

Chapter 1

General Introduction

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Executive summary

This chapter introduces the thesis on Outcome Measurement in The Netherlands. Its approach rests firmly on the now-established demands that healthcare delivery be cost-effective and provides evidenced-based treatments. For psychiatry, both biological and psychosocial interventions must be identified and measured. The aim of this study is to provide a set of feasible, meaningful, and useful mental health outcome measures that can be incorporated into routine clinical practice and that improve the quality of the clinical care that patients receive.

In The Netherlands the approach to outcome measurement is called Routine Outcome Monitoring (ROM). The theoretical underpinnings of ROM derive from extensive research on this subject that draws substantially on the work of Donabedian (1988) and his three dimensions of quality: structure, process, and outcome.

In this thesis, specifications that outcome measurement instruments must meet are provided, as well as how to implement these instruments in routine clinical practice and how to effectively manage the data they generate. Particular attention is paid to the feedback of treatment results, both to the clinician and patient, and how this must be an essential part of the clinical work.

An important impetus for this thesis was research by the Lambert group in the USA (Lambert et al., 2001). Their work inspired the HORVAN (HoNOS, OQ, ROM Validity [in The] Netherlands) Study, which was executed in a non-academic mental healthcare environment. The HORVAN Study is described in two parts: Part I details the comparison of different measurement instruments and the assessment of change during the treatment process in a general outpatient clinic; Part II details how to embed ROM in routine clinical practice in an outpatients' clinic for mood and anxiety disorders, as well as how to use the results as meaningful feedback to clinicians and patients. Finally, the investigation of the attitude of clinicians and patients towards ROM is reported.

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1.1. History and development of Outcome Management

Efforts to monitor the quality of care in Western healthcare practices date from the time of Hippocrates (Kos, Greece, 450-370 B.C.). Hippocrates formulated the oath for physicians, introduced the term **“hygiene,”** promoted a **healthy lifestyle** for doctor and patient, and assumed illness stemmed from natural causes – as opposed to supernatural ones. Medical practice was deemed a divine calling.

The provision of medical care was done with a keen observation of symptoms and an honest and respectful approach to the patient (Nabitz, 2006). The Hippocratic Oath defines the relationship between physician and patient or teacher and pupil, as well as a number of specific medical procedures and rules regarding the privacy and rights of the patient. Over the centuries, the Oath and the principles behind it were upheld by Paracelsus (1494-1541) and Andreas Vesalius (1514-1564). In the nineteenth and twentieth centuries, there was a major effort to endeavor to improve the quality of healthcare, most notably by the nurse Florence Nightingale (1820-1920), the dentist Horace Wells (1815-1848), the physician Robert Koch (1843-1910), the surgeon Ernest Codman (1869-1940), and the researcher Marie Curie (1867-1934) (Nabitz, 2006).

Of these, Ernest Codman was the most progressive and is considered the founder of what Ellwood (1988) later named **“Outcome Management.”** Codman monitored patients for a year in order to assess long-term results, which he used to improve the techniques and the safety of medical treatments. Ellwood defined **“Outcome Management”** as a system that generates facts about patient characteristics, clinical outcomes, and costs of care, amongst other things, in order to guide decision-making for the quality delivery of healthcare (Ellwood, 1988).

Avedis Donabedian (1919-2000) is today considered the father of the scientific, systematic approach to maintaining and improving quality in healthcare. According to Donabedian (1988), quality of care is considered good when it is state of the art and strives to obtain the best results. In order to identify and measure **“quality,”** he stressed three aspects of healthcare: structure, process, and outcomes; these must be assessed individually as well as together (Donabedian, 1966, 1988).

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Structure represents the human, physical, and organizational components of the healthcare system. *Process* represents the interactions between patients and the healthcare system. *Outcomes* are the results of these interactions on patients, good and bad (Hermann, 2005). Two other critical dimensions applicable to quality are *efficacy* (did the treatment do what it is supposed to do?) and *efficiency* (were resources used optimally?).

The relationship between process and outcomes is considered an important basis for evaluating quality in contemporary healthcare (Nabitz, 2006): in effect, did what was provided produce the desired results? The process of care, the actual care itself, can be assessed in two domains: 1) interpersonal aspects of care, including the quality of communication and the quality of the relationship between the clinician and the patient, and 2) the technical aspects of care, which consist of the application of medical science and technology to the management of illness (e.g., the accuracy of the diagnosis and the appropriateness of the treatment). The outcomes of care are the desired results of care, in terms of a patient's clinical functional status and quality of life (Dickey, 2002; Hermann, 2005; see Table 1).

