

# Cost-effectiveness of psychotherapy for Borderline Personality Disorder

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## VALORISATION ADDENDUM



## Valorisation addendum

Epilouous to this thesis, this chapter serves to facilitate an appreciation of its added value in terms of the specific knowledge and products that were created. Given a financial interpretation, valorisation may easily be interpreted as ‘turning something into money’. Yet, in a broader sense, e.g., when it is applied to knowledge, its meaning also refers to other kinds of benefit to (members of) society. For example, other scientists, health professionals or policy makers may utilize the knowledge that was created.

First, the societal and economic relevance of the studies is highlighted below. Subsequently, the (potential) stakeholders who could benefit from the work are described. Next, the innovativeness of the work is described. Finally, this chapter describes the specific purpose and possible use of the knowledge and products that were created in this thesis.

### Societal and economic relevance

Borderline personality disorder (BPD) is a common and severe mental disorder, with a prevalence in the Netherlands of 1.1% in the general population (ten Have et al., 2016). In other countries, similar BPD prevalence estimates range between 0.5 and 2.7% (Samuels, 2011). Several studies have indicated that the quality of life of patients with BPD is severely impaired (Feenstra et al., 2012; IsHak et al., 2013; Perseius et al., 2006; Soeteman, Verheul, & van Busschbach, 2008). A diagnosis of BPD is a large burden to bear for a patient, and often also for his or her family, friends, colleagues, care providers, and others in his or her environment.

To society as a whole, the burden of BPD is significant in economic terms as well. To a large extent this can be explained by an extensive use of health care services, including both inpatient and outpatient facilities (Bender et al., 2001; Coid et al., 2009; Feenstra et al., 2012; Soeteman, Hakkaart-van Roijen, et al., 2008). Adding these costs to the costs of productivity losses (van Asselt et al., 2007; Soeteman, Hakkaart-van Roijen, et al., 2008) as well as other costs, such as those related to informal care and out-of-pocket costs (van Asselt et al., 2007), the total societal costs for BPD are substantial.

In the current Dutch health care system, the costs for specialized psychotherapy for BPD are not always (fully) reimbursed. On the one hand, this is because of the high costs of these treatments. On the other hand, it is due to the fact that the availability of empirical evidence regarding the clinical effectiveness and cost-effectiveness of (specific forms or formats for the delivery of) specialized psychotherapy for BPD is still limited. The result is a reluctant policy towards the reimbursement of such treatments, often in favor of treatment options with a shorter duration.

Psychotherapeutic treatments for BPD are costly, because a high number of (individual) psychotherapy sessions is often needed for successful treatment. However, the costs for psychotherapy could possibly be partly offset by reductions in the costs for the use of other health care services. It therefore is important to determine how the potential differences in clinical effectiveness of psychotherapy for BPD relate to the potential differences in costs. This applies both to the extension of the supply of specialized psychotherapy for BPD (e.g., see Chapter 3 of this thesis) as well as to new formats for the delivery of (a specific type of) specialized psychotherapy for BPD, such as group schema therapy (GST; e.g., see Chapters 4 and 5 of this thesis). When psychotherapy can be effectively delivered (either in part or in full) in a group format, that enables a more efficient use of resources in comparison to only individual psychotherapy.

Economic evaluations are preferably performed from a societal perspective, so that all relevant costs and benefits to society are taken into account. The economic relevance of a study on the cost-effectiveness of health interventions is inherent to its definition as a study on 'the value for money' of such interventions. Cost-effectiveness studies may be informative for policy making, since they provide important indications for an efficient allocation of scarce (health care) resources.

## Stakeholders

### Patients & therapists

Studies on the cost-effectiveness of specialized psychotherapy for patients with BPD can have important implications for clinical practice. They contribute to the overall empirical evidence base that can be used to inform decisions regarding the reimbursement of these lengthy and intensive, and therefore costly, treatments. A better availability of treatments that are both clinically effective as well as cost-effective is beneficial for patients and therapists, as well as for society as a whole.

The results of a synthesis of the available empirical evidence on the costs and effects of specialized psychotherapy for patients with BPD indicate that it can be considered as a cost-effective treatment from a health care perspective (Chapter 3). This suggests that further investment to extend its supply would provide good value for money.

GST has been specifically designed as a specialized psychotherapy for patients with BPD, includes important additional therapeutic elements that are not present in an individual setting and enhances efficiency in the use of health care resources through the use of group sessions for delivery. The results of the international, multicentre RCT described in Chapter 4 will reveal whether GST can be considered as a treatment that is both clinically effective, as well as cost-effective. Cost-effectiveness is assessed from a societal perspective, also taking into account patient and family costs, as well as costs in

other sectors (e.g., productivity losses), in addition to health care costs. A follow-up time period of three years is used to take into account costs and benefits of treatment beyond those of treatment duration. This study will provide important empirical evidence that can be used in decisions regarding the reimbursement of the costs for GST as well as the updating of treatment guidelines.

## Scientists

Other scientists may benefit from the work in this thesis, since it provides examples of studies, as well as important directions for future research.

The overview of economic evaluations on psychotherapy for personality disorders in Chapter 2 could be an important starting point for any investigator with interest in the topic. Moreover, it provides important directions for the improvement of future studies (i.e., to perform economic evaluations from a societal perspective, and to use quality-adjusted life years as an outcome measure for effectiveness).

Chapter 3 of this thesis presents a method for the synthesis of empirical evidence on the costs and effects of specialized psychotherapy for BPD, that could be applied to other treatments and disorders as well. Furthermore, it may form a basis for future studies to further test, compare, and advance methodological approaches to the synthesis of evidence for cost-effectiveness and budget impact analyses. A detailed explanation of the methodology is provided and a mathematical appendix is included.

