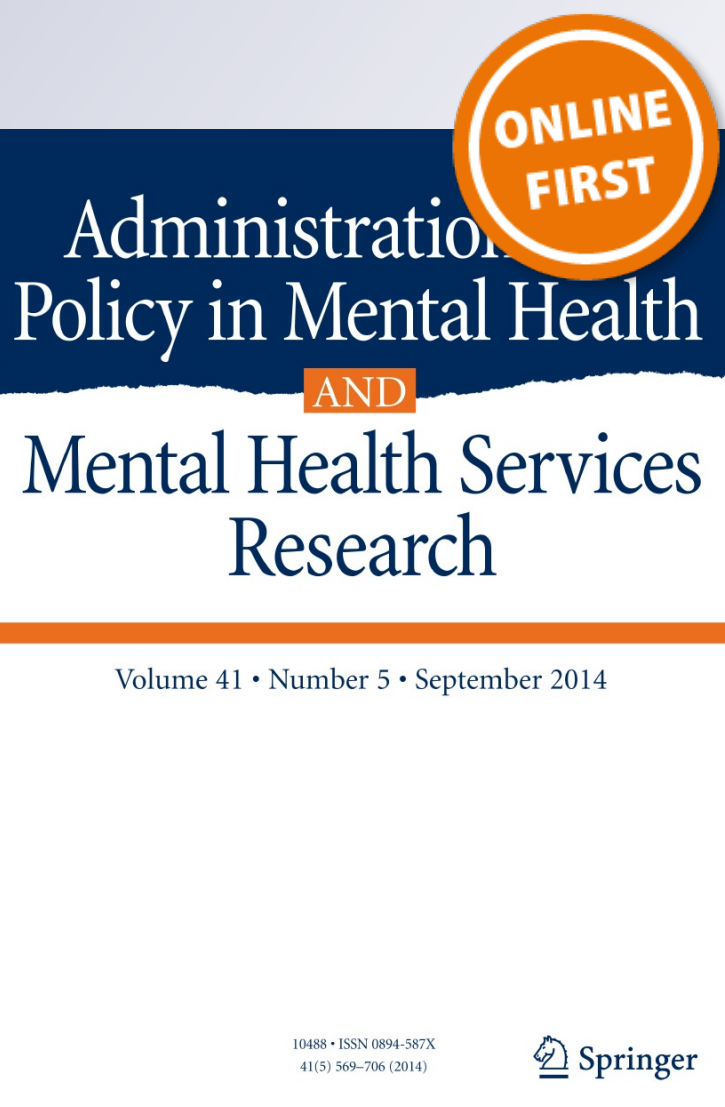# *Clinicians' Attitudes Towards Outcome and Process Monitoring: A Validation of the Outcome Measurement Questionnaire*

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Administration
Policy in Mental Health
AND
Mental Health Services
Research

Volume 41 • Number 5 • September 2014

10488 • ISSN 0894-587X
41(5) 569–706 (2014)

Springer

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ORIGINAL ARTICLE

Clinicians' Attitudes Towards Outcome and Process Monitoring: A Validation of the Outcome Measurement Questionnaire

Dave F. Smits · Laurence Claes · Nele Stinckens · Dirk J. M. Smits

Abstract Valid and reliable instruments to measure monitoring attitudes of clinicians are scarce. The influence of sociodemographics and professional characteristics on monitoring attitudes is largely unknown. First, we investigated the factor structure and reliability of the Outcome Measurement Questionnaire among a sample of Flemish mental health professionals (n = 170). Next, we examined the relationship between clinicians' sociodemographic and professional characteristics and monitoring attitudes. Construct validity was determined using a confirmatory factor analysis. Internal consistency was ascertained using Cronbach's alpha. Mean level differences in monitoring attitudes related to clinicians' gender, work setting, level of education and psychotherapeutic training, were investigated using ANOVAs. The relationships between clinicians' age, clinical experience and attitudes were calculated using the Pearson correlation coefficient. A model with one general factor and a method factor referring to reverse-worded items best fitted our data. Internal consistency was good. Clinicians with psychotherapeutic training reported more favorable monitoring attitudes than those without such training. Compared to clinicians working in subsidized outpatient services, private practitioners and clinicians from inpatient mental health clinics had more positive attitudes. Results highlight the need for sustained and targeted training, with particular focus on transforming measurement data into meaningful clinical support tools.

