

Medical decision-making capacity: knowledge, attitudes, and assessment practices of physicians in Switzerland

Helena Hermann^a, Manuel Trachsel^a, Christine Mitchell^b, Nikola Biller-Andorno^{a,b}

^a Institute of Biomedical Ethics and History of Medicine, University of Zurich, Zurich, Switzerland

^b Harvard Medical School, Boston, MA, United States of America

Summary

OBJECTIVE: *Decision-making capacity (DMC)* is an indispensable prerequisite for patients' informed consent and therefore directly related to the right to self-determination. In view of this ethical implication, valid and reliable assessment of DMC is essential to best practice. In general, and with particular regard to the Swiss context, little is known about healthcare practitioners' knowledge of and attitudes to the concept of DMC, or about their assessment practice. The present study aims to close this gap.

METHOD: A randomised representative sample of 3,500 physicians, including all specialisms and from all parts of Switzerland, were contacted by mail and invited to complete a survey questionnaire, which was specifically designed for the purpose of the study.

RESULTS: A total of 763 questionnaires were included for analysis (response rate: 22.15%). Physicians diverged in their general understanding of DMC as either a *dichotomous* or a *gradual concept*, and in relation to the conceptual challenges of *decisional relativity* and *risk-relativity*. Along with cognitive abilities, emotional, intuitive, or evaluative factors were acknowledged as important *criteria*. DMC was most often assessed *implicitly*: explicit assessments, if conducted, depended mainly on *unstructured interviews*. A discrepancy was identified between physicians' perceptions of *responsibility* and *qualification*, indicating a related need for more *guidance* and *training*.

CONCLUSION: The conceptual and practical challenges of DMC are far from being resolved. There is a clear need for more guidance in this area in the form of guidelines, tools, and training.

Key words: *Decision-making capacity; competence; assessment; attitudes; knowledge; physicians; ethics; guidelines; informed consent; self-determination*

Introduction

Decision-making capacity (DMC) is among the prerequisites for valid consent to medical treatment. From an ethical perspective, DMC judgements reflect the tension between the moral duty to respect the autonomy of the individual who is capable of making his or her own decision and the

need to protect decisionally incapable persons [1]. Evaluations of DMC seek to balance these different moral concerns, and to set the course for appropriate and responsible action. The issue is especially relevant in the case of vulnerable persons, such as those with cognitive and mental impairments or in precarious situations – for example, end of life situations that may often involve existential, medical-ethical decisions [2]. It seems essential, then, to first seek clarity with respect to the definition and constitutive elements of the concept, and second, to be able to reliably and validly assess DMC in vulnerable patients.

From a conceptual perspective, a range of challenges arise [3]. One very general issue concerns the distinction between dichotomous and gradualist notions of DMC, both of which seem valid from different viewpoints. If emphasis is put on the actions guiding clinical judgment, it is preferable that DMC be seen as either present or absent, with a clear threshold. However, if emphasis is placed on underlying mental abilities, which can in turn be more or less intact, a gradualist understanding may be more appropriate [1].

In terms of mental abilities, the delineation of relevant criteria is also conceptually challenging. The following four criteria have been proposed [4]: (1.) *evidencing a choice* refers to the ability of the patient to communicate a choice; (2.) *understanding* refers to the ability to comprehend treatment-related information, such as information about the present disorder, treatment options, and related risks and benefits; (3.) *appreciation* refers to the ability to appreciate the nature of the disorder, and the possibility that treatment could be beneficial (which is distinct from the understanding standard in that it requires the patient to apply the information to his or her own situation); and (4.) *reasoning* refers to the ability to manipulate information rationally, using logic to compare the risks and benefits of treatment alternatives. However, it remains a matter of debate as to whether these criteria are appropriate and sufficient: they are, for instance, criticised for being unduly focused on cognitive aspects (e.g., [5–7]).

There is more agreement around the challenge of decisional relativity. It is widely accepted that DMC is assessed as a function of a particular *decision* or *situation*, which implies that a patient may be capable of making a particular

treatment decision but is less capable of assessing another [1]. DMC may vary over *time* due to fluctuating mental abilities [8], and the notion of relativity may also apply to the *risk* that accompanies a certain decision. A risk-relative assessment of DMC means an evaluation of capacity with due consideration of the risk-benefit profile related to a certain decision, using different or more stringent criteria in terms of mental abilities according to the level of risk associated with the patient's choice. For example, if the treatment choice carries only a minor risk, it may be sufficient that the patient understands the given information; if a high-risk option is chosen, s/he must additionally be able to weigh the given information in light of his or her own values. Taking risk-relativity into account in evaluating DMC is controversial and constitutes one of the most complex challenges to the concept (e.g., [9, 10]).

