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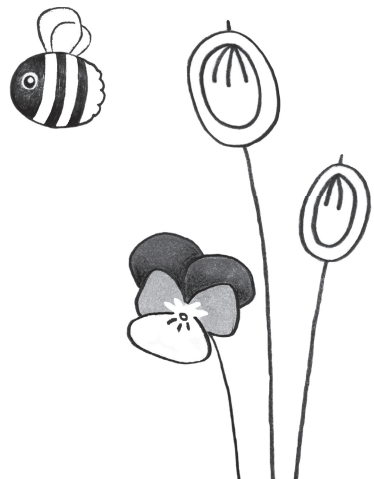
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Field-testing the Euro-MCD Instrument: Important outcomes according to participants before and after moral case deliberation

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ABSTRACT

Introduction: Ethics support services like moral case deliberation (MCD) intend to support healthcare professionals in ethically difficult situations. To assess outcomes of MCD, the Euro-MCD Instrument has been developed. Field studies to test this instrument are needed and have been conducted, examining important outcomes before MCD participation and experienced outcomes. The current study aimed to 1) describe how participants' perceive the importance of MCD outcomes *after* MCD; 2) compare these perceptions with those *before* MCD participation; and 3) test the factor structure of these outcomes.

Methods: Swedish, Norwegian and Dutch healthcare professionals rated the importance of outcomes in the Euro-MCD Instrument after four and eight MCDs. Ratings were compared with those before MCD participation using paired and independent samples t-tests. The factor structure was tested using exploratory factor analyses.

Results: After four and eight MCDs, 443 respectively 247 respondents completed the instrument. More than 69% rated all MCD outcomes as 'quite' or 'very' important, especially outcomes from Enhanced collaboration, Improved moral reflexivity and Improved moral attitude. Significant differences for 16 outcomes regarding ratings before and after MCD participation were not considered meaningful. Factor analyses suggested three categories, which seemingly resemble the domains Improved moral reflexivity, Enhanced collaboration and a combination of Improved moral attitude and Enhanced emotional support.

Conclusions: After participation in MCDs, respondents confirmed the importance of outcomes in the Euro-MCD Instrument. The question on perceived importance and the categorization of outcomes need reconsideration. The revised instrument will be presented elsewhere, based on all field studies and theoretical reflections.

BACKGROUND

In the past decades, ethics support services have rapidly been developed in many healthcare settings and institutions (Molewijk et al. 2017). These services aim to support healthcare professionals in dealing with ethical dilemmas and situations in which they are uncertain or disagree about what good care would entail. In several European healthcare settings, this support is provided in the form of moral case deliberations (MCD), in which participants jointly elaborate on an ethically difficult situation under guidance of a facilitator (Molewijk et al. 2008). The increasing implementation of MCD gives reason to study what outcomes MCD leads to. Does it – according to its goals – indeed support healthcare professionals in dealing with ethically difficult situations, and in what way? Insights in how healthcare professionals – the actual end-users – benefit (or not) from participation in MCD is needed to further improve the MCD as a supportive service for them and to show its value and quality to healthcare organizations that want to implement it (Craig & May 2006; Wäscher et al. 2017; Schildmann et al. 2019). As stated by Craig and May (2006), there is a need for evaluation research notwithstanding the inherent and theoretical benefit of CES: 'As bioethicists, we are well aware of the theoretical goods such [CES] services might achieve, but should insist on evidence regarding the effectiveness of ethics consultation relative to these goods'.

Several evaluation studies showed – in general – positive results (Weidema et al. 2013;2015; Hem et al. 2015; Lillemoen & Pedersen 2015; Silén et al. 2015; Janssens et al. 2016; Seekles et al. 2016; Spijkerboer et al. 2017; Bartholdson et al. 2018; Haan et al. 2018; De Snoo-Trimp et al. 2019). These studies all focused on the satisfaction of healthcare professionals regarding the sessions themselves as well as their experiences beyond MCD in daily practice, with use of self-reported questionnaires, interviews and focus groups (Haan et al. 2018). For instance, in the study by Bartholdson et al. (2018), participants of ethics case reflection sessions (similar to MCD) were interviewed about enablers and barriers for clarifying perspectives, based on their experiences from attending the sessions. In another study (Weidema et al. 2013), healthcare professionals completed an evaluation questionnaire after each MCD session in which they had to rate the quality of the session and related elements of the session like atmosphere and relevance of the moral issue. In the review by Haan et al. (2018), empirical evidence for impact of MCD was systematically studied. They concluded that, in the included studies, 'most reported changes were considered positive'. Notwithstanding the positive findings, evaluation research in MCD and other types of clinical ethics support is still an underdeveloped area, as only few systematic comparable research studies have been done and only few structural evaluation tools exist (Haan et al. 2018; Schildmann

et al. 2019). Schildmann et al. (2019) recently described that, despite the increasing attention for quality of CES services, 'there has been a paucity of evidence on the outcomes of CES [services], and considerable controversy regarding the contribution of CES [services] to clinical practice'. Hence, there is a need for thorough and systematic research on methods for MCD evaluation.