Table 1. Framework for assessing quality of care (Hermann RC, 2005).

Structure	Clinician characteristics Facility / plan characteristics Financing characteristics
Process	Interpersonal processes: Communication, decision making, and interpersonal style Technical processes: Prevention, detection, access, assessment, treatment/fidelity, coordination, continuity, and safety
Outcome	Symptoms Functioning Quality of life Adverse events, including medical errors Patient satisfaction Cost-effectiveness

The emerging paradigm in medical care emphasizes that outcomes take priority over processes and structure. Yet processes cannot be ignored because they must be understood in order to determine what produced the desired effects.

In mental healthcare, there has been a need for feasible, meaningful, and useful scientifically derived measures of clinical performance. When done well, performance measurement serves three needed purposes: accountability, quality improvement, and performance management (Baars, 2009).

Donabedian focused less on accountability and performance management, but he did not neglect them. Baars (Baars, 2009, p. 42-43) (see the addendum to this chapter) provides greater detail of the domains of performance measurement while still following Donabedian's domains of structure, process, and outcome. Donabedian's **work does allow assessment of** quality of care from the varied perspectives of the patient, the clinician, the buyer (insurer or government), the family, and key stakeholders (Dickey, 2001, p. 79). According to Klazinga (1996, p. 10), Donabedian demonstrates how measuring the quality and outcomes of care can be used to assess any need for improvement.

Measuring performance also relies critically on the use of standards of care, which offer the best knowledge of what interventions work best for which disorders, and at times for which patients at what point in the course of illness. Standards of care are explicitly endorsed by the American Psychiatric Association (2002).

In The Netherlands, care-givers and care-users met at the Leidschendam conferences organized by the Dutch government in 1989, 1990, 1995, and 2000 to define quality of care. They concluded that quality of care is the extent to which the process and outcomes of care, as well as the organization (structure) of care, meets pre-determined and accepted standards. These standards must be translated into measureable indicators of care.

For example, an element in the provision of care, such as childhood immunization or depression screening, can be expressed with a numerator and a denominator. The numerator is the number of people who received the appropriate service and the denominator is the number of people who were served. At times, internal and external indicators are employed by a health-delivery organization in order to monitor and improve its quality and for external justification to those who regulate or pay for services (Baars, 2009). Ideally, performance measurement should have as few indicators as necessary to interpret the results adequately and draw valuable and reliable conclusions in order to reduce burden and cost.

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The main subject of this thesis is outcome measurement using a specifically developed system (ROM) that also can provide insight into quality and provide the basis for quality improvement as part of performance measurement.

An overview of quality of care calls for a discussion of outcome measurement instruments. Sperry (1997) described in his overview of treatment outcome the development of outcome measurement. He illustrates clearly and comprehensibly the state of mental healthcare at the end of the twentieth century and its future direction. He describes a paradigm shift towards what he called **an “outcome revolution,” in which responsibility for ensuring effective outcomes grows with the increase in medical treatment capabilities.** In this **“revolution,”** treatment goals evolve toward improving **the patient’s health in** order to allow for participation in society and to limit disability, while containing medical intervention to the minimum necessary. Finally, outcome measurement requires that the course of treatment be monitored regularly in order for clinicians to assess the process of the treatment and make changes in the treatment in accordance with a **patient’s status and desired** outcomes.

Sperry also differentiates among **“Outcome Measurement,” “Outcome Monitoring,” and “Outcome Management”** (Table 2):

Outcome Measurement is the “quantification or measurement of clinical and functional outcomes during a specific period.” Traditionally, assessment was done pre- and post-intervention, but serial or concurrent assessment (see below) is becoming more common, and necessary to achieve better results and efficiencies. His description of outcome instruments notes that these can measure a variety of changes, including patient symptoms, well-being, functioning, and satisfaction.

Outcome Monitoring is the “serial or concurrent use of outcome measures” during the course of treatment. Outcome Monitoring compares expected results to periodic progress, or lack of it, during the course of treatment. Outcome monitoring can take place at specified times during a course of treatment. The regular review of outcome data can be used to alter treatment when it is not working or off course. Moreover, monitoring can follow progress of a single case or summed to compare groups of patients or programs, as well as be adjusted for risk factors (Sperry, 1997).