In addition to these conceptual aspects, DMC assessments are also challenging from a practical perspective, involving questions of how to translate conceptual concerns into a feasible, valid, and reliable assessment procedure, and how such procedures should optimally be formulated.

Scholars have taken steps both to clarify the conceptual challenges and to address practical issues by, for example, developing and validating standardised assessment tools (for an overview see [11]). Additionally, DMC has been investigated in different patient populations [12]. By contrast, relatively little is known about the assessing clinicians or their knowledge, attitude and approach to the concept and the assessment of DMC. However, the few existing studies focused primarily on these aspects have shown that misunderstandings and knowledge deficits are prevalent among healthcare practitioners, indicating that continuing education and training is needed in this area [13]. At present, there are no existing studies that provide information on how physicians in Switzerland approach the conceptualisation and evaluation of DMC. For this reason, the aim of the present study was to augment this line of research in an attempt to shed light on the situation in Switzerland. The following clusters of research questions guided the survey.

1. How do physicians perceive their *responsibility* and *qualifications* for conducting DMC evaluations?
2. What is the current state of physicians' *attitudes and knowledge* of DMC in terms of general *conceptual understanding*, relevant *mental abilities*, *decisional relativity*, and *risk-relativity*?
3. How is DMC dealt with in *clinical practice*? Which *patient behaviours* and *patient groups* challenge DMC? Which *complicating factors* do physicians encounter? And what kinds of *interventions* and *strategies* do physicians use to enhance patients' capacity?
4. What kind of DMC *assessment procedures* do physicians conduct?
5. Do physicians request DMC *assessment tools* and *official guidelines*, or do they seek more extensive *education and training*?

Methods

Study design, procedure, and sample

The present survey was part of the study "Decision-making incapacity at the end of life and its assessment in Switzerland", funded within the *National Research Programme NRP 67 End of Life* of the *Swiss National Science Foundation*, and conducted in cooperation with the *Swiss Academy of Medical Sciences (SAMS)*. The study protocol was approved by the ethical review committee of every Swiss canton.

The research questions were addressed within a representative cross-sectional survey of physicians in Switzerland. The main survey questionnaire was developed specifically for the purpose of the present study. At each stage of the project, a multi-disciplinary advisory board comprising physicians, psychologists, ethicists, and lawyers was consulted (see Acknowledgements section).

Hard copies of the survey questionnaire were sent by mail. Participants had the option of filling in a paper-and-pencil version of the questionnaire or using a link to an online version. Data collection lasted for six months from June to November 2013. As a reward for participation, all respondents were included in a prize draw for 15 book vouchers of 100 Swiss Francs.

The study was conducted among senior physicians practising in Switzerland as accredited medical specialists. A randomised representative sample of 3,500 physicians, including all specialisms and from all parts of Switzerland (German, French, and Italian), was drawn by the *Swiss Medical Association FMH*, corresponding to approximately 11% of physicians in Switzerland [14]. Fifteen subjects were not included, either because they were on the project advisory board or had taken part in the pilot study.

Survey questionnaire

A first version of the survey questionnaire was developed, based on the research questions of the present study. This first version was discussed within the advisory group, the central ethics committee of the SAMS, and in two focus group meetings, with general practitioners, psychiatrists, and neurologists. After revision, a second version was discussed with a biostatistician and again presented to the central ethics committee of the SAMS. After a further (second) revision, the third version of the questionnaire was used for a pilot study among 86 Swiss physicians, from every specialism, in German-speaking Switzerland. The comments and suggestions of these respondents formed the basis for a third revision of the questionnaire, which led to the final version used in the main survey. This final version was then translated from German to French by a professional translator from the SAMS. Physicians from the Italian-speaking part of Switzerland could choose to fill in either the German or French version of the survey (questionnaire versions are available on request from the authors).

