



Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology: X

journal homepage: www.elsevier.com/locate/eurox

Incapacity in childbirth – Rare or common?

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ARTICLE INFO

Article history:

Received 7 October 2020

Received in revised form 11 December 2020

Accepted 25 January 2021

Available online 29 January 2021

Keywords:

Consent

Capacity

Obstetric emergencies

Childbirth

Mental Capacity Act 2005

ABSTRACT

Objective: Impaired decision making ability is common on general medical wards. Audit evidence suggests that the prevalence of incapacity may be higher than previously assumed in Obstetric Emergency Procedures (OEP) during childbirth. We investigated the prevalence of incapacity in OEP and factors associated with this.

Design: Capacity to consent to treatment was assessed retrospectively in 93 women undergoing OEP. All women were interviewed using a semi-structured questionnaire aided interview within 24 h of the emergency. Five assessors (3 obstetricians and 2 psychiatrists) were asked to determine capacity to consent from audio recordings of the interviews.

Results: All 5 assessors determined 59 % of women to have capacity to consent to treatment and 2 % of women to lack capacity. In 39 % of women there was some disagreement between assessors. Using a majority decision (3 assessors in agreement), 14 % of women lacked capacity. High pain scores, young age and no previous history of theatre deliveries were associated with more incapacity judgments, whilst parity and history of mental illness were not. Using a 7point Likert scale only marginally improved agreement between assessors, compared to their binary decision.

Conclusion: It is often assumed that it is rare to lack capacity in an obstetric emergency procedure during childbirth, but these data suggest that incapacity may be relatively common. In particular, severe pain is a demonstrable risk factor for impaired capacity. Wide variation between assessors questions the validity of current commonly employed (informal) methods used in clinical practice to assess capacity to consent during OEP.

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1. Introduction

Consent forms the basis for patient care in medicine. Capacity to consent is the cornerstone of autonomous decision making and included in law. Procedures undertaken without consent or with invalid consent because of incapacity are equally unacceptable and expose a clinician to allegations of assault. However, when outcomes are good, this most often does not become an issue. The Royal College of Obstetricians and Gynaecologists (RCOG) suggests that legal advice be sought in cases where women may lack capacity to consent to treatment [1], but there is no specific guidance on how the capacity assessment should be conducted.

For England and Wales, the Mental Capacity Act 2005 (MCA) states that all patients are assumed to have capacity. Many countries have similar provisions. Where capacity is lacking, the clinician acts in the patient's best interests and in accordance with

what the patient might have wished for herself before capacity was impaired. The MCA 2005 sets out a test for capacity and defines how best decisions can be determined [2]. The four pillars of capacity are well known: a patient has to be able to understand the information relevant to the decision; be able to retain that information; be able to use or weigh up the information and be able to communicate her decision [3]. It follows that incapacity may be judged when one or more of these conditions are absent. In the MCA, incapacity requires a disturbance in the functioning of brain or mind [3], which may be a permanent or temporary. However, when a temporary disturbance occurs (for example in severe pain, hypotension or sepsis), incapacity can occur for a limited period of time, including during life threatening emergency situations. This impaired capacity may not always be obvious; the clinical team, patient and family are most often in agreement about proposed care or intervention, and thus provide confirmation regardless of whether true capacity is present or not.

The RCOG emphasises that special care should be taken when obtaining consent in women who are in labour and in pain [1]. Many obstetricians and midwives incorrectly believe that the

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assessment of capacity to consent is to be carried out by psychiatrists, but the MCA states that the clinician delivering care is responsible for carrying out a capacity assessment [3]. In *Montgomery versus Lanarkshire Health Board* (2015) [4] the court decision increased the burden of information on doctors even further, deciding that it is ultimately for patients to decide that the risks relevant to them have been adequately communicated. In the case in question, which was not an emergency, the court also ruled that lack of time or resources can never be an excuse for a limited consent process. This complicates the seeking of consent in Obstetric emergencies as clinicians may be unable to make full formal capacity assessments difficult to achieve because of time pressures.