Sperry's *Outcome Management* is the optimal use of monitored data that allows care professionals, managers, and healthcare systems to learn from experience. Outcome Management can allow for the improvement of clinical processes of care and organizational structures instrumental to the care offered by a healthcare institution. Sperry also points out that changes **in clinicians' attitudes**

are often needed to overcome their reservations and objections to measurement, as well as enable them to raise care to an optimal level.

Table 2. Overview of measurement possibilities on different levels.

Outcome	Level	Explanation
Measurement	Micro	Measurement per moment
Monitoring	Micro and meso	Measurement and review to follow progress in a single case or to compare groups of patients and programs
Management	Meso and macro	Aggregation and review of individuals and healthcare systems for quality improvement

In addition to increasing the quality of care, clinicians and organizations can develop greater transparency and performance improvement, leading to more effective and efficient use of resources and services.

Outcome Measurement has also been used to achieve standardized assessments of the severity of the patient's **mental** disorder before, during, and after treatment (Sederer et al., 1997; Sperry, 1997; Brown et al., 2001; Hermann, 2005; Trauer, 2010). Standardized measures enable, as well, more reliable determinations of quality and opportunities to use comparable data and results to improve the quality of various treatments and of the care system itself (Brown et al., 2001).

Globally, many systems for outcome measurement and management have been developed: in the United States by Lambert et al. (2001) and Miller et al. (2005); in Australia by Callaly et al. (2001); in the United Kingdom by Barkham et al. (2001); and in Germany by Kordy et al. (2001). Paragraph 1.3 describes current circumstances in The Netherlands.

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1.2. The process of Outcome Measurement

In practicing outcome measurement, there is a set of important steps:

1. the use of valid outcome measures (1.2.1),
2. the implementation of regular measurement during treatment (1.2.2),
3. the management of the data (1.2.3), and
4. the effects of feedback on the patient and the clinician (1.2.4).

Focused and persistent efforts are required to establish, implement, and maintain a reliable system, one that is feasible within a healthcare system and that makes monitoring treatment valuable to clinicians, patients, and administrators.

1.2.1 The use of valid outcome measures

In order to measure the progress of treatment, self-rating or observation questionnaires are required. These measurement instruments must meet established scientific criteria and be able to assess the **patient's status** and treatment at various moments in the process of care.

Outcome measures ideally meet the following quality criteria (Buwalda et al., 2011a; Dickey, 2002; Hermann, 2005; Lambert et al., 2001; Thornicroft et al., 2005). They must:

- (1) be brief and easy to use (for patients and clinicians);
- (2) possess the psychometric qualities of validity and reliability;
- (3) be sensitive to change (short and long term, as desired);
- (4) possess at least three assessment domains, such as a change in symptoms, interpersonal problems, and social role performance;
- (5) be clinically relevant;
- (6) be sensitive to cultural differences;
- (7) cause minimal inconvenience to the patient during measurement;
- (8) disrupt the work of the medical staff as little as possible;
- (9) involve minimal costs to the mental healthcare organizations when collecting and analyzing data; and
- (10) support clinical care, improve clinical perspectives on patient care and outcomes, and offer insight into how to improve clinical care.

1.2.2 Implementing Outcome Measurement

A mental healthcare organization (or a group of clinical professionals) that wants to employ outcome measurement and use results to improve treatment, must

ensure that a chosen system of outcome measurement fits seamlessly into the **clinicians' normal practice** and into the organization's clinical care processes.

1.2.2.1. Implementation at an individual level

One of the most important implementation theories is Rogers' Diffusion of Innovations theory (Rogers, 1995, 2003). When implementing a new practice, Rogers identifies three groups: innovators and early adopters (16%); adopters (68%, early and late); and the laggards (16%). See Figure 1 (Rogers, 1995).