Statistics

In addition to descriptive statistics, nonparametric testing was used to compare physician groups (Mann-Whitney Test) or variables (Wilcoxon Signed-Ranks Test), or to de-

tect correlations (Spearman). Significance was assigned at the five percent level. Data were analysed using SPSS 19.

Results

The questionnaire was completed by 772 physicians, which corresponds to a response rate of 22.15%. Women showed a response rate of 25.87%, and the rate for men was 20.46%. The response rate was 23.32% among German-speaking participants, and 19.08% among French-speaking participants. The majority responded via the paper-and-pencil version (90.5%); only 9.5% responded online. Since physicians who did not work as clinicians were excluded (n = 9), analysis was conducted with a final sample of 763. Table 1 shows the socio-demographic variables of the sample.

Responsibility and qualification

In terms of responsibility and qualification, the results yielded the following crosstable (table 2), showing a difference on these two aspects. In essence, 35.8% (n = 167) of those who indicated that they feel *very responsible* for assessing DMC (61.3%, n = 468) also felt that they were *surely qualified enough* for so doing.

Additional mean rank comparisons (Mann-Whitney tests) found that psychiatrists and psychotherapists not only feel more *responsible* (p <0.001) but also more *qualified* (p <0.001) than other specialists. Child and adolescent psychiatrists, however, only feel significantly more *responsible* (p <0.05).

A Spearman correlation analysis showed (although with a small coefficient) that the more experienced physicians are, the more qualified they perceive themselves to assess DMC (rs = 0.15; p <0.001; one-tailed).

Attitudes and knowledge

Asked to indicate whether DMC is a *dichotomous concept* (DMC yes/no) or a *gradual concept* (DMC more or less),

a minority favoured the dichotomous notion (22.4%, n = 171), but most selected a gradual conception of DMC (73.9%, n = 564). A few felt indecisive with respect to this question (3.3%, n = 25).

Concerning criteria for DMC with respect to *mental abilities*, the classical cognitive standards (*understanding, appreciation, reasoning, and evidencing a choice*) were considered most important – specifically, more important than engaging emotionally and intuitively in the decision-making process, and more important than reasoning about the given information in the light of one's coherent *set of values* (p <0.001, Wilcoxon Signed-Ranks Test). The non-cognitive factors were nevertheless regarded as *rather* or *very relevant* by most physicians, including *emotional participation* (69.1%, n = 527), reference to one's *biography, experiences, and intuitive knowledge* (71.2%, n = 543), and reference to one's *values* (89.2%, n = 681).

Since other factors besides knowledge about patients' mental abilities contribute to DMC evaluations [15], physicians were also asked to indicate to what extent these may have an impact. These factors are listed below in descending order of importance, with percentage and number of physicians who quoted the factors as *rather* or *very important*: *psychopathological status* (84.5%, n = 644); *medical context*, for example, urgency of treatment (75%, n = 572); *complexity of treatment alternatives*, for example, risks and benefits (74.3%, n = 567); *information/statements of patient's next of kin* (69.7%, n = 532); *somatic status* (62.1%, n = 474); *therapeutic relationship* with the physician (52.6%, n = 401); *social context*, for example, extent of patient's social support (50.3%, n = 384); and *physician's own set of values* (26.5%, n = 202).

A vignette was presented to investigate whether or not physicians assess DMC relative to the specific decision at hand (*decisional relativity*). The scenario in question involved obtaining consent to two different interventions that were discussed during the same consultation: (1.) an adjustment of medication, and (2.) a minor surgical interven-

Table 1: Socio-demographic variables (n = 763, FMH physician statistics 2012/2013 [14, 23]).

		Survey sample	Swiss physician statistics	
Age (in years)		M = 48.2 (SD = 8.03)	M = 48.8	
Sex	Female	33%	38.6%	
	Male	66.3%	61.4%	
Field of practice	General practice	4.1%	Outpatient setting	52.8%
	Specialist practice	16%	Inpatient setting	45.5%
	Hospital	83.7%	Other	1.7%
	Other	5.9%		
Level of employment	full-time	27.1%	36%	
	Part-time	72.1%	64%	
Clinical experience (in years)		M = 21 (SD = 8.14)	(No data available)	

M = mean; SD = standard deviation.

Table 2: Cross tabulation: Responsibility and qualification for conducting DMC evaluations.

