Do we ask if we listen?

Shared Decision Making measured by the CQ Index in patients with depression: a correlational study

Background

Shared Decision Making

Shared Decision Making (SDM) is an approach whereby patients and professionals discuss treatment options and 'take steps to build a consensus about the preferred treatment; and that an agreement is reached on the treatment to implement' (Charles, Gafni, & Whelan, 1997). Models are based around sharing information and making choices based on the patient's preferences. Key to the process is equipoise: 'listing the options that are reasonably available, including, where relevant, the option of taking no action' (Elwyn, Edwards, Kinnersley, & Grol, 2000). The risks of the different options are discussed whereby, crucially, the acceptability of the risks as seen by the patient is the central concept. 'Risk communication' is considered to improve informed decision making and contributes to the confidence the patient has in the definitive decision (Edwards & Elwyn, 2001).

SDM has been shown to improve patient satisfaction (Loh, *et al.*, 2007; Swanson, Bastani, Rubenstein, Meredith, & Ford, 2007; Solberg, *et al.*, 2013). It is also related to a number of other positive outcomes: patient participation in care planning (Loh, *et al.*, 2007); treatment adherence (Loh, *et al.*, 2007), care in accordance with treatment guidelines (Clever, *et al.*, 2006); positive effect on symptoms (Clever, *et al.*, 2006), (Loh, *et al.*, 2007). Solberg found that the longer a patient was in treatment, the less SDM he experienced and also suggests that severity of depression could also affect the ability of a patient to engage in SDM (2013).

Crucially, there is a difference between measuring *satisfaction with* or *involvement in* SDM (Clever, *et al.*, 2006). Patient preference plays a role: a patient who does not wish to engage in SDM may score highly as regards to satisfaction if he has not been involved in decision making.

Patient satisfaction is one of the performance indicators measured in the mental health care sector in The Netherlands (along with effectiveness of treatment and support, and safety). The Consumer Qual-

ity Index (CQ-I) measures patient satisfaction and was developed for Dutch mental health care providers by the Trimbos Institute and has been proven to be valid and reliable (Wijngaarden, Kok, & Sixma, 2008). In 2012, a short version of the instrument was developed in order to increase its utility in clinical practice (Boonen, Appelman, Koolman, Otter, & Zuidgeest, 2012). The instrument is widely used by mental health organisations to measure the quality of the service, as experienced by service users. The outcomes are also used as a means to compare organisations (Stichting Benchmark, 2016).

The CQ-I-sv is used at the end of the treatment period and encompasses client opinion on communication with professional, fulfilment of wishes, receipt of information, freedom of choice, evaluation of treatment, availability of the professional and general evaluation. The opinion of the researcher is that the first five of these subscales particularly overlap the principles of SDM.

Depression

Major depression is a common mental health problem in The Netherlands: results from the 2011 NEMESIS-2 study suggest a prevalence for major depressive disorder and dysthymia of 708,900 and an incidence of 280,000 (de Graaf, ten Have, & van Dorsselaer, 2010). Five thousand five hundred of these patients are hospitalised as a result of the depression. Worldwide, depression is ranked as the fourth leading cause of disability in the Global Burden of Disease Study (Murray *et al.*, 2012).

Depression is a mood disorder which is further characterised by '*a diminished ability to think or concentrate, or indecisiveness*' (American Psychiatric Association, 2000). The Dutch multidisciplinary guideline for treatment of depression states that all 'decisions about the treatment plan should be taken with the patient' (Trimbos-instituut, 2013). A further recommendation is that the treatment team supports the patient's autonomy and that treatment decisions are taken together on an equal basis. How patients and professionals achieve these aims is left up to them. The cognitive impairments mentioned above provide a challenge when applying SDM which is aimed at patients discussing and deciding courses of treatment with professionals.

It is unknown whether the CQ-I-sv measures the amount of SDM experienced. Once this is known, the outcome of the CQ-I-sv could also be used to give an indication of the extent to which patients have experienced SDM during their treatment and thus whether the treatment has followed the treatment guideline and the principle that decisions are taken together with the patient.

This study aims to determine whether the CQ-Index (short version) measures the extent of shared decision making experienced by patients in treatment for a depressive disorder. A further objective is to

study the effect of severity of depression and duration of treatment on the relationship between the two instruments.