The empirical study described in Chapters 4 and 5 of this thesis will contribute to the evidence base regarding the cost-effectiveness of GST for BPD.

The methodological study in Chapter 6 of this thesis presents an application of Bayesian multilevel models to longitudinal cost-effectiveness data. The method offers an efficient approach to the analysis of longitudinal datasets that include cases with missing values. It makes use of Bayesian statistics to produce probabilistic statements about the relative cost-effectiveness of treatments, and can be flexibly extended to account for gamma and lognormal distributed data. It includes a detailed explanation of the underlying rationale and it demonstrates how the method is applied to an empirical dataset. A statistical appendix to this chapter furthermore provides the mathematical descriptions of the models, including prior distributions, as well as a manual to provide step-by-step instructions, including command syntax and model code, for the interested applied researcher. It could be helpful for any researcher interested in learning how to apply the method, as well as the expert analyst interested in further scrutinizing it.

## Policy makers

The studies performed in this thesis are relevant for policy makers who decide over the reimbursement of the costs of psychotherapy for patients with BPD. When the results of these studies are used to inform decisions regarding reimbursement, this is also relevant for society. It could contribute to a more efficient allocation of scarce health resources, as well as better availability of effective treatment options for patients with BPD.

The synthesis of the available empirical evidence in Chapter 3 of this thesis suggests that specialized psychotherapy has a high probability of cost-effectiveness. This is important information in considering the (full) reimbursement of the costs for those treatments. Chapter 3 also provides important indications for future research to resolve those aspects that are still uncertain. This includes how specialized psychotherapy compares to treatment-as-usual (TAU), as well as when time horizons are used that are longer than one year.

The economic evaluation described in Chapter 4 and 5 of this thesis will provide empirical evidence on the comparative cost-effectiveness of two different formats for GST and TAU. A time horizon of three years is used. Importantly, this study is performed from a societal perspective (i.e., in contrast to the study in Chapter 3, which is performed from a health care perspective). This study will thus reveal whether GST, which is designed specifically as a specialized psychotherapy with enhanced efficiency in the use of health care resources, has added value in relation to current clinical practice, while taking into account an appropriate time horizon that covers the full two-year duration of treatment as well as an additional year, as well as all (potentially) relevant societal costs.

Since the economic evaluation that is performed alongside the RCT therefore takes into account all potentially relevant costs and effects and uses a follow-up time period that extends beyond treatment duration, it will allow policy makers to focus on not only the costs of the intervention, in addition to other changes in health care costs, but also on other costs that are relevant to society. For example, an effective psychotherapy that leads to recovery from BPD can also have beneficial effects through restorations of productivity losses. Societal costs other than those for health care are not of primary interest to health insurers, or other governing institutes with a focus on budgets that are restricted to health care costs. One could therefore question whether it makes sense to leave it to them, when a decision is required regarding the reimbursement of the costs for an intervention which has (economic) benefits that extend into other sectors, governmental departments, or governing institutes. Instead, it could be argued that intersectoral policy making is required for interventions with intersectoral costs and benefits. The study described in Chapters 4 and 5 will provide important insights on this aspect.

## Innovativeness

The studies in this thesis are innovative in various ways. Chapter 2 provides an overview of economic evaluation studies on psychotherapy for BPD that was hitherto not available. Chapter 3 presents a method for the synthesis of data on costs and effects using all the relevant empirical findings that are available in the scientific literature. It has the advantage of incorporating various types of data, and from studies with different designs. Although the method is applied to the cost-effectiveness and budget impact of specialized psychotherapy for BPD, it could also be applied to the cost-effectiveness and budget impact of other treatments and disorders. Chapters 4 and 5 present a study on the (clinical and) cost-effectiveness of GST, which is an innovative approach to the treatment of BPD. Chapter 6 presents an innovative methodological approach to the analysis of longitudinal cost-effectiveness data using Bayesian multilevel models as an extension of the net benefit regression framework. The method offers an efficient approach to the analysis of longitudinal datasets that include cases with missing values. Furthermore, the use of Bayesian statistics enables probabilistic statements about the relative cost-effectiveness of treatments, which the use of null hypothesis tests, the method of inference used in traditional (frequentist) statistics, cannot.

## Knowledge and products

The studies in Chapter 2, 3, and 4 are published as articles in the Dutch Journal of Psychiatry ('Tijdschrift voor Psychiatrie'), the Journal for Mental Health Policy and Economics, and BMC Psychiatry (BMC = BioMedCentral), respectively (Wetzelaer et al., 2016, 2017, 2014). These include both national and international, as well as peer-reviewed journals. Chapter 5 is based on the preliminary results of an international, multicentre RCT on group schema therapy, and is restricted to data from the Dutch sites. Due to their preliminary nature, these results are not amenable for publication. Once completed, the results of the RCT will add to the empirical evidence base for both the clinical effectiveness and cost-effectiveness of GST.

Transparency is important when presenting methodologies, such as in Chapters 3 and 6, since it facilitates fellow researchers who are interested in applying it, as well as those who wish to critically review it, build further upon it, or compare it with alternative methodologies. It therefore contributes to further advance the assessment and analysis of cost-effectiveness, in the context of psychotherapy for BPD, but also for other disorders, treatments, and beyond.

The study in Chapter 3 includes a detailed explanation of the methodology, as well as a mathematical appendix. The study in Chapter 6 includes a statistical appendix with

the mathematical descriptions of the models (including prior distributions). In addition, a detailed manual is included that provides step-by-step instructions, including command syntax and model code, for the researcher who is interested in applying the method to a dataset. This will facilitate to make the knowledge that was created accessible to analysts and applied researchers without specialist expertise in Bayesian statistics.

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