		Qualification				TOTAL**
		Not qualified enough	Rather not qualified enough	Rather qualified enough	Surely qualified enough	
Responsibility	Not responsible	72.2%*	27.8%*	–	–	2.4%
	Rather not responsible	11.1%*	73%*	14.3%*	1.6%*	8.3%
	Rather responsible	1.9%*	31.8%*	65.4%*	0.9%*	27.7%
	Very responsible	0.2%*	8.1%*	55.9%*	35.8%*	61.3%
	TOTAL**	3.3%	20.4%	53.7%	22.3%	

* % within gradation of responsibility; ** % within total sample.

tion. The results showed that 58.6% (n = 447) conducted discrete DMC assessments for each of the two interventions, whereas 40.2% (n = 307) evaluated DMC only for the first intervention and extrapolated to the second intervention from this first judgement of DMC.

In terms of *risk-relativity*, a high proportion of physicians indicated, on a generally formulated item, that severity of consequence of a medical decision is *rather relevant* or *very relevant* for how they evaluate DMC (73.7%, n = 562). By contrast, the analysis of the risk-relativity case vignette (see table 3, *chemotherapy* vignette) showed that almost as many did not consider risk-relativity, and would apply equally stringent criteria in terms of mental abilities both in cases of consent to or refusal of chemotherapy (66.8%, n = 510). Only 31.7% (n = 242) demanded more stringent standards in the case of treatment refusal, which is considered to be the more risky option. Furthermore, almost all physicians who stated that the consequences of a medical decision are *not at all relevant* for DMC evaluations on the general item also indicated that they would apply equal standards for consent to treatment and treatment refusal in the vignette (92.2%, n = 59). Conversely, less than half of those who regarded consequences as *very relevant* for DMC evaluations on the general item applied higher standards for treatment refusal in the vignette (41%, n = 125). Of those physicians, 58% (n = 177) did not conform to risk-relativity.

Another vignette, on assisted suicide, yielded comparable results (table 3, *assisted suicide* vignette). Here, a majority of physicians applied equally stringent criteria in both cases (57.9%, n = 442). Only 36.2% (n = 276) asked for higher standards concerning mental abilities in the case of assisted suicide in comparison to treatment refusal (forgoing chemotherapy). Moreover, 16.4% (n = 125) stated that they would have to be personally convinced that assisted suicide was the best available option for the patient as a criterion for deeming the patient capable.

Clinical practice

Physicians were asked to indicate to what extent different *patient behaviours* raise the question of DMC. These behaviours are listed in descending order, with percentage and number of physicians who would in *most cases* or *always*

be alerted by the behaviour: a patient is at immediate risk of harming himself or herself or others (87.3%, n = 666); a patient makes a decision which is incomprehensible to the physician, for example, if he or she demands assisted suicide in the case of a treatable condition (81.5%, n = 622); a patient repeatedly changes his or her mind concerning the decision (68.9%, n = 525); a patient is desperate and consents immediately and uncritically to every treatment that has been proposed to him or her (64%, n = 488); a patient communicates that he or she does not care about the decision (63.3%, n = 483); a patient cedes every treatment decision to the attending physician or to another person, because he or she does not feel confident to make the right decision (60%, n = 458); and a patient does not agree with the physician's treatment recommendation (43.3%, n = 330).

With regard to *patient groups*, a variety of diagnoses and conditions were presented that are known or expected to be associated with decision-making incapacity, and physicians had to state how often they assess DMC *in more detail* for each patient group. The conditions are listed in descending order, with percentage and number of physicians who examine DMC either *often* or *always* in more detail: *healthy elderly persons* (44.9%, n = 343); *patients at the end of life* (44.4%, n = 339); *mild cognitive impairment* (44%, n = 336); *Alzheimer's disease* (40.2%, n = 307); *medical in-patients* (34.7%, n = 265); *unipolar depression* (27.6%, n = 210); *schizophrenia* (24.7%, n = 189); *Parkinson's disease* (24.6%, n = 187); *learning disability* (21.8%, n = 166); and *glioma* (16.7%, n = 128).

Tables 4 and 5 show which among a given set of *complicating factors* physicians regard as particularly challenging for DMC evaluations (table 4), and which *intervention strategies* for enhancing patients' DMC they find relevant as well as feasible in everyday practice (table 5).