Method

A correlational study was carried out from September - October 2015 in a Mental Health Organisation in The Netherlands (GGZ Noord Holland Noord), focusing on a centre for treatment of depression and anxiety in Alkmaar.

Participants (N = 119) were adults with the main diagnoses major depressive disorder (single episode), major depressive disorder (recurrent), dysthymia or depressive disorder not otherwise specified[1] who spoke Dutch and had consented to take part in research. Participants in the intake-phase were excluded as treatment decisions are generally taken immediately following this phase. Participants with co-morbid conditions were not excluded from involvement in the study.

The participants were contacted by post and/or by e-mail and were requested to complete a questionnaire either on paper or via an internet link. The participants were asked to complete three instruments: the relevant subscales of the CQ-I-sv, the Combined Outcome Measure for Risk Communication and Treatment Decision Making Effectiveness (COMRADE) and the Quick Inventory of Depressive Symptoms Self Report (QIDS-SR). The instruments are discussed below.

Validity

Research by Edwards (2009) identified a number of strategies to improve the response of postal and electronic questionnaires and calculated the odds ratio with which each strategy improves the response. The following strategies were used in this research: a teaser on the envelope (OR: 3.08), follow-up and provision of a second copy of the questionnaire at the follow-up (respectively OR 1.35 and OR 1.46).

The study uses a sample large enough (>115) to assure sufficient statistical power and therefore statistical conclusion validity (Faul, Erdfelder, Lang, & Buchner, 2009).

1 CQ-I-sdm

The five subscales of the CQ-I-sv relevant to the concept of SDM, as perceived by the researcher, were used. These subscales were: 'communication with professional', 'fulfilment of wishes', 'receipt of information', 'freedom of choice', 'evaluation of treatment'. The subscales 'availability of the professional' and 'general evaluation' were considered less important to the research question and were omitted in order to

[1] DSM codes: 296.2, 296.3, 300.4, 311

Figure 1
Measurement levels used and internal consistency in the CQ-I-sdm

Subscale	Measurement level	Cronbach's Alpha
Communication with professional	Ordinal (2 questions) Nominal (1 question)	0.87
Fulfillment of wishes	Nominal	0.78
Receipt of information	Ordinal (3 point scale)	0.87
Freedom of choice	Ordinal (4 point scale)	0.69
Evaluation of treatment	Ordinal (4 point scale)	0.92

Figure 2
Internal consistency of Dutch translation of the COMRADE (van der Krieke, *et al.*, 2013)

	Cronbach's Alpha
COMRADE overall	0.95
Satisfaction with communication	0.90
Confidence in the decision	0.94

lessen the burden for participants. For clarity, the five subscales used in this study are collectively referred to as CQ-I-sdm.

The content and internal consistency of the subscales of the CQ-I-sdm are shown in figure 1.
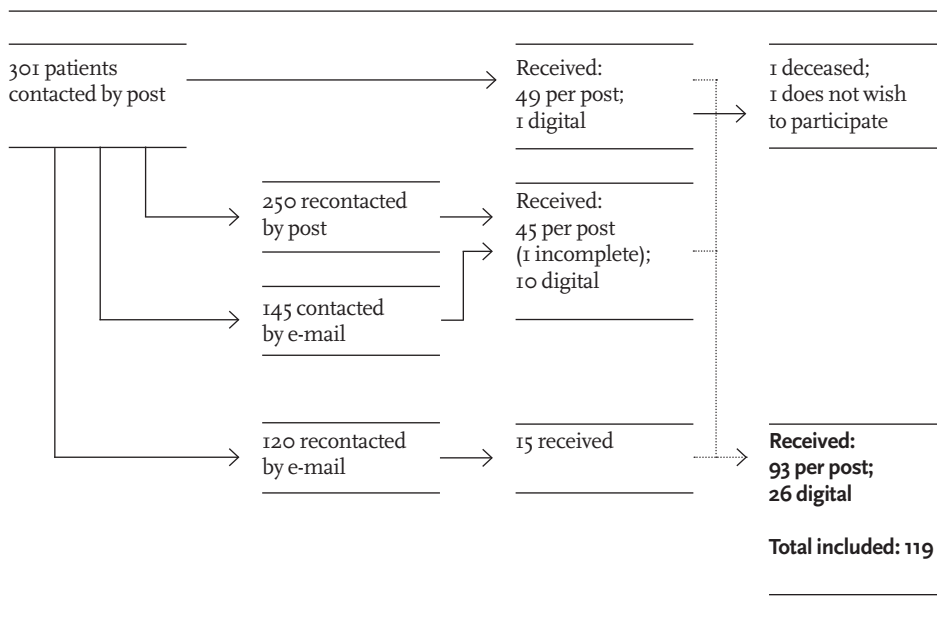
2 COMRADE

