 40-52.

56. E. Bisiach and G. Geminiani. "Anosognosia Related to Hemiplegia and Hemianopia," *Awareness of Deficit After Brain Injury: Clinical and Theoretical Issues*, see note 55 above, pp. 17-39.

57. P.W. Halligan, "Awareness and Knowing: Implications for Rehabilitation," *Neuropsychological Rehabilitation* 16, no. 4 (2006): 456-73.

58. S.E. Taylor and J.D. Brown, "Illusion and Well-Being: A Social Psychological Perspective on Mental Health," *Psychological Bulletin* 103, no. 2 (1988): 193-210.

59. Ellis and Small, "Denial of illness in stroke," see note 10 above.