There is good evidence from medical and psychiatric research to suggest that clinicians routinely over-estimate their patients' capacity [5]. In addition, a large systematic review showed that 34 % of medical and 45 % of psychiatric patients across inpatient and outpatient settings lack capacity [6]. Hardly anything is known about incapacity in obstetric settings. One audit examined the prevalence of incapacity in OEP. In an audit of 26 women, 31 % of the women interviewed within 24 h of the emergency admitted not to be able to remember any complications mentioned during the consent process [7]. Doubts about full capacity in a further 18 % were raised by the auditing team because recall about the consent form (for example remembering the colour of the consent form, or who had taken the consent at the time) was poor or absent [7].

R-CAT (Retrospective Capacity Assessment Tool)

Understanding of emergency: Can you explain why you were taken to theatre?
Understanding: Yes/No

Appreciation of emergency: were you sure you had that problem?
Appreciation: Yes/No

Do you remember signing any consent form before you went to theatre?
If yes, do you remember the colour of the form? What colour?

Were you in pain when you were explained and signed the form?

On a scale of 1 to 10, how would you score your pain?
What analgesia did you have prior to going to theatre?

Do you remember who took the consent? By role or description?
Did you read the consent form?

Before going to theatre did you understand what procedure was going to be performed?

Check **understanding** of the procedure by asking, Can you explain to me....?

Check **appreciation of the benefit procedure** was going to offer:
Did you think the procedure proposed was going to sort out the problem you had?
What would have happened, if you had not had the procedure proposed?
Appreciation: Yes/No

Check **reasoning:** simple forceps/difficult forceps/suction cup/caesarean section/ do nothing
a. Out of the above which one did you think was the right choice for you?
b. And why did you think that was the right choice for you?

Do you remember any risks of complications you were told of before signing the consent form? Check understanding for these risks if possible.

Did you express your choice for the procedure proposed/ chosen?
Signing the form / verbally agreeing.

Can you express how you felt before going to theatre in 1-2 sentences?

FINAL IMPRESSION

Patient had capacity at the time of consenting for the procedure in theatre: YES/NO

Fig. 1. R-CAT (Retrospective Capacity Assessment Tool).

These served as proxy examples for recall, which is an important aspect of capacity. The audit suggests that there may be a much higher number of patients with incapacity during OEP than previously thought. It is important to examine whether this discrepancy is real, because it will have a significant impact on guidelines for OEP.

In a survey of 196 women in Scotland, Sturgeon et al. found that although most primiparous women thought they would have a normal delivery (66%), only 38% did so [8], which highlights the need for adequate and informed consent presented in a manner that the patient can make sense of. Respect for autonomous decision making and the aspiration of shared understanding and decision making between a woman and her clinicians may be compromised by preconceived expectations to have a normal delivery, leading to a sense of failure when medical interventions are necessary. This has led to some hospitals taking consent on every patient on a 'just in case' basis. However, many clinicians consider this to be an intrusion into the normal birth process. Most, if not all, maternity units undertake antenatal classes and provide information on interventions in various forms, but the process is inconsistent, untested and not quality assured, and the range of practice or effects on improving preparedness to consent to an emergency intervention in the UK is not known. This study examined the prevalence of incapacity more formally in a larger sample, using five assessors from obstetrics and psychiatry to assess retrospectively whether a woman was likely to have had capacity prior to the OEP when her consent was obtained. A number of factors were examined that might be associated with diminished capacity.

2. Methods

The study design was a retrospective assessment of estimated capacity based on an audio-recorded semi-structured questionnaire aided interview within 24h of the emergency. The interviews were standardised and used the principles of capacity assessments as outlined in the MCA 2005. They relied on the patient's memory of the consent process. The assessors were asked to determine whether the patient had capacity or not (binary assessment: yes or no), using their normal clinical judgement. Three assessors were obstetricians and two were psychiatrists. We included psychiatrists because they are usually considered experts in complex capacity assessments. The retrospective assessment was necessary because a formal capacity assessment with a validated tool takes too long to be performed in an emergency, rendering such a methodology unsafe and impossible to implement. Even short capacity assessment tools take well over 10 min. We accepted that retrospective capacity assessments can only be estimates of capacity but we worked to optimise the assessors' ability to come to an accurate estimate by using a number of aides:

- 1 The assessment was aided by the Retrospective Capacity Assessment Tool (R-CAT) questionnaire designed by the study team. It is based on the principles of the Mental Capacity Act (2005) and widely used prospective capacity assessment tools such as the MacArthur's Capacity Assessment Tool [9] or the Aid to Capacity Evaluation (ACE) [10].
- 2 The R-CAT incorporates the MCA (2005) principles by assessing the recall, understanding and reasoning of patients.
- 3 As an additional measurement, the assessors recorded capacity scores on a 7 point Likert scale, to help assess degrees of capacity for all assessments.