The COMRADE (Edwards, *et al.*, 2003) was chosen to measure the degree to which patients experienced SDM because of its strong construct validity. The instrument was developed using existing instruments and information gained from systematic literature research and focus groups. The 20 questions are divided into two subscales: 'satisfaction with communication' and 'confidence in the decision'. The measurement level is ordinal using a 5-point scale. The instrument has been translated into Dutch using the forward-backward method and has been used in a recent Dutch study (van der Krieke, *et al.*, 2013). Cronbach's alpha was used to measure the internal consistency of the translated instrument (N = 68) and the results are shown in figure 2.

3 The Quick Inventory of depressive symptomatology, self-report (QIDS-SR)

The QIDS-SR (Rush, *et al.*, 2003) measures the severity of depressive symptoms over the preceding seven days and comprises 16 ordinal

Figure 3
Participant inclusion

| 301 patients contacted by post | → | Received: 49 per post; 1 digital | ⋯ → | 1 deceased; 1 does not wish to participate |

| 250 recontacted by post | → | Received: 45 per post (1 incomplete); 10 digital |

| 145 contacted by e-mail |

| 120 recontacted by e-mail | → | 15 received | ⋯ → | **Received: 93 per post; 26 digital** |

Total included: 119

questions (4 point scale). It was developed on the basis of the IDS-SR and focusses on the 9 criteria domains of the DSM IV. The QIDS-SR correlates strongly with the IDS-SR (c = 0.83). This study uses the QIDS-SR in order to reduce the burden on the participants.

4 *Duration of treatment*
The time between the date at which the depressive disorder was stated as the main diagnosis and the date of inclusion in the study (1 September 2014) was calculated to obtain the duration of treatment using information from patient files.

Data analysis
The Spearman Rank order was used to study the relationship between the COMRADE and CQ-I-sdm as the data from neither instrument has a normal distribution as calculated using the Kolmogorov-Smirnov en Shapiro-Wilk tests and P-P plots.
In the case of a correlation between the data from the two instruments and the duration of treatment or severity of depression, a hierarchical regression analysis was performed with the COMRADE as dependent variable, the severity of depression or duration of treatment was added as independent variable in the first step and the CQ-I-sdm was added in the second step of the analysis.

Results

Response
119 patient responses were included in the study. Up to 10% missing values were assumed to be missing at random and were ignored. The inclusion is shown in figure 3.

Demographics
The demographic characteristics of the participants can be found in figure 4.
Two thirds of the participants were female, just over half of the respondents was between 45 and 69 years old and the majority had a recurrent depressive disorder. A third of participants were in the first year of their treatment.

Correlation cq-i-sdm and comrade
Using the Spearman Rank Order, the correlations between the subscales of the cq-i-sdm and the total score of the comrade were calculated. Subsequently, the outcomes on the 2 subscales of the comrade were correlated with the subscales of the cq-i-sdm. There was a strong positive statistically significant correlation between the total scores of the cq-i-sdm and the total score of the comrade ($r = .805$, $p < .01$). Individually, all subscales are shown to have statistically significant correlations, the highest being 'freedom of choice' ($r = .705$) and the lowest 'receipt of information' ($r = .367$). An overview of all correlations for is given in table 4. The r-value gives the strength of the correlation; the p-value gives the level of significance.
The negative correlations between sdm and the duration of treatment which were found by Solberg (2013) were not replicated in this study. There are statistically significant negative correlations between the severity of the depression and both the cq-i-sdm ($r = -.388$, $p < .001$) and the comrade ($r = -.316$, $p < .001$) suggesting that severity of depression is a predictor of lower scores on both the cq-i-sdm and the comrade. The results are shown in figure 5.
Since only depression was significantly related to the comrade, we conducted the hierarchical regression analysis with severity of depression in step 1 and the cqi-sdm in step 2. In this way we analyzed the relationship of de cqi-sdm with the comrade, while controlling for the severity of the depressive symptoms.
Severity of depression accounts for 15% of the variation in the comrade scores ($R^2 = .154$, adjusted $R^2 = .147$). Inclusion of the cq-i-sdm explains a further 53% of the variation (R^2 change $= .529$, $F(191,82)$, $p < .001$). The adjusted R^2 values suggest that the model generalises well (figure 6).