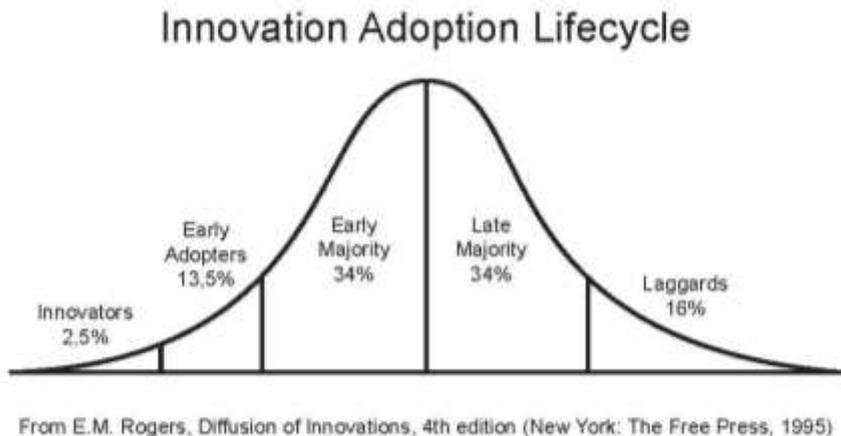


Figure 1.

There is a natural resistance to change in all groups of people and organizations. To succeed despite inescapable resistance it is essential to convince and attract those who will benefit from the new practices. In this case, it is clinicians who need to be shown the advantages and limitations of an intervention, and evidence of its capacity to improve quality on an individual and group level.

1.2.2.2. Implementation at meso and macro level

In an organization, implementation is necessary for its total membership. The new working method should **fit in the clinicians' normal working practices**, as a group. The group with the greatest involvement in outcome measurement must understand it completely, be convinced of its added value, and be aware of the possible problems. Ownership of the method will result in greater likelihood for adoption of practice changes (Crockers & Rissel, 1998).

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1.2.3. The management of the data

1.2.3.1. Collection of data

The completion of measures during treatment can be done by the patient, the clinician, or an independent third party. The clinician typically must be trained to perform reliable assessments. Patients can complete well-constructed, brief, and meaningful validated self-rating scales. An independent third party, such as a test psychologist or a trained research nurse, can complete assessment instruments – or assist patients in filling out self-rating forms. In this approach, the test-professionals have no formal relationship with the clinician or the patient, and thus may be seen as more objective.

1.2.3.2. Use of data

After an outcome measure is completed during the course of treatment, the data can be collected and processed into reports that can be used for feedback to the clinician, the patient, and to supervisory staff and administrators. Data from various patients can also be combined to allow comparisons at various levels, such as within a group of professionals, within an institution, or interinstitutionally as a level as benchmarking.

1.2.3.3. Use of individual data during treatment

Treatment outcomes can provide insight into how a treatment is going, and thus can lead to more efficient, effective, and economical results (Buwalda et al., 2004). Better **insight into the patient's actual state of health**, and changes in it, can improve communication between clinician and patient, thereby potentially leading to a better relationship between the two (Black et al., 2009); in fact, it can foster shared decision-making in terms of treatment (Deegan et al., 2006). When the outcome of treatment is made visible to the patient and clinician with a graphic representation, and accompanied by a short written report, this can have a very powerful effect on the treatment and therapeutic relationship. Clear, meaningful reports can lead to careful reflection on the treatment process and can contribute to changes in the **patient's and clinician's behavior** (De Jong et al. 2012; Kluger & DeNisi, 1996; Lambert et al., 2001; Sapyta et al., 2005).

1.2.3.4. Use of group data during or after treatment

Outcome results can also be employed in an aggregated manner. Groups of professionals and different departments can be compared (Hermann, 2005). The data has to be carefully considered, often with appreciation of possible causes for differences as well as case-mix corrections. Comparing performance of individuals, groups or institutions – benchmarking – can be readily done and allow stakeholders inside and outside the mental health services to consider best practices and high functioning organizations – information that is of clear importance to manager, insurers, the inspectorate, and relevant government departments.

1.2.4. The effects of feedback on the patient and the clinician

Since the time of Hippocrates, feedback has been used as a natural component of good medical treatment. During the process of care, the clinician can ask about the effects of the treatment on the patient, their well-being, and functioning. This information, when valid and reliable, can give clinicians a means of reviewing, in a natural way, the progress of the treatment.

In this thesis, an adaptation of the definition of feedback formulated by Knaup et al. (2009) is used. Knaup defined feedback as the provision of individual information concerning treatment outcomes based on *standardized* measures available to clinicians and patients. The feedback described in this thesis is standardized, with a *protocol* for feedback in which the clinician gives, and reviews, the patient's progress graph with the results of treatment in a printed or digital manner.