In this evaluation research, it is important to give attention to the perspectives of participants. In the end, they are the users of this CES service. It would make no sense – for instance – to evaluate such a service only based on what clinical ethicists or managers would consider as important outcomes, because it might well be that a CES service leads to these outcomes while healthcare professionals might still not feel supported in their daily morally-challenging practice. Information about what outcomes participants define as important could further be used to tailor the implementation and the content of the CES service to participants' needs and expectations. Craig and May (2006) already warned for the danger of evaluating CES with inappropriate criteria like objective and predetermined standards or solely satisfaction rates. A bottom-up approach to evaluation involving active involvement of relevant stakeholders has been recommended (Schildmann et al. 2013; Wäscher et al. 2017). Therefore, we are interested in input from MCD participants working in healthcare practice here: how do they think about the importance of (possible) outcomes of MCD? As a response to the needs for systematic CES evaluation research, and the lack of focus on participants' perspectives on outcomes in the field of MCD, the Euro-MCD Instrument was developed (Svantesson et al. 2014).

The Euro-MCD Instrument

The Euro-MCD Instrument aims to measure outcomes of MCD by presenting 26 possible outcomes and assessing *perceptions of importance* and self-reported *experiences* of these outcomes during the sessions and in daily practice according to participants (Svantesson et al. 2014). It further contains an open question asking for possible important outcomes according to the respondents and a question to rank the five most important outcomes from the list. The instrument was developed in a comprehensive and systematic process including literature review, a Delphi expert-panel from various countries and content validity testing in the Netherlands, Norway and Sweden. The developers considered participants' perceptions of importance as an essential step in further validating the instrument: 'the specific context should have a say in which specific goals and outcomes of MCD are important' (Svantesson et al. 2014). For this, further validation in field studies was said to be needed.

Since 2014, several field studies have been conducted in Sweden, Norway and the Netherlands, using the Euro-MCD Instrument to assess what outcomes healthcare professionals perceive as important before participation in MCD (De Snoo-Trimp et al. 2017; Svantesson et al. 2019) and what outcomes they experience during the sessions and afterwards in daily practice (De Snoo-Trimp et al. 2019). In the latter study, factor analyses were performed to examine which outcomes highly correlate with each other and can be considered one domain.

However, the factor structure of MCD outcomes regarding their perceived importance has not yet been examined. This is needed to gain additional insight in possible categorization of outcomes, because correlations among the various outcomes might be different when respondents rate importance of outcomes instead of whether (or not) they experienced the outcomes. In the Euro-MCD Instrument, the 26 possible outcomes were categorized into six domains: 1) Enhanced emotional support; 2) Enhanced collaboration; 3) Improved moral reflexivity; 4) Improved moral attitude; 5) Impact on organizational level and 6) Concrete results. This categorization was based on theoretical thinking by the Euro-MCD research team and the Delphi panel (Svantesson et al. 2014). It is important to get empirical evidence about the structure of the data and explore meaningful dimensions. Furthermore, factor analysis informs about possible item reduction, i.e. deletion of outcomes which do not correlate with any other outcomes (De Vet et al. 2011).

To contribute to further validation of the Euro-MCD Instrument, the current study has three aims: 1) to examine how MCD participants perceive the importance of MCD outcomes *after* participating in MCD sessions; 2) to compare these perceptions with the perceived importance asked *before* participating in MCD sessions; and 3) to test the factor structure of these outcomes to further validate the instrument.

METHODS

Design

This quantitative study had a descriptive and comparative design.

Sampling and data collection

The Euro-MCD Instrument (Svantesson et al. 2014) was distributed among healthcare professionals in various healthcare settings in Sweden, Norway and the Netherlands. These healthcare professionals were recruited by convenience sampling of healthcare

institutions that planned to organize a series of four to eight MCDs on a monthly basis. They were invited to complete the instrument after participating in 4 (T.1) and after 8 (T.2) MCD sessions. The time between completing T.0 and T.2 was for most respondents approximately 9 months. The Euro-MCD Instrument was distributed at T.0 in 34 institutions, at T.1 in 30 and at T.2 in 25 institutions, as shown in the Appendix. The questionnaire was distributed on paper or by e-mail in Sweden and the Netherlands, and via a web-based questionnaire in Norway. A part of the responses to the instrument concerning perceived importance at T.0 and more details on data collection for T.0 have been published before (De Snoo-Trimp et al. 2017; Svantesson et al. 2019).

The Euro-MCD Instrument

As described in the Introduction, the Euro-MCD Instrument is a questionnaire containing 26 possible outcomes of MCD and asks for each one to rate the perceived importance and/or experience. The rating for perceived importance ('How important is the outcome to you?') concerns a 1-4 point Likert scale: 1 'Not important'; 2 'Somewhat important'; 3 'Quite important' and 4 'Very important'. The answer option 'Cannot take stand' can also be chosen. The results for the question on experience are published elsewhere (De Snoo-Trimp et al. 2019).