The assessors were instructed to give patients the benefit of the doubt in interpreting answers given by patients in their own words at their lay level of understanding, in line with the practice that capacity is presumed where it is not demonstrated to be lacking. In order to make sure that the questions were understood, the interviewers provided clarity in line with the usual practice of discussing clinical events in a manner aimed at each individual patient's understanding, with follow up prompting to ensure clarity of what was being asked. Since the interviews were retrospective, and without time pressures, the ability to confirm understanding of each individual was possible. Understanding was tested by open questions about what happened, followed by questions about the procedure itself with benefits and risks. The assessors assessed understanding to a basic level in order to incorporate intellectual ability. This was aided by factual questions about recall such as the colour of the consent form and who discussed the consent etc. The appreciation of the emergency situation was tested with a closed questions, which was expanded on when necessary. Reasoning was tested with a series of part open questions.

For details see Fig. 1. Comprehensively demonstrates R-CAT.

Ethics Committee approval was obtained: REC reference: 15/WA/0273. The setting was a secondary care high-risk maternity unit in North Wales. A consecutive sample of 93 women (we aimed for over 90; 102 were recruited; 93 had sufficient data for analysis) were recruited, mainly by one researcher (NS) over an 8-month period and interviewed within 24 h of delivery. We excluded women with learning disability, age under 16 years and organic mental disorders. Valid consent to participate in the audio recorded interviews was obtained; identification was anonymised. The audio files and data sheet were sent securely to all 5 assessors and scored. Table 1 shows the baseline characteristics of patients.

The primary outcome measure was a binary decision as to whether capacity to consent to OEP was present or absent at the time of the emergency. An unweighted and a linearly weighted Cohan's kappa statistic were calculated to measure inter-rater reliability between pairs of assessors using the Likert scale scores. A global Cohen's kappa (Fleiss-Cuzirk extension) was calculated across all 5 assessors on the binary decision of capacity present or

Table 1
Baseline patient characteristics.

Age (yrs)	Mean age 29.5yrs	SD 6.2	Range 15-41
Parity(n = 93)	Nulliparous 60	Parous 33	
Previous emergency delivery in theatre	Yes 21	No 72	
Previous psychiatric diagnosis (mainly depression)	Yes 12	No 81	
Pain	No pain 34	Moderate pain 14	Severe pain 43
Main analgesia before transfer to theatre	Epidural 51	Combination * 12	Entonox 10 Nothing 20
Emergency for transfer to theatre**	Category 1 8	Category 2 85	

* Morphine, pethidine, Entonox.

** Category 1: there is immediate threat to the life of mother/baby. Category 2: there are problems but not immediately life threatening.

Table 2

Frequency of answer per assessor (3 'undecideds' were recorded as 'yes' as capacity is presumed to be present [1]).

	Assessor1*	Assessor2*	Assessor3*	Assessor4**	Assessor5**
No Capacity, n (%)	26(28 %)	33(36 %)	6(7 %)	17(19 %)	4(4 %)
Capacity present n(%)	67(72 %)	60(64 %)	87(93 %)	75(81 %)	87(95 %)
Missing, n	0	0	0	1	2

* Obstetrician.

** Psychiatrist.

absent. Pain, previous delivery in theatre, history of mental illness, age, and parity were analysed as possible associated factors that may influence capacity.