The goal is to make giving feedback, and reflecting on it, a natural and expected part of the treatment. This kind of feedback is premised on a belief that physicians, all professional clinicians, seek to optimize the healing of the patient. Psychotherapy, an essential form of psychiatric treatment, uses feedback as a part of the therapy. Feedback is seen as a non-specific factor in the therapeutic relationship and is one of the most examined aspects of research on psychotherapy. The study of the literature about feedback in psychotherapy has considerable value in understanding the main subject of this thesis, the HORVAN (HoNOS, OQ, ROM Validity [in The] Netherlands) Study design and results.

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1.2.4.1. *Factors that influence the use of feedback in psychotherapy*

A number of factors are important when providing feedback. Sapyta et al. (2005) divide these into intrinsic and extrinsic factors, which are closely related.

Intrinsic factors are concerned with the degree to which the clinician is motivated to use the feedback information in the treatment. This motivation is co-dependent upon the desire of the clinician to reach specific goals, **called “goal commitment,” and the degree to which this can be attained** in the most plausible way, termed “feasibility.” Another intrinsic factor that influences the effects of feedback is **called “feedback propensity”** (Herold et al., 1996). Clinicians who have a preference for externally mediated feedback – external feedback propensity – have greater faith in information and are more willing to use feedback than clinicians with internally generated feedback – internal feedback propensity. De Jong et al. (2012) found that internal feedback propensity can significantly modify the effect of feedback concerning treatment.

Extrinsic factors that influence the provision of feedback are:

- (1) The content of the feedback: this refers to how a clinician receives information on the progress of treatment and the degree to which the health status of the patient or his treatment deviates from the goal(s). Based on this information, clinicians can adapt and improve treatment (Ilgen et al., 1979). Feedback can also be combined with additional information (like a warning signal, recommendations for different clinical interventions, and a clinical support tool) that offers concrete suggestions for adapting treatment, as Lambert et al. (2002) have recommended;
- (2) The credibility of the source of the feedback. Information obtained from the patient or supervisor may, for example, be valued and respected by the clinician (Ilgen et al., 1979);
- (3) The character of the (alarm) signal in the feedback to the clinician. Lambert et al. (2003) distinguish between feedback with a positive connotation and that with a negative one; and
- (4) The timing of the feedback, whether immediate or delayed. Regular, timely provision of feedback regarding the **patient’s** treatment course can be more useful than delayed feedback, as can making progress more comprehensible by presenting feedback clearly in graphic, written, or verbal form.

Feedback must be supplied as simply as possible and in a timely fashion so it is easy to understand and can be quickly interpreted and adopted by the clinician – and patient. Feedback on the outcome of treatment over time in the form of a graph conforms to this requirement. If feedback is not precise, valid, informative, or relevant to their practice, then clinicians will tend not to use the information provided (Saptya et al., 2005).

1.2.4.2. The effectiveness of feedback after implementation of outcome measurement

If implementation of a new outcome measurement system has successfully taken place and the outcome system has become part of daily practice it is important to evaluate whether the measurement and feedback systems have contributed to real improvements in quality, efficiency, transparency, and outcomes of treatment.

As stated previously, a number of systems of outcome measurement in psychotherapy were developed at the beginning of this century. One of these systems, that of Lambert et al., is described in greater detail because these researchers measured the provision of feedback, and how it was done, on treatment outcomes.

Howard et al. (1996) proposed a new paradigm for evaluation: the *client-focused method*. Here the individual treatment is monitored as an ongoing process and progress is assessed over time. This information is provided as feedback to the clinician **with the client's goals in mind**.

Emulating Howard et al., Lambert et al. developed an algorithm as the basis of a prediction model in which clinicians are given feedback after each treatment session (Finch et al., 2001; Lambert et al., 2001). This research group was able to identify patients who discontinued treatment prematurely (before any effect of treatment was evident) as well as patients who were at risk of having negative outcomes at the conclusion of their treatment.

The study by Lambert et al. took place in a psychotherapeutic environment with patients who, for the most part, experienced **"personal concerns,"** rather than severe mental illnesses. The study focused on the effect of feedback on the group of patients who deviated from the expected outcome, the Not On Track group (NOT group), rather than the group as a whole (Lambert et al., 2001; Lambert et al., 2002; Harmon et al., 2007; Slade et al., 2008; Shimokawa et al., 2010).

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The effects of feedback for the NOT group were more significant than the group as a whole. Their work sharpened the provision of feedback by adding a number of additional elements (described in Chapter 7), thereby enhancing the effects of feedback on the NOT group.