Assessment procedure

Physicians were asked to indicate how often they evaluate DMC *implicitly*, *explicitly* or *in consultation* with specialised colleagues (table 6). Analysis shows a significant mean rank difference between the implicit and explicit approaches, with the former being more frequent (p < 0.001; Wilcoxon Signed-Ranks Test). Moreover, explicit assess-

Table 3: Case vignettes.

Chemotherapy
<p>A patient has to decide whether or not he wants his cancer to be treated with chemotherapy. If the patient undergoes chemotherapy, the chance of having the tumor growth stopped without recurrence will be 70%. Refraining from treatment on the other hand will likely result in death within a few months. There are no other pertinent treatment options. The patient's medical decision-making capacity is doubted and needs further examination.</p> <p>In which case do you apply <i>higher standards in terms of mental abilities</i> for assessing medical decision-making capacity?</p> <ol style="list-style-type: none"> 1) The patient chooses to undergo chemotherapy. 2) The patient chooses not to undergo chemotherapy (treatment refusal). 3) In both cases, I apply equally stringent standards in terms of mental abilities.
Assisted suicide
<p>The same patient (from the <i>chemotherapy</i> vignette above) decided not to undergo chemotherapy (treatment refusal). Instead he asks for assisted suicide. You are consulted to evaluate the patient's medical decision-making capacity.</p> <p><i>Which standards must be fulfilled to deem the patient capable?</i></p> <ol style="list-style-type: none"> 1) I apply more stringent standards in terms of mental abilities as in the case of treatment refusal. 2) I apply equally stringent standards in terms of mental abilities as in the case of treatment refusal. 3) I must be personally convinced that assisted suicide is the best option available for the patient.

ments are in most cases *never* (38.6%; n = 200) or *rarely* (22%; n = 114) disclosed as such to the patient.

Physicians who evaluate DMC *explicitly* apply the following methods: *unstructured interview* with own situation-specific questions (92.8%, n = 476); *semi-structured interview* with partly predetermined questions (8.6%, n = 44); *standardised interview* with precisely determined questions (7%, n = 36); *questionnaire or written test* (15%, n = 77); and *non-written test procedure* (6.4%, n = 33).

A closer look at the instruments which physicians listed in an open-ended format revealed that they primarily use tools that were originally designed for dementia assessments, of which the most prominent named in this survey is the *Mini Mental State Examination* (MMSE; [16]). Instruments which are specifically designed for the assessment of DMC are used by only a few physicians (2.5%, n = 15), and most have *never* heard of such specific instruments as the *Mac Arthur Competence Assessment Tool for Treatment* (72.3%, n = 552; *MacCAT-T*, [17]); the *Aid to*

Capacity Evaluation (77.2%, n = 589; *ACE*, [18]); and *Silberfeld's Competence Tool* (84%, n = 614; [19]).

Demand for assessment tools, guidelines, and training

Despite physicians' lack of knowledge about and actual use of DMC *assessment tools*, most physicians indicated an interest in such instruments. More than half of physicians would appreciate a certain form of standardisation (65.8%, n = 502), and *official guidelines* and more extensive *training* in systematic DMC evaluations were also clearly considered useful. However, approximately a third of all responding physicians indicated that they would not use any of the proposed tools (32%, n = 244) (see table 7).

Discussion

The aim of the present study was to gain more insight into the attitudes, knowledge, and assessment practices of physicians in Switzerland with regard to DMC. The survey yield-

Table 4: Complicating factors in DMC evaluations.

Cases of marginal capacity or a "grey area" case between obvious capacity and obvious incapacity	69.1%	(n = 527)
A very complicated ethical situation	54.5%	(n = 416)
Chaotic/ conflicting family situation	46.8%	(n = 357)
Patient factors (e.g., lack of willingness to cooperate)	37.5%	(n = 286)
Legal situation unclear	24.8%	(n = 189)
Disagreement with other treating physicians or the care team	23.6%	(n = 180)
Unclear how to apply risk/benefit consideration into the final evaluation	22.7%	(n = 173)
None of the mentioned aspects	0.5%	(n = 4)

Table 5: Strategies for enhancing DMC: Importance and feasibility in every day practice.