Introduction

Howard et al. ([1996](#)) introduced patient-focused research—also known as monitoring, routine outcome assessment or outcome measurement—as a new paradigm for evaluating psychotherapy and monitoring individual patients' progress over the course of therapy. In this research tradition, patients have to rate treatment progress and processes at multiple time points during their treatment. At a single-case level, these data can be used as valuable feedback to support clinicians in ongoing clinical decision-making. At a cross-case level, these data can be used to evaluate, compare and improve quality of care at a service level (benchmarking), or to study the effectiveness of treatment in naturalistic settings (Lambert et al. [2001](#)). Recently, many different monitoring instruments have been developed. Although they all differ to some extent (e.g. frequency of measurements, interval, content of feedback, …), feedback to clinicians is considered a key mechanism of change in all these systems (Lambert [2010a](#), [b](#); Sapyta et al. [2005](#)). Systematic client feedback has proven to increase treatment outcome, especially in clients predicted to have poor outcomes (Knaup et al. [2009](#); Shimokawa et al. [2010](#)). It also increases clients' engagement and motivation to change, instills confidence in the therapeutic process and facilitates the formation of a strong therapeutic alliance (Allen et al. [2003](#); Guthrie et al. [2008](#); Hilsenroth

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et al. 2004). Despite these positive effects and the growing availability of monitoring instruments, many clinicians remain hesitant, ambivalent or negative towards monitoring. Calally and Hallebone (2001) reported that 44 % of clinicians considered outcome measurement a waste of time and an administrative burden. Walter et al. (1998) found that almost 67 % of clinicians would refuse the use of self-report instruments, even if even they acknowledged that it would lead to better patient outcomes. Similarly, Trauer et al. (2006) observed that a significant portion of clinicians (up to 50 %) had no recorded instances of self-report measures in services with mandatory use of outcome measurements. Often policymakers and mental health service managers tackle clinicians' 'resistance' by mandating the routine use of monitoring. However, studies call for careful use of explicit pressure and external force. Walter et al. (1998), for example, reported significant problems in quality of data in a context of mandatory use of monitoring. Post hoc analysis revealed that data collected by clinicians holding a negative attitude were flawed: more missing data, more early termination of monitoring trajectories and more client refusals to participate. Additionally, there is some evidence that a less oppressive approach could be more successful. For instance, intensive training (Willis et al. 2009), ongoing technical support (Close-Goedjen and Saunders 2002), clinical guidance and team intervision (Trauer et al. 2009) have proven to affect clinicians' attitudes in positive ways.

A better understanding of the relationship between clinicians' characteristics and their attitudes toward monitoring is important for developing and adapting training programs to maximize uptake and compliance of monitoring. So far, only a limited number of empirical studies have examined this relationship. Concerning the relationship between gender, age and monitoring attitudes, multiple studies (De Jong et al. 2012; Trauer et al. 2006; Willis et al. 2009) found no significant associations. The findings on professional characteristics are more ambiguous. Willis et al. (2009) and Trauer et al. (2009) investigated whether professional discipline played a significant role in attitudes but found no differences. Huffman et al. (2004), however, reported that psychiatrists from university-based and community-based child mental health clinics held less favorable views on outcome measurements than psychologists. The authors speculated that this could be tied to their medical training, 'in which the use of individual interviews and unstructured progress monitoring are emphasized' (p. 186). Similarly, Trauer et al. (2009) found that both psychiatrists and psychologists had more negative opinions toward outcome measurements compared to nurses, occupational therapists and administrative personnel. They argued that outcome monitoring might be experienced as a source of negative interference with their

clinical judgment and a threat to their professional autonomy. Finally, the relationship between clinical experience and monitoring attitudes was not significant in a study by Willis et al. (2009). The influence of work settings on clinicians' attitudes has not yet been thoroughly investigated. Trauer et al. (2009) compared attitude ratings from four different work settings (acute inpatient, community, residential and administration settings). The results showed that staff in administration settings accounted for the highest ratings. Staff in community settings reported the lowest ratings.