Analysis of the data

Ratings regarding perceived importance were descriptively analyzed using Statistical Package for Social Sciences (SPSS), version 22, to present percentages for each answer option at both T.1 and T.2, and T.0. To compare perceptions of importance after MCD participation (T.1/T.2) with perceptions before (T.0), ratings were compared with paired samples t-tests for individuals who completed both T.0, T.1 and/or T.2, considering a p-value of <0.05 to be statistically significant. Independent samples t-tests were also performed to compare the (independent) group of respondents who completed only T.0 with the group who completed only T.1 and/or T.2. As the ratings were not normally distributed, Wilcoxon signed-rank test and chi-square tests were used.

To examine the factor structure of the Euro-MCD Instrument, exploratory factor analyses were performed to search unprejudiced for correlations between the 26 Euro-MCD items. We looked at the Eigenvalues and scree plots, but also explored a possible classification of the data (the factor structure) that fits on the data both before (T.0) and after (T.1/T.2) MCD participation. Data from T.1 and T.2 (i.e. perceptions *after* participation) was merged in order to obtain sufficient power for comparing ratings before and after MCD participation and for the factor analyses.

We preferred to perform Exploratory Factor Analyses rather than Confirmatory Factor Analyses since the original six domains of items were loosely defined and we assumed that it was highly uncertain that these six domains would be confirmed by factor analyses. Therefore, we wanted to start as open as possible in looking for a factor structure that fits the responses of participants' perceptions of importance both before as well as after MCD participation.

From respondents who completed both T.1 and T.2 (N=129), their answers at T.2 were included in the analyses, because at T.2, they had gained more experience with MCD sessions, and based their assessment of items on a more extended and robust practice, thus covering also the sessions they had experienced when completing T.1.

Ethical considerations

Questionnaires were processed anonymously and participation was on a voluntary basis. At the start of the field study in Sweden, an advisory statement including “no objection to this study” was made by the Swedish Regional Ethical Review Board (dnr 2012/34). This statement was appropriate for Norway as well to perform the study, while the Norwegian Social Science Data Service was informed about the study. In the Netherlands, the Ethical Review Board was informed about the study and it was judged as not requiring further ethical review by law (2017.612).

RESULTS

The Euro-MCD Instrument was completed after participation in 4 MCD sessions (T.1) by 443 healthcare professionals and after 8 sessions (T.2) by 247 healthcare professionals. Before MCD participation (T.0), 756 professionals completed the instrument, of which 273 healthcare professionals completed it also after MCD participation (T.1 and/or T.2). The characteristics of respondents including distributions over countries and healthcare domains are presented in the Appendix. In this section, the perceptions on important items at T.1 and T.2 will first be described, continued by a comparison with perceptions at T.0 and the results regarding the factor structure of the items.

Table 1 Perceived importance of MCD outcomes before and after participation

Question: How important is the outcome to you?		Not	Somewhat	Quite	Very	More or less important at T1/T.2 than T.0? ²	
		% of respondents per answer option					
1	Develops my skills to analyze ethical difficult situations	before after	1 2	8 16	47 47	44 35	LESS* ^Δ
2	More open communication among co-workers	before after	0 1	4 8	34 41	62 50	LESS* ^Δ
3	Consensus is gained amongst co-workers in how to manage the situation	before after ¹	2 5	10 17	46 46	42 35	LESS* ^Δ
4	Enables me to better manage the stress from the ethical situation	before after ¹	4 1	20 13	44 49	37 36	LESS ^Δ
5	Contributes to the development of practice/policies in the workplace	before after ¹	2 4	18 21	47 47	33 28	
6	Gives me more courage to express my ethical standpoint	before after ¹	4 5	21 20	47 43	28 32	
7	I feel more secure to express doubts or uncertainty regarding difficult situations	before after ¹	4 4	19 18	43 44	34 34	
8	Better mutual understanding of each other's reasoning and acting	before after	0 1	6 11	40 43	54 45	LESS* ^Δ
9	I see the situation from different perspectives	before after ¹	0 1	9 15	44 47	47 36	LESS* ^Δ
10	I and my co-workers become more aware of recurring situations	before after ¹	1 1	10 16	47 46	42 37	LESS ^Δ
11	Increases my awareness of the complexity of the situation	before after ¹	2 2	17 17	46 48	35 33	
12	Enhances my understanding of ethical theories	before after ¹	3 5	21 26	46 43	30 26	LESS ^Δ
13	Enables to decide on concrete actions to manage the situation	before after ¹	1 2	6 16	44 48	48 34	LESS* ^Δ
14	Greater opportunity for everyone to have their say	before after ¹	3 1	16 16	43 45	38 38	