It must be pointed out, however, that the NOT group was a selected group in a high-quality research environment staffed by well-trained researchers who worked in a psychotherapeutic setting with a particular, intensive methodology. Additionally, these patients suffered from mild psychiatric concerns. An important question for the HORVAN Study is what effect does the provision of feedback have on a more general psychiatric setting for anxiety and mood disorders?

According to Hermann (2002), it is possible to attain positive outcomes in a general psychiatric setting. The clear presentation of feedback to clinicians, **accurately representing the patient's condition, can teach clinicians to adapt** and make changes during treatment; they can develop what he called "**visual self-reflection.**" **When measurements are made regularly during treatment, using valid** and reliable measures, and data is provided immediately to the trained clinician, it is possible to improve the quality of treatment in terms of effectiveness and outcome (Hermann, 2002).

In their meta-analysis Knaupp et al. (2009), on the contrary, demonstrated that the provision of feedback had little effect in a general psychiatric setting. This conclusion gives rise to several issues. For example, Knaupp et al. (2009) did not mention that the quality of the implementation required to gain insight into the validity and utility of the outcome results. In their meta-analysis, it is also unclear whether the feedback given met the basic conditions formulated by Hermann (2002).

1.3. The Status of Outcome Measurement in The Netherlands

1.3.1. *The development of ROM and the current state of affairs*

In The Netherlands, we are in the process of implementing Routine Outcome Monitoring (ROM). This concept was introduced by De Beurs & Zitman (2007; De Beurs et al., 2011; Nugter & Buwalda, 2012) and is now accepted and being used in many parts of the mental healthcare system in The Netherlands (Buwalda et al., 2004, 2006; Buwalda et al. 2011a; De Beurs et al., 2011; De Jong et al., 2010; Oudejans, 2009). The term Routine Outcome Monitoring (ROM) is based on the aforementioned construct and definitions by Sperry (1997).

It is the national policy of the Dutch government to implement ROM in mental healthcare. This policy has been endorsed by those who are critical to the field. At present, ROM has been implemented in many mental healthcare organizations, although its value has yet to be sufficiently examined (Sytema et al., 2011). In analogy of Lambert, De Jong (2012) studied the use of feedback in a psychotherapeutic setting and the characteristics of clinicians in relationship to the way the clinicians applied feedback in their treatment. Van Noorden (2012) studied the correlations of disease characteristics in a large cohort of treatment-seeking patients with mood, anxiety, and somatoform disorders. The studies of De Jong and Van Noorden are the first research projects into the feasibility and utility of ROM. The carefully formulated results of both studies are in favor of ROM; their conclusion is that additional research still has to be done.

1.4. The HORVAN Study and the purpose of this thesis

The introduction of ROM in The Netherlands has seen a number of problems, many of which remain unsolved. Research is necessary to determine which factors in the Dutch context are contributing to the problems and to the success of ROM, because measuring outcome is now an essential part of delivering quality medical care throughout the world. A detailed study of outcome measurement in The Netherlands is therefore essential. Four main issues are considered in this thesis in order to assess ROM, and are put into four main questions:

- a. At the commencement of this study were all of the necessary outcome measures for ROM sufficiently examined for validity and reliability? (see 1.2.1);
- b. During the implementation of outcome measures in routine clinical practice, was sufficient attention given to the management of the data at various levels of participants and organizational culture? (see 1.2.2 and 1.2.3);
- c. To what extent was feedback clearly and effectively carried out in the various psychiatric settings and patient target groups? (see 1.2.4); and
- d. What was known about the attitudes of the clinicians, patients and administrators concerning ROM and was change management provided?

In recent years, several frequently used quality measures were validated for The Netherlands. These included the Outcome Questionnaire (OQ-45; De Beurs et al., 2005; De Jong et al., 2007) and the Health of the Nation Outcome Scales (HoNOS).

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The latter was examined with respect to care for adults (Mulder et al., 2004) and the elderly (Broersma & Sytema et al., 2008; Aarssen et al., 2010). Before further implementing ROM, more research evidence is needed in The Netherlands regarding the capacity of these measures to assess change.

Furthermore, we recognize that the implementation of ROM can take place at various organizational levels: (1) implementation at an individual (micro) level; (2) implementation at a management (meso) level, such as a department, division, institution, etc.; and (3) implementation among institutions or a system of care on behalf of government, insurers, and other regulatory and financing organizations (macro level).