We have not come across studies focusing on the relationship between monitoring attitudes and clinicians' educational level or psychotherapeutic training. However, during training sessions and workshops at multiple mental health services, we often experienced strong differences in clinicians' abilities to use monitoring data in a clinically meaningful way.[1] These differences could be related to differences in clinicians' knowledge and skills gained during their basic training (e.g. familiarity with test scores) or during long-term psychotherapeutic training (e.g. rationale for treatment goals and tasks, meta-communication in case of alliance ruptures ,…). Therefore, we assume that differences in clinicians' level of education and psychotherapeutic training will influence their perceptions of monitoring.

A prerequisite to investigating clinicians' attitudes towards monitoring is the existence of a reliable and valid assessment instrument. As a first aim of this study, we translated the Outcome Measurement Questionnaire (OMQ) and investigated its factor structure and reliability in a Flemish sample. We expected to find two components: One factor referring to a 'general monitoring attitude', and another referring to 'openness to feedback'. We subsequently explored the relationship between on the one hand sociodemographics (gender, age) and professional characteristics (level of education, psychotherapeutic training, work setting and clinical experience), and monitoring attitudes on the other. We hypothesized that gender, age and clinical experience would not influence attitude ratings. In terms of the effect of education, we expected clinicians with a master's degree to have a more positive attitude than those with a bachelor's degree, given the first group's familiarity with test scores and the masters' programs rationale for treatment planning. Clinicians with psychotherapeutic training were also expected to show more positive attitudes, compared to clinicians without such training.

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[1] The first and fourth author are experienced trainers and implementation coaches of monitoring systems in multiple Flemish mental health centres.

Methods

Participants

The data collection period ran from February 2011 to April 2013. The total sample consisted of 189 clinicians from 11 outpatient and 5 inpatient mental health institutions. Institutions spanned a range of geographic locations across Flanders, Belgium. Almost 25 % of the participants (n = 45) worked in private practices. Two different procedures were followed to collect data. Mail invitations were sent to clinical leaders of five allied mental health institutions, with a request to distribute the questionnaire among their clinicians. Paper versions of the questionnaires were distributed among attendees at seminars, workshops and conferences nationwide. Based on the number of clinicians working in the mail-targeted institutions (approximately 230 clinicians) and the number of paper versions distributed (approximately 180), the estimated survey response rate is approximately 46.1 %. Completed questionnaires were collected immediately after completion—in case of the paper version—or returned by mail. All the participants signed an Informed Consent form, which stated that the collected data could be used for research purposes. Participants' age, gender, clinical experience, level of education, psychotherapeutic training and work setting were assessed via a self-constructed questionnaire. Due to missing item scores, 19 cases were eliminated. The Ethics Committee of the KU Leuven, Belgium, approved the study procedures and aims (S-number: 55700).

Of the respondents, 73 % were female; the average age was 40.27 (SD = 11.6) years and the average level of clinical experience was 11.12 (SD = 8.8) years. The majority of participants (61.2 %) graduated at the master's level and almost 65 % completed counseling or psychotherapeutic training after basic level graduation.[2] Participants' mean age and clinical experience are presented in Table 1. Table 2 highlights the differences in professional characteristics between the participants, organized by gender.

Instruments and Procedure

At the start of this research project, instruments measuring monitoring attitudes had not yet been developed or translated into Dutch. An international literature review was conducted for this reason, resulting in two instruments to be considered for further inspection. Research groups from

Table 1 Clinicians' age and clinical experience (mean, SD and range)

Characteristics	Participants	n	Mean	SD	Range (years)
Age	Total	166	40.3	11.6	23–70
	Women	123	38.7	11.3	24–70
	Men	43	43.6	14.5	23–63
	Missing	4			
Clinical experience	Total	162	11.1	8.8	1–38
	Women	119	10.3	8.5	1–38
	Men	43	13.3	9.2	1–34
	Missing	8			

the University of Wollongong, Australia (Willis et al. 2009) and the University of Western Sydney, Australia (Bowman et al. 2009) independently developed two similar instruments, the OMQ and the Clinicians Readiness for Measuring Outcomes Scale (CReMOS) respectively. The OMQ was developed within a mental health context, whereas the CReMOS was developed within a general health context. Close inspection of the items revealed that the OMQ had a broader scope than the CReMOS, with OMQ items referring to ethical and procedural aspects, user-friendliness, clinical relevancy, skills and knowledge. Due to this broader scope and the fit with clinical realities in mental health contexts, we chose to translate and further investigate the OMQ in this study.