Table 1 Continued

	Question: How important is the outcome to you?	Not % of respondents per answer option	Somewhat	Quite	Very	More or less important at T.1/T.2 than T.0 ²
15	Enhances possibility to share difficult emotions and thoughts	before after ¹	0 2	13 14	44 44	43 40
16	Find more courses of action to manage the situation	before after	0 2	10 13	46 51	44 34
17	I listen more seriously to other's opinions	before after ¹	3 2	18 14	43 42	36 42
18	Increases awareness of own emotions	before after ¹	3 5	19 20	44 41	34 34
19	Strengthens my self-confidence when managing difficult situations	before after ¹	3 4	14 19	44 45	39 32
20	Develops my ability to identify the core ethical question in difficult situations	before after ¹	1 3	12 19	48 47	39 31
21	I and my co-workers examine more critically existing practice/policies in workplace	before after ¹	2 3	14 23	50 46	34 28
22	I and my co-workers manage disagreements more constructively	before after ¹	1 2	12 17	46 45	41 36
23	I gain more clarity about own responsibility in difficult situations	before after ¹	1 2	13 20	47 44	39 34
24	Enhances mutual respect amongst co-workers	before after ¹	2 2	9 14	40 40	49 44
25	I become more aware of my preconceived notions	before after ¹	3 4	17 18	40 42	40 36
26	I understand better what it means to be a good professional	before after ¹	4 3	16 16	42 41	39 40

Bold items: top 10 of outcomes perceived by most respondents as quite or very important in either T.0 or T.1/T.2 data, or both

¹More than 10% of respondents answered the option 'Cannot take stand' or did not give any answer; ²Only significant differences are shown: *Significant in independent samples t-test (Chi Square), with T.0 (N=515) vs T.1/T.2 (N=288), p-value <0.05; ^Significant in dependent samples t-test (Wilcoxon signed-rank test), with 273 respondents who completed T.0 and T.1 and/or T.2, p-value <0.05;

1. Perceptions on important items after MCD participation

After participation in MCD, more than 69 percent of the healthcare professionals rated all items as 'quite' or 'very' important (see Table 1). On average, the answer option 'Not important' was chosen by only 3 percent per item (ranging from 0 to 5 percent) and the answer option 'Somewhat important' by 17 percent (ranging from 8 to 26 percent). The top-10 of items perceived as most important by most (82-91 percent) respondents included three items from the Euro-MCD domain Enhanced collaboration, namely 'More open communication among co-workers' (no. 2), 'Better mutual understanding of each other's reasoning and acting' (no. 8) and 'Enhances mutual respect amongst co-workers' (no. 24). Two items concerned the domain Improved moral reflexivity: 'Develops my skills to analyze ethical difficult situations' (no.1) and 'I see the situation from different perspectives' (no. 9). Another two items concerned the domain Improved moral attitude: 'I listen more seriously to other's opinions' (no. 17) and 'I understand better what it means to be a good professional' (no. 26). The remaining three items from these ten came from three different domains: Concrete results ('Find more courses of action to manage the situation', no. 16), Impact on the organizational level ('I and my co-workers become aware of recurring situations', no. 10) and Enhanced emotional support ('Enhances possibility to share difficult emotions and thoughts', no. 15).

2. Comparing ratings after participation with those before MCD participation

The ratings *after* participation are similar to those of respondents *before* participation, as also *before* participation the majority (more than 75 percent) of respondents rated all items as 'quite' or 'very' important and here even less respondents chose the option 'Not important' (average of 2 percent, ranging from 0 to 5 percent) or 'Somewhat important' (average of 13 percent, ranging from 4 to 21 percent). The top-10 of most important items at T.0 is similar to the top-10 at T.1/T.2 as just described, except for the items from the domain Improved Moral Attitude (no. 17 and 26). These items from the top-10 at T.1/T.2 did *not* appear in the top-10 of most important items at T.0. Instead, at T.0, two other items were highly rated: one from the domain Enhanced Collaboration ('I and my co-workers manage disagreements more constructively', no. 22) and another one from the domain of Concrete Results ('Consensus is gained amongst co-workers in how to manage the situation', no. 3).

Considering the differences in ratings of perceived importance before and after MCD participation, respondents perceived most (21 out of 26) items as *less* important at T.1/T.2 than at T.0, of which 16 changed significantly (see Table 1). These 16 items included all items from the domains Concrete results and Impact on the organizational

level, and almost all items from the domains of Improved moral reflexivity and Enhanced collaboration. Significant differences concerned a mean change of 7 percent in responses of 'quite' and 'very' important, ranging from 4 percent for the item 'More open communication among co-workers' to 10 percent for the item 'Concrete actions to manage the situation'. However, the majority of respondents (ranging from 70 to 91 percent) still rated these 16 items as 'quite' or 'very' important after participation in MCDs. For instance, the item 'More open communication among co-workers' was perceived as 'quite' or 'very' important by 96 percent before and by 91 percent after participation in MCD sessions. Hence, the significant differences in the importance ratings were not considered meaningful.

On average, 43 respondents (10 percent) and 30 respondents (12 percent) did not give any answer or chose the option 'Cannot take a stand' at T.1 respectively T.2. This number was 21 respondents (3 percent) at T.0. In Table 1, outcomes were marked where more than 10 percent of respondents did not complete the item or answered 'Cannot take stand'. In particular, three items had relatively high percentages for 'Cannot take stand' or missings on all moments (T.0, T.1 and T.2): 'I listen more seriously to other's opinions' (no. 17, 7% at T.0, 13% at T.1, 13% at T.2); 'I and my co-workers manage disagreements more constructively' (no. 22, 4% at T.0, 13% at T.1, 13% at T.2) and 'Better understanding of being a good professional' (no. 26, 4% at T.0, 13% at T.1, 17% at T.2).