Figure 4
Correlations between the COMRADE en CQ-I-sdm

	Total COMRADE		Satisfaction with communication		Confidence in the decision	
	r	p	r	p	r	p
Total CQ-I-sdm communication	.805	.000*	.786	.000*	.772	.000*
with professional	.480	.000*	.459	.000*	.484	.000*
fulfilment of wishes	.692	.000*	.654	.000*	.687	.000*
receipt of information	.367	.000*	.321	.000*	.401	.000*
freedom of choice	.705	.000*	.721	.000*	.638	.000*
evaluation of treatment	.482	.000*	.442	.000*	.500	.000*

* correlation is significant at the 0.001 level; $p < 0.001$

Figure 5
Duration of treatment and severity of depression: correlations with instruments

Instrument	Subscale	Duration		Severity	
		r	p	r	p
CQI-I-sdm		.007	.937	-.388	.000**
	Communication with professional	-.050	.594	-.208	.024**
	Fulfilment of wishes	-.047	.615	-.319	.000*
	Receipt of information	.020	.829	-.290	.002**
	Freedom of choice	.069	.460	-.309	.001*
	Evaluation of treatment	.044	.643	-.490	.000*
COMRADE		.016	.868	-.316	.000*
	Satisfaction with communication	.045	.634	-.307	.001*
	Confidence in the decision	-.024	.800	-.327	.000*

*$p < 0.01$; ** $p < 0.05$ level

Figure 6
Regression model summary with COMRADE as dependant variable

Model	R	R²	Adjusted R²	R² change	F change	Sig. F change
1	.393a	.154	.147	.154	21.184	.000
2	.826b	.683	.678	.529	191.824	.000

a predictors: (constant) severity of depression
b predictors: (constant), severity of depression (total score QIDS), CQ-I-sdm (total score)

Discussion

The aim of the study was to examine the extent to which the outcome of the CQ-I-sdm reflects the amount of SDM that a patient experienced and to what extent the relationship is affected by duration of treatment and severity of depression.

Overall, the subscales of the CQ-I relating to SDM are significantly positively correlated with the COMRADE, measuring the degree to which shared decision making was experienced by patients. The CQ-I was designed to measure the patient experience and it appears that the instrument measures the amount of SDM a patient experiences during treatment. A number of correlations and their implications are further discussed below.

Two subscales of the CQ-I-sdm have a particularly strong positive correlation with the outcome of the COMRADE: 'Fulfilment of wishes' ($r = .692$, $p <.001$) and 'freedom of choice' ($r = .705$, $p <.001$). This seems to suggest that engaging in shared decision making can increase the patient's confidence that he has had freedom to make choices in the treatment and that his wishes have been essential in the decision making process. The strong correlation between the subscales 'freedom of choice' (CQ-I-sdm) and 'satisfaction with communication' (COMRADE) ($r = .721$, $p <.001$) would appear to support the view that patients are keen to achieve a level of communication with the professional based on the choices available and allowing them to make decisions as to which treatment option is best suited to them.

Both the concepts 'fulfilment of wishes' and 'freedom of choice' are a central part of SDM: patient's preferences (or wishes) are key to the decision making process and risk communication over the different treatment options, including the option of no treatment, encompasses not just the choices a patient can make but also what they find important.

The subscale 'receipt of information' is relatively weakly correlated with the COMRADE ($r = .397$, $p <.001$). In a paternalistic relationship (Bloem, 2011) in which the patient is the consumer, patients may be satisfied by communication wherein the professional explains a number of treatment options and the patient does not necessarily take the final decision. Within SDM, patients and professionals communicate on a basis of equality as both have information to share, which will affect the suitability of a treatment option.

Severity of depression

The fact that depression affects the cognitive abilities of sufferers is reflected in the negative correlation between the severity of the depressive symptoms and the outcomes of both the COMRADE and the CQ-I-sdm. Patients with severe depressive symptoms may feel unable

to communicate effectively with the professional and make shared decisions on the treatment plan.