The original OMQ was developed by Willis et al. (2009) and consists of 23 items, with each item to be rated on a 6-point Likert scale, ranging from 'Strongly disagree' to 'Strongly agree'. It comprised two scales, one measuring 'Openness to feedback' and another one measuring a general 'Monitoring attitude'. The 'Openness to feedback' subscale consists of 15 items, of which 6 items are reverse-worded. The 'Monitoring attitude' scale comprises 8 items, all positively worded. The underlying factor structure of the OMQ was never studied in detail (Willis et al. 2009). Cronbach's alpha for the eight 'Openness to feedback' items was 0.87, suggesting good internal consistency. Cronbach's alpha for the remaining items was 0.79, also satisfactory. The mean total OMQ score in the original Australian sample was 95.59 (SD = 14.63). Approval to translate the OMQ was obtained from the original authors.

In a first step, the original OMQ was translated into Dutch. A forward-back translation procedure (WHO, January 22, 2011) was used. First, the original version was translated into Dutch by the first author. Then, the translated version was back-translated into English by three independent experts. Two of these experts were unfamiliar with the monitoring literature and procedures. Major differences between both versions guided adjustments and readaptations to the translated Dutch version. This method of constant comparison

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[2] In Flanders, both bachelor and master's graduates can become psychotherapists. Prior to a 4 year psychotherapy training course, bachelor graduates need to attend a bridging program. Without attending this bridging program, a 4-year counseling course leads to a Counselor certificate. Both groups are subsequently referred to as a group with 'psychotherapeutic training'.

Table 2 Clinicians' professional characteristics (N and %) by gender

Characteristics	Participants	Men (n = 43)		Women (n = 123)		Total (n = 170)	
		N	%	N	%	n	%
Level of education	Bachelor	16	37.2	46	37.4	62	36.5
	Master	27	62.8	77	62.6	104	61.2
	Missing					4	2.4
Therapeutic training	No training	13	30.2	44	35.8	57	33.5
	Counselor	15	34.9	31	25.2	46	27.1
	Psychotherapist	15	34.9	48	39.0	63	37.1
	Missing					4	2.4
Work setting	Inpatient	13	30.2	41	33.3	54	31.8
	Outpatient subsidized	8	18.6	40	32.5	48	28.2
	Private practice	15	34.9	30	24.4	45	26.5
	Other	7	16.3	12	9.8	19	11.2
	Missing					4	2.4

was used as a quality check. After two translation-back-translation cycles, we obtained an acceptable translation.

Data Analysis

All reverse-worded items were recoded prior to the analyses. To test construct validity, confirmatory factor analyses (CFA) were performed by means of LISREL 8.8 (Jöreskog and Sörbom 2012). Due to the ordinal nature of our data and the skewness of some response distributions, a Robust Weighted Least Square estimation method on the polychoric correlations, weighted by the asymptotic variances, was preferred for estimating the CFA model parameters. This approach is motivated by the promising simulation results of Flora and Curran (2004) and Lei (2009) for this type of data. First, we investigated a one-factor model, with all items loading on a general OMQ factor. Second, a two-factor model as proposed by Willis et al. (2009), with 'openness to feedback' and 'general attitude', was examined in order to test whether the power of the two-factor model was large enough to reject a more parsimonious one-factor alternative (Bentler 2007). In a second step, a method factor referring to the reversed-worded items was included in both models. Previous research has shown that reverse-worded items may produce artificial response factors consisting exclusively of negatively worded items (e.g. Podsakoff et al. 2003). This method factor is uncorrelated to the other latent factors. To evaluate model fit, multiple criteria were used (Schweizer 2010): Normed Chi square value, with a value below 2 suggesting a good model fit and below 3 an acceptable fit (Bollen 1989); the comparative fit index (CFI) for fit relative to a null model, with values above 0.95 referring to good model fit and between 0.90 and 0.95 to acceptable fit (Hu and Bentler 1999), the root mean squared error of approximation (RMSEA) for which values below 0.05 were found to indicate a good model fit and values below 0.08 an acceptable

model fit, and the standardized root mean square residual (SRMR) as the standardized difference between the observed and the predicted correlations, for which values below 0.10 refer to acceptable model fit (Kline 2005). To examine internal consistency, the Cronbach's alpha coefficient (Cronbach 1951) was calculated, with α's between 0.70 and 0.90 considered acceptable. To investigate whether OMQ mean scores in our sample differed significantly from the original sample mean scores, a two-tailed independent t test was conducted. Main and interaction effects of gender, level of education, psychotherapeutic training and work setting on OMQ total scores were investigated via multiple ANOVAs. To study the relationship between the interval-scaled variables (age, clinical experience) and the OMQ scores, Pearson correlations were calculated.