3. Factor structure of importance ratings of Euro-MCD Instrument

The presumed categorization into six Euro-MCD domains was not found in the factor structures of both T.0 and T.1/T.2 data, since factor analyses in both T.0- and T.1/T.2-data suggested a classification into three factors (= categories) covering 16 out of 26 items. Yet, all items from the domain Improved moral reflexivity were associated with each other (i.e. found in the same factor), this was also the case for most items of the domain Enhanced collaboration. Items from the domain Improved moral attitude were associated with those from the domain Enhanced emotional support. Furthermore, the items from the domains of Concrete results and Impact on organizational level did not clearly cluster together.

Exploratory Factor Analysis on the 26 Euro-MCD items at T.0 revealed a model with three factors with Eigenvalues > 1. In this model, 24 out of 26 items clustered with other items. As shown in Tables 2 and 3, eight items correlated with each other in the first factor, ten items were correlated in the second factor and seven items were correlated in the third factor. The items 'Consensus is gained amongst co-workers in how to manage the situation' (no. 3) and 'I gain more clarity about own responsibility

Table 2 - Factor loadings of items Euro-MCD Instrument

Item	Responses before or after MCD participation:		Factor loading		
	1	2	3	2	3
1	Develops my skills to analyze ethical difficult situations	before after	0.617 0.614		
2	More open communication among co-workers	before after	0.700 0.662		
3	Consensus is gained amongst co-workers in how to manage the situation	before after	- 0.718		
4	Enables me to better manage the stress from the ethical situation	before after	0.658 -		
5	Contributes to the development of practice/policies in the workplace	before after	- 0.521		0.622
6	Gives me more courage to express my ethical standpoint	before after	0.738 -		0.515
7	I feel more secure to express doubts or uncertainty regarding difficult situations	before after	0.734 -		0.547
8	Better mutual understanding of each other's reasoning and acting	before after	- -		0.617
9	I see the situation from different perspectives	before after	- -	0.587	0.667
10	I and my co-workers become more aware of recurring situations	before after	- -	0.574	0.566
11	Increases my awareness of the complexity of the situation	before after	- -	0.588	0.550
12	Enhances my understanding of ethical theories	before after	- -	0.585	0.550
13	Enables to decide on concrete actions to manage the situation	before after	- -	0.719	0.568
14	Greater opportunity for everyone to have their say	before after	- -	0.770	0.592
				0.565	0.568
					0.559

Table 2 – Continued

Item	Responses before or after MCD participation:			Factor loading		
	1	2	3	1	2	3
15	Enhances possibility to share difficult emotions and thoughts	before after	0.639			0.574
16	Find more courses of action to manage the situation	before after	0.652 0.579			
17	I listen more seriously to other's opinions	before after	0.571 0.612			0.509
18	Increases awareness of own emotions	before after	0.718 0.648		0.524	
19	Strengthens my self-confidence when managing difficult situations	before after	0.750 0.636		0.538 0.622 0.655 0.567	
20	Develops my ability to identify the core ethical question in difficult situations	before after	0.611			0.627
21	I and my co-workers examine more critically existing practice/policies in workplace	before after	0.684			
22	I and my co-workers manage disagreements more constructively	before after	- 0.579		- 0.608	
23	I gain more clarity about own responsibility in difficult situations	before after	0.679			0.722
24	Enhances mutual respect amongst co-workers	before after	0.549			0.515
25	I become more aware of my preconceived notions	before after	0.586		0.518	
26	I understand better what it means to be a good professional	before after	0.626 0.681			

Table 3 – Overview outcomes per factor compared to Euro-MCD domains

Factor	No. Item	Euro-MCD Instrument	Euro-MCD domain^
1	Outcomes clustering in both T.0- and T.1/T.2- data	17. I listen more seriously to other's opinions*	4
		18. Increases awareness of own emotions*	1
		19. Strengthens my self-confidence when managing difficult situations*	1
		25. I become more aware of my preconceived notions*	4
		26. I understand better what it means to be a good professional	4
		4. Enables me to better manage the stress from the ethical situation	1
	only in T.0-data	6. Gives me more courage to express my ethical standpoint	4
		7. I feel more secure to express doubts or uncertainty regarding difficult situations	1
	only in T.1/T.2-data	15. Enhances possibility to share difficult emotions and thoughts	1
		21. I and my co-workers examine more critically existing practice/policies in workplace	5
		22. I and my co-workers manage disagreements more constructively	2
		23. I gain more clarity about own responsibility in difficult situations*	4
		24. Enhances mutual respect amongst co-workers*	2
		1. Develops my skills to analyze ethical difficult situations	3
9. I see the situation from different perspectives*		3	
10. I and my co-workers become more aware of recurring situations*		5	
2	Outcomes clustering in both T.0- and T.1/T.2-data	11. Increases my awareness of the complexity of the situation	3
		12. Enhances my understanding of ethical theories	3
		16. Find more courses of action to manage the situation	6
		20. Develops my ability to identify the core ethical question in difficult situations	3
		5. Contributes to the development of practice/policies in the workplace	5
		13. Enables to decide on concrete actions to manage the situation	6
	only in T.0-data	21. I and my co-workers examine more critically existing practice/policies in workplace	5
		18. Increases awareness of own emotions*	1
		19. Strengthens my self-confidence when managing difficult situations*	1
		23. I gain more clarity about own responsibility in difficult situations*	4
only in T.1/T.2-data	25. I become more aware of my preconceived notions*	4	