	Considered as relevant strategy	Implementation mostly feasible	Implementation not or restricted feasible
I defer the capacity evaluation to a later point in time if the patient appears to be in bad shape.	88.1% (n = 672)	38.3% (n = 292)	49.8% (n = 380)
I align the disclosed information to patients' needs (e.g., additional written information, diagrams and illustrations, translations).	97.1% (n = 741)	68.5% (n = 523)	28.6% (n = 218)
I change medication which might influence patient's mental abilities.	82.7% (n = 631)	26.9% (n = 205)	55.8% (n = 426)
I encourage the patient to discuss the upcoming decision with a close person.	97.1% (n = 741)	76.3% (n = 582)	20.8% (n = 159)
I give the patient the chance to be accompanied by someone close.	96.6% (n = 737)	78.8% (n = 601)	17.8% (n = 136)
I especially make sure that the dialogue takes place in a relaxed and comfortable atmosphere.	98.0% (n = 748)	78.6% (n = 600)	19.4% (n = 148)
I acknowledge and discuss psychological aspects like anxiety and avoidance tendencies, or carry out short psychotherapeutic interventions.	90.1% (n = 688)	38.4% (n = 293)	51.7% (n = 395)

Table 6: Frequency of implicit and explicit DMC evaluations and of referrals.

	Often or always
Implicit within the scope of the regular consultation	63.5% (n = 484)
Explicit extra time and space during the consultation	36.6% (n = 279)
Referral consultation of specialised colleagues	51.1% (n = 390)

Table 7: Request for guidance: Assessment tools, guidelines, and training.

Assessment tools (multiple answer options)		Guidelines	Training
Semi-structured interview with partly predetermined questions	40.9% (n = 312)	<i>Not at all useful</i>	4.7% (n = 36)
Standardised interview with precisely determined questions	25.7% (n = 196)	<i>Rather not useful</i>	10% (n = 76)
Questionnaire or written test	19.4% (n = 148)	<i>Rather useful</i>	46.9% (n = 358)
Non-written test procedure	15.2% (n = 116)	<i>Very useful</i>	36.7% (n = 280)
None of the mentioned aids	32% (n = 244)		52.8% (n = 403)

ded wide-ranging results, among which particular elements deserve further attention as they highlight unresolved conceptual challenges or point to areas requiring further improvement, especially from a practical or policy perspective.

In general, the survey demonstrates that the concept of DMC and its assessment, far from being trivial, is an issue of major importance. This is reflected, first, in the discord concerning any general conceptual understanding. It is reasonable to say that DMC is both a dichotomous concept and something gradual. DMC evaluations are challenging because they require the evaluating physician to assess characteristics of the patient which are gradual in nature and to then integrate them in a clear action-guiding judgement.

With respect to patient characteristics, the survey results indicated that physicians in Switzerland have a more nuanced understanding of relevant mental abilities than is suggested by the prevailing academic account. As well as understanding the relevance of cognitive abilities, they also acknowledge the importance of emotional, intuitive, and evaluative processes. This finding, together with theoretical arguments for the inclusion of non-cognitive elements, points to the need for further reflection on how to systematically incorporate these elements into DMC assessments [7].

Furthermore, the results show that physicians in Switzerland agree with experts in the field that various factors beyond knowledge of patients' mental abilities contribute to judgements about DMC. Of particular interest in this regard is the impact of the physician's own set of values: a quarter of all participants regarded their values as rather or very important. This may be positively interpreted as a critical awareness of personal biases. Experts in the field generally recognise that DMC evaluations are inherently normative and, therefore, never totally objective – a fact that makes DMC evaluation even more complex and, perhaps, susceptible to unjustified medical paternalism [20]. Responses to the case vignette on assisted suicide allude to that problem. Though in the minority, there were physicians who said that they would have to be personally convinced that assisted suicide was the best option available for the patient as a criterion for deeming the patient capable. Certainly, physicians are allowed to have different attitudes towards assisted suicide and to refuse assistance; however, it seems unduly paternalistic to deem the patient incompetent because of one's personal convictions that assisted suicide is not a justifiable option. In this case, physicians' values pertain directly to the outcome of the patient's choice, and there is agreement that DMC evaluation should not be based on the decisional outcome but rather on the decision-making process [1].