In this thesis, the HORVAN Study (**HoNOS, OQ ROM Validity study in The Netherlands**) is subdivided into Parts I and II. The study already had been carried out at the first level, the micro level. Part I of this study is the comparison of the Outcome Questionnaire (OQ; Lambert et al., 2001) and the Health of the Nation Outcome Scales (HoNOS; Wing et al., 1996) as routine outcome monitoring (ROM) measures compared with the Symptom Checklist-90 (SCL-90; Derogatis, 1977), a gold standard in self-rating scales. This study was performed in a general non-academic psychiatric outpatients clinic in the western part of The Netherlands (Buwalda et al., 2011b). The aim of the study was to identify which combination of ROM instruments are able to produce useful general treatment outcomes and could be feasibly used in routine clinical practice. The results of the HORVAN Study Part I made it worthwhile to use the HoNOS and OQ as a complementary ROM combination in standard clinical care to patients. Both instruments formed the basis of the outcome measures in HORVAN study Part II.

Following on what was previously described in Chapters 2, 3 and 4 about Part I of the HORVAN Study, Chapters 5 and 6 describe the complexity of the problems and challenges in realizing the HORVAN Study, Part II, in the daily clinical practice of a non-academic outpatient clinic for mood and anxiety disorders. Chapter 5 describes arguments for modifying the original RCT design into a more realistic and naturalistic approach to study the research questions of the HORVAN Study. In Chapter 6, the many unexpected and unforeseen yet mandatory changes that a mental healthcare institution will frequently have to master are discussed. These challenges are an everyday reality in mental healthcare and have impeded research on the implementation of the ROM in a non-academic environment. It was the complexity and difficulty of introducing ROM into daily clinical practice that led the researcher to publish these problems and challenges in this thesis.

HORVAN Study, Part II, examined the effects of regular ROM measurement at fixed time-points in a non-academic setting, in a mood and anxiety outpatient clinic in the center of The Netherlands. The subject of the HORVAN Study, Part II, is the implementation of ROM as part of standard clinical care and the effects of feedback to patients and clinicians on treatment outcome in circumstances where the monitoring of treatment and feedback to patients is guaranteed, reported, and embedded. In addition, **the impact of patients' and clinicians' attitudes** on the implementation of ROM and treatment outcome was also studied.

1.4.2. Research

A mental healthcare clinic for anxiety and mood disorders where ROM is used in routine clinical practice was the inspiration for this research. In this care setting, the following questions are explored.

1. Which outcome measures have been developed and tested psychometrically, including their capacity to measure change, for use in The Netherlands that could be adopted for Routine Outcome Monitoring (Chapter 2, 3, and 4)?
2. How can Routine Outcome Monitoring effectively be implemented and embedded within the structure and processes of general psychiatric practice in The Netherlands (Chapter 6)?
3. What is the effect of Routine Outcome Monitoring (in the general psychiatric setting described in Chapter 6) on outcomes of treatment, if feedback is assured by a standardized protocol, using paper and pencil recordings (Chapter 7)?
4. What is the attitude of patients and clinicians, respectively, to Routine Outcome Monitoring (Chapter 8)?

Chapter 2 of this thesis is based on a literature study that provided the building blocks for the empirical HORVAN Study of Chapter 3. In the HORVAN Study, Part I, carried out in a general psychiatric outpatient clinic, two outcome measures are compared with a third, which is considered to be the gold standard. The use of the HoNOS clinician-based instrument for ROM is discussed in Chapter 4.

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Chapter 5 describes the necessary changes in the research design of the HORVAN Study, Part II, carried out in a psychiatric outpatient clinic for anxiety and mood disorders. These changes had to be made because the initial implementation process proved to be too problematic. The transformation of the original RCT design into a more naturalistic and realistic field study is explained.

Chapter 6 discusses the challenges in implementing Routine Outcome Monitoring in a mental healthcare institute and the potential consequences that implementation brings. Challenges are discussed and possible solutions offered. The implementation of ROM was carried out during the HORVAN Study, Part II.

The results of the HORVAN Study, Part II, are discussed in Chapters 7 and 8.

Chapter 7 presents the effects of giving feedback to clinicians and patients on treatment results in a non-academic environment. Outcomes are examined and compared with literature on this subject. The impact of feedback and the requirements for adequate feedback are discussed.