Table 3 – Continued

Factor	No. Item Euro-MCD Instrument	Euro-MCD domain [^]	
3	Outcomes clustering in both T.0- and T.1/T.2-data	2. More open communication among co-workers 8. Better mutual understanding of each other's reasoning and acting 14. Greater opportunity for everyone to have their say 24. Enhances mutual respect amongst co-workers	2 2 2 2
	only in T.0-data	15. Enhances possibility to share difficult emotions and thoughts 17. I listen more seriously to other's opinions* 22. I and my co-workers manage disagreements more constructively	1 4 2
	only in T.1/T.2-data	3. Consensus is gained amongst co-workers in how to manage the situation 5. Contributes to the development of practice/policies in the workplace 6. Gives me more courage to express my ethical standpoint 7. I feel more secure to express doubts or uncertainty regarding difficult situations 9. I see the situation from different perspectives* 10. I and my co-workers become more aware of recurring situations* 13. Enables to decide on concrete actions to manage the situation	6 5 4 1 3 5 6
	Not associated with any factor in T.0-data	3. Consensus is gained amongst co-workers in how to manage the situation 23. I gain more clarity about own responsibility in difficult situations	6 4
	in T.1/T.2-data	4. Enables me to better manage the stress from the ethical situation	1
	<i>* Correlated at >1 factor</i> ^ Original Euro-MCD domains: 1 = Enhanced emotional support 2 = Enhanced collaboration 3 = Improved moral reflexivity 4 = Improved moral attitude 5 = Impact on organizational Level 6 = Concrete results		

in difficult situations' (no. 23) did not associate with other items. The item 'I listen more seriously to other's opinions' (no. 17) correlated with items of both first and third factors.

Exploratory Factor Analyses on the T.1/T.2-responses constructed a model with two factors in which eight items were associated with both factors, which made it difficult to read this classification. As the T.0 factor analysis resulted in three factors, a forced three factor model was performed, to see whether the same three factors would arise. This classification is represented in Table 2, alongside the T.0-classification. In this model, 25 out of 26 items were correlated with other items and thus distributed into one of the three factors. The item 'Enables me to better manage the stress from the ethical situation' (no.4) did not associate with any item at any factors and seven items were still associated with items from more than one factor. Many items were distributed over the same factors when compared with the classification of the T.0-responses.

In total, 16 out of 26 items were correlated with each other according to the same classification at both T.0- as well as T.1/T.2-data. The final factor models with classification of items of T.0 and T.1/T.2, with reference to their Euro-MCD domain, are shown in Table 3. For every factor, items that associate with each other in both T.0- and T.1/T.2-data are named firstly. In the first factor, five items correlate with each other in the same way at both T.0 and T.1/T.2. This factor seems to involve the individual feelings, emotions and attitude as these items come from the Euro-MCD domains Enhanced emotional support and Improved moral attitude, indicating that these domains are related to each other. In the second factor, seven items are clustered similarly, which concern the awareness of and skills to identify, analyze and act upon ethically difficult situations. These items include all items from the domain of Improved moral reflexivity and two from the domains Concrete results and Impact on organizational level: 'Find more courses of action to manage the situation' and 'I and my co-workers become more aware of recurring situations'. This confirms the link among items of Improved moral reflexivity. This factor also indicates a need to reconsider the items in the domains Concrete results and Impact on organizational level as they might not be interpreted according to the intended meaning. The third factor seems to concern the teamwork among co-workers since it consists of 4 items, all from the Euro-MCD domain Enhanced collaboration. For this domain, the presupposed associations between items are also confirmed.

DISCUSSION

This paper described the importance of MCD outcomes according to healthcare professionals *after* MCD participation, a comparison with the perceived importance *before* MCD participation and results from the factor analyses on all rated outcomes in order to further develop the Euro-MCD Instrument.