Results

Factor Structure

Table 3 summarizes the results of the CFAs. Including a method factor referring to the reverse-worded items led to a

Table 3 Fit indices of CFA-models, OMQ

Model	df	χ^2	χ^2/df	CFI	RMSEA	SRMR
1 OMQ factor	230	611.06	2.66	0.92	0.10	0.10
1 OMQ factor, 1 method factor	223	463.59	2.08	0.95	0.08	0.09
2 OMQ factors	229	587.79	2.57	0.92	0.10	0.10
2 OMQ factors, 1 method factor	222	466.80	2.10	0.95	0.08	0.09

df degrees of freedom, χ^2 normed Chi squared value, *CFI* comparative fit index, *RMSEA* root mean squared error of approximation, *SRMR* standardized root mean square residual

better fit, suggesting that the reverse-worded items caused an additional source of variance that should be taken into account when investigating the construct validity of the OMQ.

In the models with two OMQ factors, the correlation between both factors was very high—0.90 in the model without a method factor and 0.97 in the model with a method factor—indicating that both factors cannot be differentiated empirically. According to the fit indices, the model with one general OMQ factor and a method factor was the best fitting model. Factor loadings are provided in Table 4. Note that the loadings of item 1 and item 9 on the general OMQ factor are low (0.17 for item 1 and 0.25 for item 9). All other items have loadings above 0.30. Removing both items from the model did not result in a better fitting model. For clinical practice, it is easier to work with the total sum score instead of calculating factor scores. We therefore correlated the factor score of the general OMQ factor in the final model with the sum score on the OMQ scale. The correlation equaled 0.97, so that it was sufficiently high to use the sum score as a reasonable proxy for the factor score.

Table 4 Item factor loadings on the model with one OMQ factor and one method factor

Item	General OMQ factor	Method factor
OMQ 1R	0.17	0.48
OMQ 2	0.69	
OMQ 3	0.66	
OMQ 4	0.51	
OMQ 5R	0.29	0.60
OMQ 6	0.75	
OMQ 7	0.78	
OMQ 8	0.60	
OMQ 9	0.25	
OMQ 10R	0.50	0.64
OMQ 11	0.31	
OMQ 12	0.63	
OMQ 13R	0.31	0.72
OMQ 14	0.47	
OMQ 15R	0.38	0.59
OMQ 16	0.51	
OMQ 17	0.64	
OMQ 18	0.61	
OMQ 19	0.66	
OMQ 20	0.61	
OMQ 21R	0.36	0.52
OMQ 22	0.59	
OMQ 23R	0.32	0.60

N = 170

Normative Data and Internal Consistency

The mean OMQ total score in our sample was 98.18 (SD = 11.98), and did not significantly differ from the mean total OMQ score of the Australian sample, -2.59, BCa 95 % CI $(-5.317, 0.137)$, $t(384) = 1.8674$, $p = .06$. Cronbach's alpha for the total OMQ was 0.88, demonstrating a very good internal consistency. This indicates that the OMQ can be used as a reliable measure of clinicians' monitoring attitudes.

Association Between Monitoring Attitude and Clinician Characteristics

Table 5 presents the mean OMQ total scores, grouped by clinicians' characteristics. Statistically significant differences were found at the education level, $F(5, 160) = 4.473$, $p < .001$, psychotherapeutic training, $F(2, 163) = 10.242$, $p < .001$, and work setting, $F(3, 166) = 3.716$, $p < .05$. These results showed that clinicians with master's degrees had significantly higher attitude ratings compared to clinicians with bachelor's degrees. Similarly, clinicians with additional psychotherapeutic training scored higher on the OMQ compared to those without training. With regard to the influence of the work setting, the results indicated that private practitioners reported the most positive attitudes, differing significantly with clinicians in subsidized mental health settings. Furthermore, clinicians working in inpatient treatment settings had better OMQ ratings than those in outpatient services.