In terms of risk-relativity, the outcome also plays a role, but in a different sense, determining the requirements for patients' mental abilities in regard to the decision-making process. It goes beyond the scope of this article to discuss whether or not risk-relativity is appropriate, but physicians' attitudes indicate that this is indeed a very complex issue. A discrepancy was found between physicians' general attitude towards risk-relativity and their respective attitudes within a specific situation. A high proportion of those who

would evaluate DMC at least in part on the basis of consequences arising from the patient's choice refrained from applying that attitude in response to the specific case vignette. One possible explanation for this result might be that the asymmetry (the patient is competent to consent, but incompetent to refuse treatment), which in risk-relative assessments appears somehow counterintuitive, was much more obvious in the vignette [21]. Further analyses and discussion of risk-relativity, especially in relation to physicians' personal values, are presented elsewhere [22].

In terms of decisional relativity, it has been shown that almost half of all participants do not agree with the statement that DMC is dependent on the specific decision. However, it remains unclear whether this is due to a knowledge deficit or to concerns about feasibility.

Looking at physicians' evaluation practices with regard to different patient groups, it is worth mentioning that they do conduct detailed DMC assessments relatively often with healthy elderly persons and patients at the end of life. The comparable high scores may be related to the high prevalence of such patients in clinical practice and not strictly to the specific characteristics of patients; because of a lack of precision in the question, this cannot be conclusively confirmed. Nevertheless, the results indicate that these patients are affected by incompetence, and that more research is needed, especially as patients in these categories are somewhat neglected in the current DMC literature. One question of particular interest concerns the extent to which the a priori assumption of competence implicitly turns into a default presumption of incompetence in such patient groups. One of the most intriguing results of this survey, which has important policy implications, is the finding of a discrepancy between physicians' felt responsibility for conducting DMC evaluations and their qualification for the task, in combination with a related request for more guidance in this area in form of official guidelines, continuing education and training, and/or assessment tools. It appears that physicians in Switzerland currently apply their own rules of thumb, acquired over time and perhaps proven to be clinically appropriate, but also evoking feelings of uncertainty. The high frequency of implicit assessments and the use of unstructured interviews with physicians' own situation-specific questions may be seen to support such an explanation. In terms of guidelines, education, and training, it would seem important not only to introduce physicians to the complex conceptual challenges around DMC, but also to remedy obvious knowledge deficits concerning existing assessment tools, and to sensitise and train them in handling practical challenges regarding how to deal, for example, with complicating factors, or how to effectively enhance patients' DMC.

Finally from an ethical point of view, further reflections on the moral dimensions of DMC evaluations seem crucial. Although clarity with regard to relevant criteria for DMC as well as valid and reliable assessments of patient characteristics are important, they do not give a concluding answer to the question of whether or not the patient is competent. This rests eventually on a normative judgement that includes a weighing of moral principles, and thus, relies on values and norms pertaining not only to the society at large but also to the individual evaluator [22]. Therefore, further

reflections are needed on the moral status of such influencing factors, and the way physicians may be supported in arriving at a final judgement.

Limitations

In light of the response rate of 22.15%, the representativeness of the sample is clearly restricted. Although the sample characteristics are, in most regards, comparable to those of the population of physicians in Switzerland (see [14]), there is a clear over-representation of hospital physicians. In terms of medical specialisms, anaesthesiologists, surgeons, and neurologists are over-represented, and general medical practitioners are clearly under-represented. Moreover, self-selection may also have been a relevant factor to the extent that physicians with a particular need or interest in the topic were more likely to respond. It follows that an overestimation, specifically in terms of desired guidance, cannot be ruled out.

Conclusion

The conceptual and practical challenges of DMC are far from being resolved. There is a clear need for more guidance in this area in the form of guidelines, tools, and training. To this end, further discussion and education would be desirable within the concerned medical associations and organisations.

Acknowledgement: The present study was funded within the National Research Programme NRP 67 "End of life" of the Swiss National Science Foundation SNF, and conducted in cooperation with the Swiss Academy of Medical Sciences (SAMS). The authors would like to thank the members of the advisory board: Prof. Paul S. Appelbaum (MD), Susanne Brauer (PhD), Prof. Dr. med. dipl. theol. Bernice S. Elger, Dr. iur. Julian Mausbach (RA), Prof. Dr. phil. Mike Martin, lic. iur. Michelle Salathé (MAE), PD Dr. med. Egemen Savaskan, Prof. Dr. iur. Christian Schwarzenegger, and Prof. Dr. med. Armin von Gunten.