Perceptions on importance – reconsidering the question in the Euro-MCD Instrument

Our study firstly showed that the majority of healthcare professionals, who completed the Euro-MCD Instrument, perceived all outcomes as quite or very important with only a very few respondents rating outcomes as not important. Outcomes perceived as most important mainly concerned the domain of Enhanced collaboration, including open communication, mutual understanding and respect, and outcomes referring to the domain Improved moral reflexivity, like being able to see the situation from various perspectives. These outcomes are in line with literature on underlying hermeneutical fundamentals of MCD and goals of CES in general (Widdershoven & Molewijk 2010; Porz et al. 2011; Metselaar et al. 2015): ‘Clinical ethics [...] does support individual professionals in becoming more sensitive to moral issues and groups of professionals in dealing with difficult situations by improving communication and dialogical learning’ (Widdershoven & Molewijk 2010). Furthermore, our findings are in line with previous evaluation studies (Weidema et al. 2013; Hem et al. 2015; Janssens et al. 2016; Silén et al. 2016; Haan et al. 2018). Based on 25 empirical studies on impact of MCD, Haan and colleagues (2018) concluded that most changes concerned the interaction and understanding of perspectives among healthcare professionals (i.e. collaboration) and the ‘awareness of the moral dimension of one’s work and awareness of the importance of reflection’ (i.e. moral reflexivity).

Our study adds to existing literature on importance of MCD outcomes that also *after* participation in MCD, most respondents perceive outcomes as quite or high important. The finding that all outcomes were perceived as important by the majority of respondents *before* participating in MCD has also been described in previous Euro-MCD field studies (De Snoo-Trimp et al. 2017; Svantesson et al. 2019). A possible reason for these high rates at both T.0 and T.1/T.2 is that participants might have interpreted the question ‘How important is the outcome to you?’ in (at least) two ways: ‘Do you feel the need for this outcome?’ or ‘Do you expect that MCD would lead to this outcome?’. This might explain the high rates at T.0, where respondents just had high needs for certain MCD related outcomes or high expectations of what MCD could lead to. After

participation in MCD, respondents might perceive outcomes also as highly important to (still) stress the need for MCD related outcomes or to express that MCD indeed leads to these outcomes according to their expectations.

Our findings further showed that 16 outcomes were perceived as significantly less important *after* participation in MCD than *before*. A reason for this might be that respondents considered some outcomes as less relevant when learning what MCD really is, as they had no idea prior to participation, or because they had too high expectations beforehand and adjusted these afterwards. Although these changes are statistically significant, they are small and we do not consider them as meaningful and clinically relevant changes. Note that these outcomes were still perceived as quite or very important by the majority (>70%) of respondents. For instance, almost all outcomes from the domains of Improved moral reflexivity and Enhanced collaboration changed significantly but were still rated as the most important after MCD participation.

With regard to further development of the Euro-MCD Instrument, our findings indicate that the respondents – the healthcare professionals who take part in the MCD sessions – confirmed the importance and relevance of outcomes in the instrument and that they did not decisively differ in perceptions when asked for it (before or after MCD participation). Since respondents did not obviously discriminate among the presented outcomes, it would not be possible to tailor the content of MCD to prioritized outcomes or to weigh experienced outcomes against the prioritized outcomes. Hence, the usefulness of the question on perceived importance is not so clear anymore. We can therefore conclude that the question on perceived importance needs reconsideration and perhaps might even not be necessary in the future revision of the Euro-MCD Instrument.

Testing the factor structure of Euro-MCD items on perceived importance

Secondly, our study showed that the presupposed categorization of outcomes into six domains was not confirmed in the factor analyses, but that three distinct domains with 16 outcomes can be recognized. Yet, the Euro-MCD domains Improved moral reflexivity and Enhanced collaboration could be recognized in these factor analyses because most of their items were indeed associated with each other. These domains therefore seem to reflect separate constructs, either referring to individual moral skills (i.e. outcomes from Improved moral reflexivity) or group collaboration (i.e. outcomes from Enhanced collaboration). Furthermore, the domains Improved moral attitude and Enhanced emotional support seemed to refer to the same underlying construct as their outcomes associated with each other in the same category. This correlation between

outcomes of these two domains was also found in our other study concerning the factor structure of items regarding *experienced* MCD outcomes, both during the MCD sessions and beyond the MCD sessions in daily practice (De Snoo-Trimpe et al. 2019). Considering this, we think that outcomes in these two Euro-MCD domains refer to individual virtues in which feelings and character aspects play a role, as we also suggested in our other study (De Snoo-Trimpe et al. 2019). Lastly, the domains of Concrete results and Impact on organizational level were not clearly reflected in the factor models, indicating a need to reconsider and revise these domains. In these domains, some outcomes might have been unclear by having different meanings, resulting in a lack of correlations with other outcomes. For instance, the outcome 'Consensus is gained amongst co-workers in how to manage the situation' loaded on two factors. It might have been interpreted as a collaboration-outcome by respondents: '*we as a group* reached consensus', while it originally refers to Concrete results and was intended to assess the joint *ability to concretely manage* the situation. It might however be a question if consensus should be an outcome of MCD at all as it is not as such emphasized in literature on fundamentals and goals of MCD (Widdershoven & Molewijk 2010; Metselaar et al. 2015). Normative decisions (i.e. on what *should* be an outcome and why) need to be made in the further revision of these outcomes.

To conclude this part, the factor analyses from both this study and our other study on experienced MCD outcomes (De Snoo-Trimpe et al. 2019) provided important insights in the associations of the Euro-MCD domains, to be used in the future revision of the instrument. Our finding that 16 outcomes showed similar correlations in both studies indicates that these outcomes are relevant, clear and stable as they are interpreted similarly when applied to different questions (i.e. regarding importance and experience), different moments (i.e. before and after participation) and different settings (i.e. during the MCD sessions and after the MCD sessions in daily practice).