More detailed inspection of the sample distribution revealed that there was a significant association between

Table 5 OMQ total scores (M and SD), grouped by clinicians' characteristics

Characteristics	Participants	n	M	SD
Gender	Women	123	97.40	11.81
	Men	43	99.79	11.69
	Total	166	98.02	11.79
Level of education	Bachelor	62	95.06	11.01
	Master	104	99.78	11.94
	Total	166	98.02	11.79
Psychotherapeutic training	No training	56	92.63	11.10
	Counselor	46	100.11	11.29
	Psychotherapist	63	101.37	11.17
	Total	166	98.02	11.79
Work setting	Inpatient	57	97.28	13.10
	Outpatient subsidized	49	95.41	11.12
	Private practice	45	103.02	10.67
	Total	151	98.18	11.98

M mean, *SD* standard deviation

education levels and psychotherapeutic training, $\chi^2(2) = 68.04$, $p < .001$, indicating that clinicians with psychotherapeutic training were more likely to have a master's degree. There also was a significant association between level of education and work setting, $\chi^2(1) = 28.42$, $p < .001$, showing that clinicians with bachelor's degrees were predominantly found in inpatient work settings. To determine the main and interaction effects, we performed an ANOVA with level of education, psychotherapeutic training and work setting as independent variables and OMQ as a dependent variable. The results indicated a main effect of psychotherapeutic training and work setting, but not of education level. We did not find significant interaction effects between these variables. Differences in mean OMQ scores were not significant in terms of gender, $F(1, 164) = 1.314$, *ns.* Neither age, $r = .05$, *ns*, n = 168, nor clinical experience, $r = -.06$, *ns*, n = 162, were significantly correlated with the OMQ scores.

Discussion

In the present study, we investigated the factor structure and internal consistency of the OMQ—an instrument to measure clinicians' monitoring attitudes—among a diverse sample of Flemish mental health practitioners. We then investigated whether clinicians' sociodemographic and professional characteristics influenced their monitoring attitudes.

CFA could not confirm the hypothesized two-factor model with a general attitudinal factor and a factor referring to 'openness to feedback'. A two-factor model with one general attitudinal factor and a method factor referring to the reverse-worded items best fitted our data. In contrast to the proposed differentiation between a general and a specific attitudinal factor by the original authors, our findings in a Belgian sample indicated that the empirical basis for this differentiation might be hazardous. We suggest that future studies in a Belgian sample should use the OMQ total summed score as an indicator of clinicians' general attitude towards monitoring. However, studies in other countries, should take both solutions into account while validating the instrument, to find out which structure seem to be cross-culturally replicable. Several reasons can account for these differences in factor structure. Firstly, the factor structure of the original version was never studied in detail and was mainly based on conceptual grounds (Willis et al. 2009). Secondly, the different factor structure might be related to differences in sample characteristics. Although no significant differences between participant's age, gender and level of clinical experience were found, considerable differences concerning participant's professional role were noted. The original sample comprised

mainly of nurses and social workers (54 %), whereas the sample from the present study consisted mainly of psychotherapists and counselors (61.2 %).

Furthermore, we found that the OMQ could reliably assess clinicians' attitudes toward monitoring. The average OMQ total score in our sample tended to be slightly, but not significantly, higher than the average total score of the original Australian sample. With respect to the relationship between clinicians' sociodemographic and professional characteristics and the OMQ score, three main tendencies should be noted. Firstly, this study replicated the common finding that clinicians' gender or age did not affect their monitoring attitudes. Secondly, basic education levels had no effect on clinicians' attitudes, while psychotherapeutic training did. Clinicians with psychotherapeutic training reported significantly more positive attitudes than those without such training. This might indicate that monitoring attitudes are mainly affected by clinical skills gained during intensive psychotherapeutic or counseling training. These results have important implications for the development of training and implementation approaches. Often, standardized training packages on monitoring instruments focus on the history, rationale, scientific value and clinical importance of monitoring, followed by the technicalities of when and how to complete the measures. Perhaps as much effort should be spent on training clinicians in specific communicative skills. Further research is needed to identify the skills needed to transform measurement data into meaningful insights and collaborative interactions with their clients. Finally, it was somewhat surprising to find that private practitioners showed the most positive attitudes toward monitoring, whereas clinicians in subsidized outpatient settings reported the most negative attitudes. Maybe private practitioners experience more freedom to experiment with innovative methods (and abandon those when they do not answer their needs). Clinicians in subsidized mental health institutions might remain hesitant and wary because of the external (top–down) pressure they experience or anticipate. On the other hand, findings could reflect an important limitation of the recruitment procedure. The majority of private practitioners had been recruited via training seminars, workshops and conferences. This may well yield a self-biased sample that is more open to new innovative ways of working. Remarkably, clinicians from inpatient treatment settings reported higher monitoring attitudes than clinicians from subsidized outpatient settings. Maybe a more intense, multidisciplinary collaboration on a shared patient in inpatient units adds positive elements to the use of feedback. An exploratory study by Dekker (2011) on helpful and hindering monitoring processes indeed identified 'discussing client feedback during team consultations' as a very helpful aspect of monitoring in inpatient settings. More research is needed to better

