Summary
Introduction

Avedis Donabedian (1919-2000) is 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).

The assessment of the quality of care is focused on measuring the outcomes of care, monitoring of treatment in the care process and adjusting the treatment according to the results of the monitoring (Sperry, 1997). Sperry distinguishes three levels of assessment outcomes: outcome measurement, outcome monitoring and outcome management.

This PhD thesis investigates ‘outcome measurement’, which means the standardized measurement of the severity of the mental disorder and the functional change of a patient before, during and after the treatment (Sederer et al, 1997; Sperry, 1997, Brown et al, 2001 Hermann 2005; Trauer, 2010).

The development of the process of outcome measurement requires the investigation of:

1. the reliability and validity of measuring instruments;
2. the implementation of the regular measurement during treatment;
3. the management of the data;
4. the effect of feedback on the patient, the practitioner and treatment.

It is essential to have a reliable outcome monitoring system that is feasible, consistent with existing healthcare systems, and which makes monitoring the treatment valuable for patient, practitioner and management. In the Netherlands, for this a special system is developed: the Routine Outcome Monitoring (ROM). With ROM the severity of the psychiatric disorder, the course, the results, the quality and the improvement of the quality of treatment can be measured. Feedback of this data gives the clinician the ability to adapt to the needs of the patient’s treatment.

When introducing outcome measurement, it is important to create a support base and awareness among individual employees and organizations to change their natural resistance to change (Crockers & Rissel, 1998).

The outcome-data can be used as feedback to clinicians, patient, and management. Data from different patients can be combined whereof the performance of individuals, groups or institutions can be compared. Through this process of benchmarking, interested parties inside and outside the institution can get an insight of the quality of the healthcare organization.

In this thesis, a modified definition of feedback, originally formulated by Knaup et al (2009) is used: “the results of the measurement instruments are standardized for giving feedback to the professional by using a fixed protocol and in the form of a progress graph of patients’ treatment in a printed or digital version.”

During the research ROM is implemented in the mental healthcare in the Netherlands. Healthcare professionals have criticized this implementation because the effectiveness of ROM is still insufficiently proven and ROM nevertheless is used for benchmarking by the government and health insurers. These critical considerations during the introduction of ROM in the Netherlands led to this PhD research into the factors in the Dutch context that contributed to the problems and effectiveness of ROM.

These factors are translated into four questions for this thesis which are partly based on the quality paradigm of Donabedian (1966, 1988, 2009):
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 of the thesis)?

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 as described in Chapter 6 on outcomes of treatment, if feedback is guaranteed 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)?

**Doctoral thesis**

In the first chapter the reason for the research questions of the thesis is described. In the second chapter, a combination of the Health of the Nation Outcome Scales (HoNOS) (Wing et al., 1996, 1998; Mulder et al., 2004) and the Outcome Questionnaire (OQ) (Lambert et al., 2001a, 2001b; De Beurs et al., 2005; Jong et al., 2007) – an expert-opinion and a self-rating scale, respectively – appears to offer the greatest utility for daily clinical practice. These measures not only cover the broadest range of disorders but also describe the difficulties patients experience regarding their social role, performance, and interpersonal problems. These findings have led to the HORVAN Study: a study of the HoNOS, OQ ROM Validity in The Netherlands.

In chapter three the applicability of these measures in clinical-care, as suggested from the literature review, confirmed in our empirical research HORVAN Study, Part I, was described.

In chapter four discussed that the use of the HoNOS to make clinical decisions in clinical practice, including providing guidance as to how treatment can be altered and improved. The chapters 2, 3 and 4 together cover Part I of the study HORVAN.

The second part of the HORVAN Study is introduced in chapter five. This chapter describes how through major internal and external organizational factors, the design of the randomized controlled trial was transformed into a more naturalistic form.

In chapter six, the clinical-care process and the responsibilities of the key figures are described. A SWOT analysis is used to create an operations-management approach (Visser & de Vries, 2005) to introduce for the ROM which includes analysis, design, planning and monitoring of all the steps necessary to guarantee the quality, effectiveness and to ensure efficiency of the treatment of the patient.

