Routine outcome monitoring & learning organizations in substance abuse treatment
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Citation for published version (APA):

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Summary

In the last decades, quality improvement has gained more and more attention in the substance abuse treatment sector, and in the Netherlands the nationwide quality improvement project “To Score Results” has contributed to this. One of the final steps in quality improvement is to quantify, maintain and further improve treatment quality. Performance measurement, outcome measurement and learning from feedback are activities that support this aim. Routine outcome monitoring (ROM), defined as the measurement and feedback of treatment outcome, is a strategy that has recognized merits and is therefore implemented in many organizations for substance abuse treatment (SAT). The expectation is that ROM will contribute to further quality improvement and accountability towards internal and external stakeholders. However, from different practice projects and scientific studies in the field of ROM, some issues have surfaced. The aim of this thesis is to study these issues and to provide solutions or answers where possible.

The main question in this thesis is: Is it possible to implement a kind of ROM that is feasible, generates valid data, is supported by key persons in services, can be used to generate conclusions about effectiveness and, finally, will contribute to the learning capacity of employees?

Chapter 2 describes the feasibility and validity of collected data with ROM. We installed a low-budget telephonic follow-up system – a call center – and investigated the feasibility in terms of response rate, time investment and costs. Next, we investigated the validity of the collected data in terms of tracking difficulty and representativeness of respondents and the association between clinical characteristics and treatment outcomes. Results showed that it is feasible to implement a low-budget follow-up system to collect follow-up data with a telephonic call centre. Costs were low and response rate was modest, but similar to rates reported by other big studies, like DATOS. Failure to contact patients turned out to be the most frequent reason for non-response. However, when contacted, patients were cooperative. The percentage of patients that refused the interview was 3%. Results also showed that this method does not guarantee a representative follow-up sample of the treated population. Patients with features that are probably related to negative treatment outcomes (e.g. being non-Dutch, using cocaine or opioids) were under-represented in the follow-up sample and this resulted in unexpectedly good outcomes in these specific sub-populations. Therefore, the validity of the collected data is limited.

To enhance the validity of the follow-up data it is important to make sure that administrative systems are up-to-date. Implementing suitable databases and training users should be the first priority for using EPRs for ROM. Then,
more intensive tracking systems can be implemented, in addition to applying a
different strategy to collect valid follow-up data, using a random sample of the
treated population instead of trying to reach all treated patients, and spending
all available resources on better follow-up rates.

*Chapter 3* describes facilitating and impeding factors, and support for ROM
in substance abuse treatment centers. Because we encountered problems in the
ROM project with data collection and limited participation in feedback we
decided to conduct further research into the factors that play a role in the in-
troduction of ROM in the substance abuse treatment system. From interviews
with key persons from the SATCs, 14 factors were found to be important.
Support and commitment on the part of staff and supervisors, and compre-
hensible and attractively presented outcomes are the most important facilitating
factors. The lack of commitment is mentioned as an impeding factor though,
i.e. if respondents do not have the feeling the project is *theirs*. This is why it is
important that the questionnaire study amongst treatment staff showed that
this support is there for the ROM project. Most of the professionals see the
relevance of feedback. In addition, the feedback sessions are appreciated and
most professionals feel that data feedback in this form should be continued.
The attendance at the feedback sessions is limited however. So for the time
being, the distribution of the outcome data is limited as well. Professionals in-
dicated that outcomes are not dealt with effectively at the centers. The super-
visors do not devote much attention to them and it is not clear to them how
they can launch improvement actions on the basis of the results. So there is a
lack of support on the part of the supervisors and of general commitment to
the project. The essential factors that could have a positive effect are not in
evidence. Regular overviews of the outcomes at team level or giving teams an
extra say in the form and content of feedback could be effective in this con-
nection. Addressing and interpreting treatment results in training and other
courses could lead to more improvement actions and thus improve the quality
of treatments in such as way as to reach and maintain the efficacy of the RCTs
the treatments are derived from.