When corrected for severity, the CQ-I-sdm has a predictive value for the experience of SDM as measured by the COMRADE. This implies that the CQ-I-sdm measures the extent of SDM experienced by patients (not just their satisfaction about SDM) and that this relationship is unaffected by the severity of depression suffered by the patient.

Duration of treatment

No significant correlations were found between the duration of treatment and either instrument. For this reason, regression analysis was not carried out to determine the effect of duration of treatment on the correlations between the CQ-I-sdm and the COMRADE. This may be explained by the fact that duration was stratified in this study: 0-12 months; 12-24 months; 24-36 months; more than 36 months. In further studies it would be advisable to use the actual length of treatment.

Weaknesses of the study

The patients in treatment by just one of the centres for depression were contacted, it is anticipated that this centre is representative for other such treatment centres within the organisation. It is expected that the results are valid for other teams treating patients with depression. Replication can confirm this.

The study may have been affected by maturation bias: the duration of treatment was calculated at the moment of inclusion, not at the moment the patient completed the instruments. The maximum difference is 3 months calculated from the moment of inclusion to the last response received. This may explain why Solberg's findings were not replicated in this study

Five subscales of the CQ-I-sv were used as opposed to the instrument as a whole which may threaten the internal validity of the study. Future research should make use of a factor analysis to study the internal consistency of the shorter instrument referred to as the CQ-I-sdm.

This study focusses solely on depressive disorders and does not take into account that a patient may have been treated for other disorders before their main diagnosis was changed to a depressive disorder. This could create an information bias as patients may have been in treatment for longer than the duration calculated in this study suggests.

Co-morbid conditions were not taken into account. It is possible that the existence of other diagnoses may have an effect on the experience of the patient with SDM.

Conclusion

The CQ-I-sv is a widely used instrument within the Dutch mental health system providing information on how consumers value the care they received. The strong correlations with the COMRADE suggest that it is a suitable instrument with which to indicate the extent to which the patient has engaged in shared decision making with the care professionals. Whether training professionals and supporting patients in the application of SDM would increase the outcome of the CQ-I-sv, is an interesting question which would lend itself to further research.

This study raises questions about the use of the CQ-I-sv as an instrument with which to compare organisations. Since the instrument is affected by the severity of the depressive symptomatology, comparisons and benchmarking need to take this into account. The practical implications of this need to be further studied.

The severity of depressive symptoms has an effect on the outcome of the CQ-I-sdm and the COMRADE: patients with more severe depression experience less SDM. Future research should examine this further to explore how to optimise the communication between these patients and the professional.

A possibility is that SDM needs to be tailored to the needs and capabilities of a patient, taking into account fluctuation in the severity of the depression in order to improve their confidence in the decision at moments when they are most vulnerable.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders; 4th text revision*. Washington DC: American Psychiatric Association.

Bloem, B. (Auteur), & TEDx (Regisseur). (2011). *From God to Guide* [Film]. Opgehaald van http://tedxnijmegen.nl/2011/04/tedxmaastricht-talk-bas-bloem/

Boonen, L., Appelman, M., Koolman, X., Otter, B.-J., & Zuidgeest, M. (2012). *Pilot GGZ 2011-2012: Online afnemen van cliëntervarignen binnen de ROM cyclus*. Den Haag: Strategies in Regulated Markets (SiRM).

Charles, C., Gafni, A., & Whelan, T. (1997). Shared decision-making in the medical encounter: what does it mean? (or it takes at least two to tango). *Social Science & Medicine*, 681-692.

Clever, S., Ford, D., Rubenstein, L., Rost, K., Meredith, L., Sherborne, C., Cooper, L. (2006). Primary care patients' involvement in decision-making is associated with improvement in depression. *Medical Care*, 398-404.

Curtis, L., Wells, S., Penney, D., Ghose, S., Mistler, L., Mahone, I., Lesko, S. (2010). Pushing the envelope: shared decision making in mental health. *Psychiatric Rehabilitation Journal*, 14-22.

de Graaf, R., ten Have, M., & van Dorsselaer, S. (2010). *De psychische gezondheid van de Nederlandse bevolking. NEMESIS-2: Opzet en eerste resultaten*. Utrecht: Trimbos-Instituut.

Edwards, A., & Elwyn, G. (2001). Understanding risk, and lessons for clinical risk communication about treatment preferences. *International Journal for Quality in Healthcare*, 9-13.