Chapter seven describes a literature review and an empirical study into the effect of feedback in a non-academic general psychiatric practice. Only a few systematic reviews describe the effect of feedback in general psychiatry (Knaup et al 2009; Carlier et al 2010). Research on the implementation of feedback and how feedback is given, cannot be found in the literature.

Lambert et al. (2001) used ROM as part of a prediction model in a psychotherapeutic setting with a group of patients with ‘minor problems’. The feedback in this model resulted in a significant improvement in the group of patients who have deviated from the desired course of the treatment the so-called Not On Track (NOT) group. The Dutch study of de Jong (2012) is very similar to the research of Lambert and finds similar results for the NOT group.

In the naturalistic HORVAN Study, Part II extra attention was paid to guiding the implementation of ROM by providing frequent training sessions, individual counseling trajectories and monitoring the use of feedback by the practitioners in their patients. The patients in the study HORVAN are divided into three groups: the care-as-usual group, the reflection group and the obligatory (mandatory) feedback group. In the feedback group, the clinical results are made transparent by supplying forced (obligatory) and compulsory (mandatory and obligatory) feedback, in a standardized way by means of a protocol, where feedback to clinicians and patients is monitored. Twenty-six percent of patients have received the required feedback in this way. In the reflection group, in which the professional is viewing the feedback when he or she fills measurement instruments, there is a minimal greater positive effect than in the ‘care as usual’ and ‘mandatory’ feedback group. Mandatory feedback and additional monitoring prove to have a negative effect on the willingness of practitioners to contribute to the implementation of ROM.
Chapter eight discusses an empirical study of the attitudes of practitioners and patients towards the use of ROM. In the HORVAN Study Part II a negative attitude of the clinicians with regard to ROM is found, that previously was described by Garland et al (2003) and Meehan et al (2006). Interference in the professional’s autonomy plays a role. The patients in this study, however, are positive about ROM and the contribution ROM can have in the communication between clinicians and patients during the treatment. Creating a strong, positive basis for the use of ROM is essential and is directly related to the attitude of the clinicians and patients towards ROM. This study developed a tool to specifically measure the attitude of clinicians and patients towards ROM.

Clinical relevance of the PhD research.

In the Netherlands, ROM is used as a common means in order to improve the quality of the treatment in the three domains of Donabedian (1966, 1988, 2005): structure, process, and outcomes. Sytenga et al (2011) found insufficient evidence that ROM enhances the quality and efficiency of the treatment. The disappointing results of the HORVAN Study Part II are consistent with the results of Sytenga et al (2011). The results of HORVAN Study make it even more important to cautiously deal with the use of ROM in the Dutch mental health care. The negative results may be correlated to the partial loss of professional autonomy and too much interference in the clinical-care process.

The HORVAN Study focuses on the implementation of the ROM methodology and embedding it in the clinical-care process. The study shows that the application of ROM requires to investigate the organization of the clinical-care process first. Shortcomings in the organization and moderate receptiveness such as susceptibility and sensitivity to innovation can then be solved. Both qualitative and reflective dimensions of the study on the structure of the organization in chapter six, as the empirical study on the attitudes of professionals and patients in chapter eight, give an explanation and insight into these organizational problems. A clear example is that professionals must have confidence in ROM for the implementation to succeed. The management on the other hand has to acknowledge that the obligation to use ROM leads to resistance.

Social relevance

One of the reasons that ROM is implemented nationwide is to enable insurers to use the ROM as an instrument to obtain treatment results and to base the treatment rate on the desired outcome of treatment. The mental healthcare system is confronted with this benchmarking via ROM, while research shows that several factors can negatively affect successful implementation and application of ROM.