Funding / potential competing interests: This study was funded by the Swiss National Science Foundation grant 406740_139294. The authors have no conflicts of interest in relation to this article.

Correspondence: Professor Nikola Biller-Andorno, Dr. med. Dr. phil., Institute of Biomedical Ethics and History of Medicine, University of Zurich, Pestalozzistrasse 24, CH-8032 Zurich, Switzerland, [biller-andorno\[at\]ethik.uzh.ch](mailto:biller-andorno[at]ethik.uzh.ch)

References

- Buchanan AE, Brock DW. Deciding for others: The ethics of surrogate decision making. Cambridge: Cambridge University Press; 1989.
- Trachsel M, Mitchell C, Biller-Andorno N. Decision-making incapacity at the end of life: Conceptual and ethical challenges. *Bioethica Forum*. 2013;6(1):26–30.
- Trachsel M, Hermann H, Biller-Andorno N. Urteilsfähigkeit. *Swiss Medical Forum*. 2014;14:221–5.
- Appelbaum PS, Grisso T. The MacArthur Treatment Competence Study I: Mental illness and competence to consent to treatment. *Law and Human Behavior*. 1995;19(2):105–26.
- Charland LC. Is Mr. Spock mentally competent? Competence to consent and emotion. *Philosophy, Psychiatry, Psychology*. 1998;5(1):67–81.
- Cox White B. Competence to consent. Washington, D.C.: Georgetown University Press; 1994.
- Hermann H, Trachsel M, Biller-Andorno N. The role of intuition in medical decision-making capacity. Submitted.
- Trachsel M, Hermann H, Biller-Andorno N. Cognitive fluctuation as a challenge for the assessment of decision-making capacity in patients with different forms of dementia. *Am J Alzheimers Dis Other Dement*. Accepted for publication.
- Brock DW. Decisionmaking competence and risk. *Bioethics*. 1991;5(2):105–12.
- Wicclair MR. Patient decision-making capacity and risk. *Bioethics*. 1991;5(2):91–104.
- Lamont S, Jeon YH, Chiarella M. Assessing patient capacity to consent to treatment: An integrative review of instruments and tools. *J Clin Nurs*. 2013;22:2387–403.
- Kim SYH. Evaluation of capacity to consent to treatment and research. Oxford: Oxford University Press; 2010.
- Lamont S, Jeon YH, Chiarella M. Health-care professionals' knowledge, attitudes and behaviours relating to patient capacity to consent to treatment: An integrative review. *Nurs Ethics*. 2013;20(6):684–707.
- Hostettler S, Kraft E. Neuste Zahlen und Übersicht zur Ärzttestistik 2013. *Schweizerische Ärztezeitung*. 2014;95:467–73.
- Grisso T, Appelbaum PS. Assessing competence to consent to treatment: A guide for physicians and other health professionals. New York: Oxford University Press; 1998.
- Folstein MF, Folstein SE, McHugh PR. "Mini-mental state." A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatry Research*. 1975;12:189–98.
- Grisso T, Appelbaum PS. MacArthur Competence Assessment Tool for Treatment (MacCAT-T). Sarasota, FL: Professional Resource Press; 1998.
- Etchells E, Darzins P, Silberfeld M, Singer PA, McKenny J, Naglie G, et al. Assessment of patient capacity to consent to treatment. *J Gen Intern Med*. 1999;14:27–34.
- Fazel S, Hope T, Jacoby R. Assessment of competence to complete advance directives: Validation of patient centred approach. *BMJ*. 1999;318:493–7.
- Charland LC. Mental competence and value: The problem of normativity in the assessment of decisional capacity. *Psychiatry, Psychology, and Law*. 2001;8(2):135–45.
- Wilks I. The debate over risk-related standards of competence. *Bioethics*. 1997;11(5):413–26.
- Hermann H, Trachsel M, Biller-Andorno N. Physicians' personal values in determining medical decision-making capacity: A survey study. Submitted.
- Kraft E, Hostettler S. FMH-Ärzttestistik: 31858 Ärztinnen und Ärzte garantieren die ärztliche Versorgung. *Schweizerische Ärztezeitung*. 2013;94:453–7.