understand how monitoring affects team cohesion, communication, collaboration and organizational climates. On the other hand, the found setting differences might reflect underlying client differences rather than clinician differences. Outcome measurement is most valuable when significant client change is expected. This is the case for higher functioning clients seen in private practice and acutely unwell clients seen in acute inpatient settings. Many clients seen in outpatient public mental health facilities or in long-term inpatient institutions have fairly stable conditions and high disability. With such populations, clinicians might quite reasonably think that regular outcome monitoring would be unlikely to yield much useful information. This may even raise the possibility that training is not a major predictor of clinician's attitude, but is mostly an artifact of the setting effect. Further research is needed to unravel the potential relationship between client differences and clinicians' monitoring attitude.

Further, findings should be interpreted taking into account major differences in how mental health services are organized in Flanders and Australia. Flemish mental health services only have a short history in outcome and process measurement. So far, data have mainly been used as clinical support tools, and process measurements have received a similar amount of attention as outcome measurements. As yet, there is no experience in using data for benchmarking purposes and dissemination of monitoring instruments relies heavily on voluntary efforts of local team leaders, services managers and individual practitioners. There is no external pressure, incentive or support from financing bodies to routinely collect outcome data. By contrast, Australian mental health care services started using outcome measurements in the early 2000s. Since 2003, outcome measurements have become a mandatory procedure in every mental health institution (Trauer et al. 2009). Dissemination has received extensive financial and managerial input and support and collected data are used both as clinical support tools and as benchmarking tools. It is likely that these differences in monitoring contexts have a major influence on how clinicians perceive monitoring.

Despite the strengths of this study, some aspects limit the generalizability of our findings. An important limitation of the present study is that the used sampling procedure was unlikely to yield a representative sample from the work settings investigated. Further, because of the short history of monitoring in Flemish mental health services, participants had rather limited experience in monitoring practice. In this regard, it could be interesting for a future study to track clinicians' attitudes over time. Particularly since the Flemish government recently (January, 2014) launched an initiative to promote the routine collection of process and outcome data in mental health services. Next, post hoc analysis of sample characteristics showed a dominance of humanistically trained psychotherapists. It is likely that a less biased sample would lead to different results. Finally, the lack of information on non-responders limits the robustness of our interpretation. The risk always exists that responders are more concerned about the issue than non-responders, who may be more apathetic or antagonistic.

Future research should examine other psychometric properties (e.g. test–retest reliability, external validity) of the OMQ. Ultimately, we want to know whether the OMQ can predict actual use of measurement instruments and whether it is sensitive to the effect of training. To improve the use of OMQ in a training and implementation context, it is also important to examine whether individual OMQ scores can be used to identify team members who might benefit from specific training or support. More research is also needed to examine the possibilities of using the OMQ scores at a cross-case level—for example across staff members within an organization—to determine the 'organizational level' of readiness to change (Prochaska et al. 2001). Such information could help in developing, adjusting or differentiating training modules in order to maximally fit with organizational characteristics and clinicians' needs. Finally, we recommend continued research—and development of a measurement instrument—into the influence of clients' monitoring attitudes. Their willingness to collaborate with clinicians in completing monitoring instruments is likely to play an equally important role in the compliance, effectiveness and efficacy of monitoring (Guthrie et al. 2008).

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