Edwards, A., Elwyn, G., Hood, K., Robling, M., Atwell, C., Holmes-Rovner, M., Russel, I. (2003). The development of COMRADE - a patient-based outcome measure to evaluate the effectiveness of risk communication and treatment decision making in consultations. *Patient Education and Counselling*, 311-322.

Elwyn, G., Edwards, A., Kinnersley, P., & Grol, R. (2000). Shared decision making and the concept of equipoise: the competences of involving patients in healthcare choices. *British Journal of General Practice*, 892-899.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2009). Statistical power analysis using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 1149-1160.

Loh, A., Simon, D., Wills, C., Kriston, L., Niebling, W., & Härter, M. (2007). The effects of a shared decision-making intervention in primary care of depression: a cluster randomized trial. *Patient Education and Counselling*, 324-332.

Murray, C., Vos, T., Lozano, R., Naghavi, M., Flaxman, A., Michaud, C., & et al. (2012). Disability adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 380.

Rijksoverheid. (2015). *Agenda GGZ voor gepast gebruik en transparantie*. Den Haag: Rijksoverheid.

Rush, A., Trivedi, M., Ibrahim, H., Carmody, T., Arnow, B., & Klein, D. (2003). The 16-item Quick inventory of depressive symptomatology (QIDS), clinician rating (QIDS), and self-report (QIDS-SR): a psychometric evaluation in patients with chronic major depression. *Biological Psychiatry*, 573-583.

Smit, F., Vlasveld, M., Beekman, A., Cuijpers, P., Schroevers, R., Ruiter, M., & Boon, B. (2013). *Depressie preventie: stand van zaken, nieuwe richtingen*. Utrecht: Trimbos Instituut.

Solberg, L., Crain, A., Rubenstein, L., Unützer, J., Whitebird, R., & Beck, A. (2013). How much shared decision making occurs in usual primary care of depression? *Journal of the American Board of Family Medicine*, 199-208.

Stichting Benchmark. (2016, April). *www.sbggz.nl*. Retrieved from www.sbggz.nl

Swanson, K., Bastani, R., Rubenstein, L., Meredith, L., & Ford, D. (2007). Effect of mental health care and shared decision making on patient satisfaction in a community sample of patients with depression. *Medical Care Research and Review*, 416-430.

Trimbos-instituut. (2013). *Multidisciplinaire Richtlijn Depressie*. Utrecht: Trimbos-instituut.

van der Krieke, L., Emerencia, A., Boonstra, N., Wunderink, L., de Jonge, P., & Sytema, S. (2013). A web-based tool to support shared decision making for people with a psychotic disorder: Randomized controlled trial and prcess evaluation. *Journal of Medical Internet Research*, 216.

Vektis. (2015, oktober 8). *www.zorgprismapubliek.nl/inofmratie-over/geestelijke-gezondheidszorg*. Retrieved may 13, 2016, from www.zorgprismapubliek.nl.

Wijngaarden, B., Kok, I., & Sixma, H. (2008). De bruikbaarheid van een CQ-index voor de GGZ, verslavingszorg en gehandicaptenzorg: eerste bevindingen. *Tijdschrift voor Gezondheidswetenschappen*, 463-470.

Abstract

Aim The aim is to examine the extent to which the outcome of the cq-Index reflects the amount of Shared Decision Making a patient experiences and to what extent the relationship is affected by duration of treatment and severity of depression.

Method Subjects (n = 119) were patients with depressive disorder as main diagnosis. Correlations were calculated between the relevant subscales of the cq-Index and the COMRADE (Spearman Rank Order), and between these instruments and the QIDS-SR and the duration of treatment. A hierarchical regression analysis was performed in the case of significant correlations to further understand the relationship between the cq-Index and the COMRADE.

Results The cq-Index and the COMRADE show significant positive correlations (r = .805, p <.001). The severity of the depression is inversely correlated with the outcomes of both instruments. Severity accounts for 15% of the variation in the COMRADE scores (R^2 = .154). Inclusion of the CQ-I-sdm in the second step of the hierarchical regression analysis explains a further 53% of the variation (R^2 change = .529, $F_{(191,82)}$)

Conclusion The cq-Index indicates the extent to which patients have experienced sdm. The predictive value of the cq-Index (short version) for sdm is unaffected by the severity of depression.

Keywords 'Shared decision making', 'cq-Index', 'depression'