Chapter 8 describes the attitude of patients and clinicians towards the use of routine outcome measurement during treatment.

Chapter 9 discusses the process used to validate the ROM instruments, to implement them in routine clinical practice, and how feedback was used in the clinical-care process. Also, recommendations on these matters are made and ideas for future research directions are offered.

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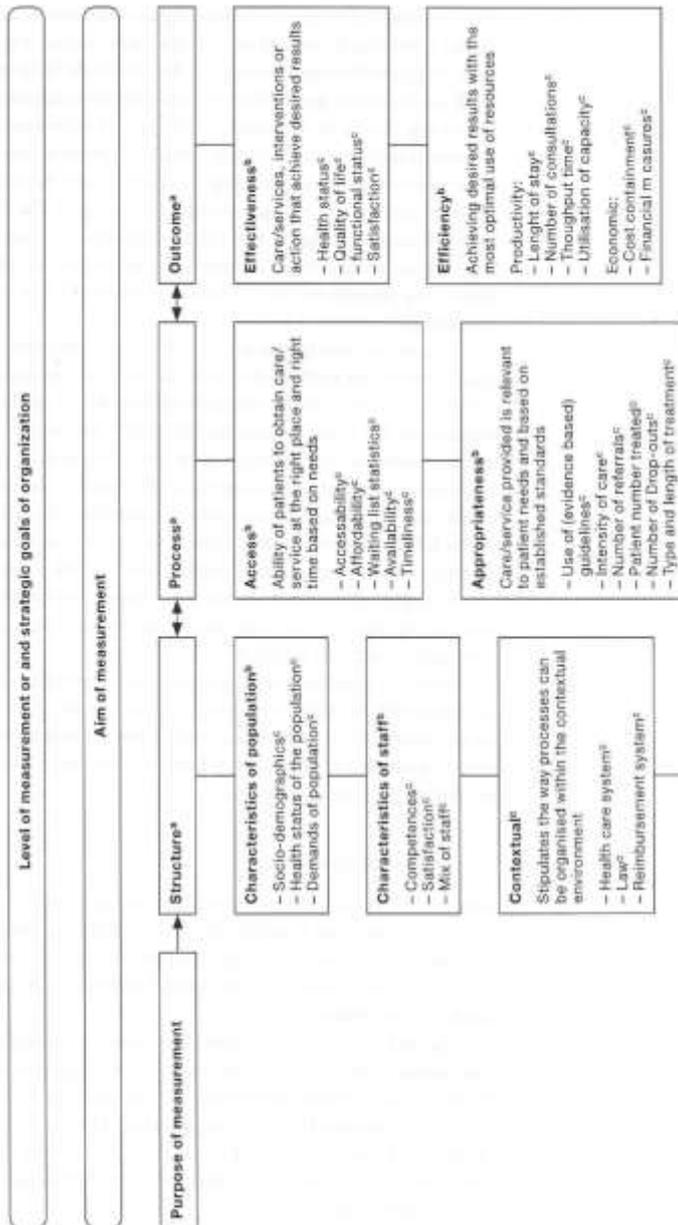
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Appendix I Conceptual framework for the classification of performance indicators; domains and examples of indicators (Thesis Baars, 2009, p. 42 - 43).





Organizational structure⁶
 The set of arrangements by which the resources of an organisation, human and others, are connected through relationships.⁶⁷

- Work design⁶
- Size⁶
- Authority⁶
- Specialization⁶
- Use of information technology⁶
- Flexibility⁶

Continuity/coordination⁶
 Ability to provide uninterrupted, coordinated care/services across programs, practitioners, organisations and level of care/services over time

- Number of professionals/ organizations involved in the care⁶
- Proportion of patients with follow-up visits⁶
- Presence of case management⁶
- Communication between providers⁶
- Numbers of co-visits⁶
- Use of monitoring systems⁶

Prevention⁶
 Early intervention and prevention to avoid unnecessary reliance on services [Carpiniello et al., 1998]⁶⁸

- Screening attempts⁶
- Prevention methods which are used⁶

Safety⁶
 Potential risk of the intervention or the environment

- Numbers of medication errors/side effects⁶
- Numbers on suicide⁶

- a: Classification of structure, process and outcome component in order to measure the overall performances of mental health care services
- b: Domains used for grouping the indicators
- c: Performance indicators