*Chapter 4* is an example of how databases for ROM can be used to perform
research on the effectiveness of treatments in routine practice. This is an im-
portant addition to the proof of efficacy obtained from RCTs. We examined
the feasibility and effectiveness of two evidence-based outpatient psycho-
therapeutic interventions for patients with alcohol use disorders, the Lifestyle
Training. Lifestyle Trainings consist of a brief cognitive behavioural intervention
with four sessions and a standard cognitive behavioural intervention with ten
sessions. Furthermore, we assessed whether pre-treatment patient character-
istics are predictive of treatment outcomes for these interventions. The most
severe patients were indeed allocated to the higher level of care, and the two psychotherapeutic interventions indeed differed significantly in the number of sessions that were attended. This was according to guidelines for treatment allocation and a study that evaluated the feasibility of these allocation guidelines. We also showed that a substantial portion of patients were under-treated, with more under-treated patients in the higher level of care. Regarding effectiveness, we concluded that treatment was successful in 43.2% of patients and that treatment exposure was not related to treatment outcome. We concluded that the results of alcohol treatment RCTs like MATCH are preserved in a naturalistic setting, although the proportion of relapsing patients is high in both settings.

The principal theme of Chapters 5 and 6 is the learning organization. In Chapter 5, the development of the Questionnaire for Learning Organizations (QLO) is described. The QLO is based on the theory of Learning Organizations of Senge, in which five disciplines are believed to play an important role. The five disciplines Personal Mastery, Mental Models, Shared Vision, Team Learning, and Systems Thinking, were found in confirmatory factor analysis of the QLO. However, the psychometric properties of some of the QLO subscales need improvement. This is especially true for the subscales Personal Mastery and Mental Models. In Chapter 6, we investigated whether ROM plays a role in enhancing learning capacity in terms of Senge’s theory of Learning Organizations, utilizing the QLO to assess the effects of ROM on the learning capacity of employees of SATCs. To assess this, 30 treatment professionals of the Lifestyle Training filled out the QLO before any feedback sessions had taken place and after three feedback sessions had taken place. Contrary to our expectations, learning capacity of professionals did not increase after feedback sessions had taken place – overall, learning capacity turned out to be lower after the intervention. Moreover, change of learning capacity was not different for respondents who did visit feedback sessions of ROM data compared to those who didn’t. One conclusion is that merely visiting feedback sessions might be insufficient to result in an increase in learning capacity. Another conclusion is that implementing ROM underlines the need for feedback for treatment professionals and thus results in professionals becoming more critical. Before drawing major conclusions, the results of the studies in Chapter 5 and 6 suggest that the QLO needs further improvement. It is an instrument in development. Some internal consistency figures were very low, suggesting substantive measurement error. Reformulating and revising items should be the first step in new research. Next, we should focus on the type and quality of the feedback sessions and get more insight into the needs of treatment professionals in order to profit from the sessions. As a result, it would be interesting
to know how treatment professionals appreciate feedback sessions and include this as a covariate in the study, next to the assessment of the amount of feedback they received.

Chapter 7 is the general discussion. Reviewing the five studies presented in this thesis, it can be concluded that it is feasible to implement ROM with telephonic follow-up interviews, but that the data collected through this procedure suffers from selection bias. This prevents definite valid conclusions on aggregated treatment effectiveness. Moreover, although key persons in the organization appreciated the implemented ROM system, the lack of practical support for the system turned out to be a complicating factor. The ROM database permitted conclusions about effectiveness, but the considerations about selection bias, which could result in an over-estimation of positive treatment outcome, should be taken into account. Finally, we found no conclusive evidence about the positive influence of feedback of aggregated treatment outcome data on organizational learning, as measured with the newly developed QLO.

The studies in this thesis are limited in some respects. First, all studies in this thesis took place in the setting of substance abuse treatment. Therefore it is questionable whether the results can be applied in other settings, like mental health care. Considering the nature of diseases such as depression, this is most likely the case: Settings are comparable as well as types of outcome measures. Next, the studies in this thesis are on ROM applied in the aggregated strategy (ROMan). It is not sure, whether the results and conclusions are applicable to concurrent ROM (ROMon). Previously, however, data collected in concurrent measurements was often used in an aggregated manner for program evaluations, suggesting that conclusions and suggestions from our study are also applicable for theory, research and practice of that kind of ROM.

Chapter 7 also presents some suggestions for research and practice. It is suggested to use a sample of the treatment population to assess treatment effectiveness; to apply the follow-up interview as an instrument to prevent relapse; to train treatment professionals and managers focused on the understanding and interpretation of treatment outcomes; and to spend more attention on the retrieval of tracking details form EPRs and data management. The empirical evidence of the relation between treatment outcome feedback and quality improvement is scarce. Therefore, we studied the association between treatment outcomes feedback and a potential condition for quality improvement, learning capacity. In the present studies, the association was not established. Further development of questionnaires like the QLO is required, including the comparison of results obtained with instruments based on different theories on learning organizations, inside and outside of the field of substance abuse treatment or mental health care.