The HORVAN Study, Part II, is performed in a mental health institution with a non-academic tradition, where during the study ROM is implemented in the organization. In the HORVAN Study are several factors included that influence the implementation process: the management of the implementation process, the involvement of clinicians, the impact of feedback, like type and frequency, the impact of change on all levels within the organization and in all phases of the adaptation process and the measurement instruments used. Relevant information obtained through this study, offers important insights into how complex and demanding it is to implement innovations in an open and effective way. Further research into the effect of these factors is recommended.
Methodological limitations

The study has some limitations:

1. By internal and external organizational factors the randomized controlled trial is changed to a more realistic field study in the Netherlands;
2. The measurement instruments for evaluation are limited to two 'broad spectrum' instruments. Specific outcome instruments are not part of this study;
3. The empirical study represents one of the first studies into the problems in the implementation of ROM, while the study also focuses on the attitudes of clinicians and patients. Analysis of operations-management shows that other important factors, such as participatory design and the involvement of the professional as process-manager have not been studied;
4. The study is limited to the treatment of patients with mild psychiatric disorders like mood and anxiety disorders;
5. The study is confined to a mental healthcare outpatient clinic. Research into the effects of ROM on an acute ward, during chronic long-term treatment or treatment in a general or psychiatric hospital is important because there other problems can occur such as the management of ROM measurements, follow-up evaluation and the influence of co-morbidity (Buwald et al, 2011);
6. Research in other settings and with specific instruments, such as in forensic psychiatry, addiction psychiatry and aforementioned psychiatric facilities is lacking;
7. The research took place in the adult psychiatry and other life stages were disregarded;
8. Research on the effect of ROM on large patient groups is important to investigate whether the method of Lambert herein gives similar effects;
9. In this study, only one profession, psychologists, is examined

Recommendations for future research on the use of Routine Outcome Monitoring
Research on substantive aspects of the treatment

To validate the selection of outcome measures for ROM it is essential that further research into certain generic instruments is done. The application of the HoNOS for personality disorders, eating disorders, bipolar disorder, autism, other disorders and other groups such as the mentally handicapped and children is recommended. It is also important to determine to what extent the HoNOS or other instruments may useful in clinical practice for the target groups of the therefore mentioned disorders and how measuring clinically significant change can support in making decisions about the treatment.

It is also important to examine a large group of patients with a similar condition in a randomized controlled trial format. In this way, the prediction model of Lambert (2001) can be analyzed, and it can be determined whether feedback contributes to the improvement of the results of the treatment, for example with a Not On Track group of patients.

Research on organizational aspects

In addition, operational research is recommended in which different ways of implementation and applicability can be studied as in the participatory design method (Visser & de Vries, 2005). The effect of the attitude of the professional towards ROM and the influence of the preservation of autonomy of the professional in the treatment process on the results of the treatment and the use of ROM is an important topic for further research.

The influence of the attitude of the patient in relation to the implementation of ROM on the attitudes of clinicians towards ROM, on the development of decision-making in the treatment - shared-decision making - (Deegan et al, 2006) - and on the communication between clinicians and patients should be studied. The differences between the attitudes of different groups of professionals, such as social workers,
psychologists, psychiatrists and other staff in mental health, towards ROM are still unknown and ought to be explored.

Research on Routine Outcome Monitoring and benchmarking

Another research topic that is beyond the scope of this study is the use of ROM outcomes as benchmarks for third parties such as health insurers and the government. Van Os et al (2012) have argued that the use of ROM data for benchmarking "is not scientifically justified, is not validated and is not ethical" and ascribes this conclusion to "some inevitable methodological problems such as confounding bias, a combination of measuring instruments with low sensitivity". Based on this insight, research is needed to achieve reliable and credible benchmarking. Small research projects demonstrate how the implementation of ROM can be done on a feasible and meaningful way. These projects can be used to guide the national implementation process. At the same time it is important not to create large databases without scientific evidence for such a need, spending time and money on data-mining.

Conclusion
In the paradigms of Donabedian and the further elaboration of the outcome monitoring by Sperry measuring during the treatment of patients as an important factor for the quality of the given treatment. This thesis, focused on outcome monitoring, has shown that the use of ROM not necessarily contribute to the quality of treatment and that the attitude of professionals and patients towards ROM is a determining factor. The study also shows that the use of ROM requires that the shortcomings in the organization of clinical-care process must be resolved first. The following important questions remain to be answered regarding Routine Outcome Monitoring:

- Is the current organization of ROM clinically and administratively sufficiently efficient to contribute to a better mental healthcare?
- Can ROM enhance the effectiveness of the treatment?
- How can using ROM address the need for professional autonomy?

These questions illustrate how much research and work must be done before ROM is a worthwhile innovation to be implemented in regular mental healthcare services.
Referenties