Strengths and limitations

A strength of this study is that we performed the current and other field studies with an open mind, not being reluctant to criticize the original structure and outcomes, which is important when developing or revising measurement instruments (De Vet et al. 2011). Another strength of this study is the large and heterogeneous population in which we could test the Euro-MCD Instrument, as the instrument intends to be applicable in various settings and contexts in which MCD is done (Svantesson et al. 2014). A limitation however is that because of this heterogeneity (in countries, settings and professional backgrounds), the number of respondents per subgroup was too small to allow for subgroup comparisons (e.g. the Dutch versus the Swedish or Norwegian respondents).

We did not consider this as a major weakness, as comparisons of subgroups was not the aim of this study. Another limitation is the limited data on perceived importance after participation in 8 MCD sessions (T.2). Therefore, we had to merge T.1 and T.2 data to obtain sufficient power for the factor analyses. As a consequence, this study does not show if respondents change their perceptions of importance when their participation in MCD develops further (i.e. between 4 and 8 MCD sessions).

Relevance

This study contributes to the empirical evidence (De Snoo-Trimp et al. 2017;2019; Svantesson et al. 2019) for revising the Euro-MCD Instrument as a profound tool for measuring outcomes of MCD. Insight in participants' perceptions of importance is crucial in this process since, in the end, they are the ones who should benefit from MCD. MCD, like any CES service, aims to improve quality of care mainly by supporting healthcare professionals in dealing with ethically difficult situations. Input from participants themselves is therefore important to define suitable outcomes that they are able to recognize, value and experience.

Insight into the factor structure of responses is highly relevant for further development of the instrument. Validated dimensions (i.e. categories) of outcomes will facilitate future use of the instrument as results can be presented per domain instead of per outcome, and these results will also become more reliable if a domain is measured by multiple related outcomes. As already stated by the developers, it is important 'to know *if* there is a systematic pattern of MCD outcomes within the Euro-MCD' (Svantesson et al. 2014). Furthermore, since the Euro-MCD Instrument consists of a rather long list of 26 outcomes, one of the aims of the field study was to reduce the number of outcomes to make it a feasible and easy-to-use tool for practice (Svantesson et al. 2014). The current findings therefore form valuable information for reducing outcomes as it showed for instance that some outcomes showed hardly any correlation with any of the other outcomes and thus need thorough reconsideration.

Conclusion

This study confirmed that also after MCD participation, healthcare professionals gave high rates to importance of Euro-MCD outcomes. Findings indicate the need to reconsider whether we should still include the question on perceived importance in the revised Euro-MCD Instrument as well as the initial categorization of outcomes into six domains. Thus, the study contributes to empirical evidence for the revision of the instrument. In this revision process, empirical evidence will be combined with researchers' reflections, dialogues and theoretical justifications. This integration of

empirical evidence and theoretical reflections will ultimately determine what outcomes *should* be MCD outcomes and *why*, and how these should be included in the instrument. The revised Euro-MCD Instrument will be published elsewhere in the near future.

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APPENDIX - Characteristics respondents Euro-MCD Instrument			
	Before MCD (T.0)	After 4 MCDs (T.1)	After 8 MCDs (T.2)
Total N	756	443	247
<i>Country N (%)</i>			
Sweden	275 (36)	130 (29)	142 (58)
Netherlands	384 (51)	232 (52)	53 (21)
Norway	97 (13)	82 (18)	52 (21)
Male/female %	24/76	20/80	13/87
Age, mean (range)	44 (20-68)	45 (21-75)	45 (20-65)
Years of experience, mean (range)	18 (0-50)	18 (0-45)	19 (1-45)
<i>Profession N (%)</i>			
Nurse ¹	342 (45)	160 (37)	126 (53)
Nurse assistant	120 (16)	73 (17)	58 (24)
Doctor/specialist/psychiatrist	49 (7)	18 (4)	6 (3)
Therapist ²	143 (19)	121 (28)	23 (9)
Manager ³	45 (6)	32 (7)	19 (8)
Others ⁴	47 (6)	28 (7)	6 (3)
<i>Respondents per setting N (%)</i>			
Community care services	137 (18)	110 (25)	77 (31)
Somatic hospital care	342 (45)	140 (32)	119 (48)
Psychiatric care	213 (28)	148 (33)	31 (13)
Mentally disabled care	49(7)	26 (6)	12 (5)
Health Inspection/Research	15 (2)	19 (4)	8 (3)
Institutions N	34	30	25
MCD participation, mean (range)	0 (0-5)	3 (0-6)	4 (0-10)
missing MCD participation %	30	60	51

¹Including registered nurses; support workers and psychosocial workers; ²Including physiotherapists; psychologists; spiritual caregivers; social workers; ³Including head of departments and policy makers, ⁴Including volunteers, clients, researchers, trustees, secretary and interns