Three different statistical categories of incapacity were used: category 1 when at least one assessor scored 'no' (no capacity); category 2 when two or more scored 'no', and category 3 called a majority (when three or more) scored 'no'. The binary outcome of capacity was modeled with the covariate age, using a binary logistic regression. The relationship between capacity and the categorical factors were assessed using odds ratios. For that purpose, pain scores using a pain scale from 0 (no pain) to 10 (the worst pain imaginable) were recorded as no pain (score 0), moderate pain (score 1–5), and severe pain (score 6–10). The 7 point Likert capacity scale was rated from 1 to 7, with 1 (no capacity) and 7 (full capacity).

Sample size was balanced to allow regression modelling of the 5 variables identified from the RCOG consent advice and to shrink the confidence intervals to approximately +/- 0.1 for the kappa statistic, based on the estimated disagreement from an analysis of a small sample with 3 raters during the initial audit.

3. Results

Table 2 shows the prevalence of incapacity. The 5 assessors reported the prevalence of lack of capacity as 4 %, 7 %, 19 %, 28 % and 36 % respectively (Table 2). There was full agreement in 59 % of cases that the participants had capacity and 2 % had not. In the remaining 39 % there was some disagreement in assessors. When defining the assessors to be "in agreement", as that at least 4 assessors agreed that there was agreement in 71 cases, with 22 disagreements. When applying this, straight majority vote of 3 assessors agreeing, 80 women were deemed to have capacity and 13 were not. On that basis, our estimate of prevalence incapacity is 14 %.

The agreement between assessors on the 7point Likert capacity scale ranged between -0.07 (-0.10,-0.05) and 0.30 (0.18,0.41), median 0.09, for unweighted kappa where a disagreement of 1 point was assigned the same weight as a disagreement of any other size. When assessed by using a linearly weighted kappa this improved to a range of between 0.14 (0.04, 0.24) and 0.53(0.41-0.64), median 0.23. These agreements are poor.

When the Likert scales were used to make the equivalent binary rating of capacity being either present or absent (scores 1 to 3: no

capacity; scores 4 to 7: capacity) and a global kappa was calculated, the agreement was assessed as 0.32 (0.26, 0.39), which would be described statistically as fair agreement. This was a better agreement between assessors than the binary outcomes, but the improvement was not substantial.

Young age, the presence and severity of pain and no previous theatre deliveries were associated with rating of incapacity whilst parity and previous psychiatric history were not (Table 3).

4. Strengths & limitations

When assessing capacity retrospectively there is an inherent risk that the initial situation has changed at the time of assessment (absence of pain, recall, debriefing, family discussion of events, euphoria and emotionality of childbirth). The actual circumstances at the time of the decision may become altered leading to wrong assumptions and biases. There is a risk that the retrospective assessment largely measured the quality of the consent discussion at the time of the emergency rather than patient capacity. However, there is no evidence to assume that the consent process was not done in accordance with national College guidelines and should be assumed to have been reasonable under the time pressured emergency circumstances. Prospectively, it is impossible to perform a comprehensive capacity assessment in emergencies with a validated tool that may take at least 15 min to complete [11]. Retrospective assessments based upon the fundamental principles of a validated tool [9] and current legislation [3] are the next best option. The assessors and the authors fully accept that any retrospective assessment of capacity can only be an estimate of capacity, but this is better than having no data for these difficult circumstances.

The strength of the study is that the assessors came from both obstetrics (three) and psychiatry (two) with varying degrees of knowledge about capacity assessment. All assessors reviewed the same audio recorded interviews which followed a structured format based on widely used assessment tool and the principles of the Mental Capacity Act (2005). The semi-structured interviews ensured that the same information was acquired from all participants.

Concerns about causing undue distress and therefore potential harm to low risk women were expressed at the Ethics Committee, which restricted our study to women already in a relatively high-risk category on our consultant-led unit. Overall, we found that the

Table 3

Odds ratios for having 'no capacity', as classified by one 'no capacity', or two 'no capacity' or by majority (three) 'no capacity' judgement.

	Any no capacity rating n = 38	At least two no capacity ratings n = 26	Majority (3) no capacity ratings n = 13
Parity=0	1.93 (0.70,4.40)	1.52 (0.56, 4.17)	1.30 (0.39, 4.38)
Previous psychiatric history	1.44 (0.43,4.86)	1.27 (0.35,4.66)	2.00(0.06, 4.23)
No previous theatre deliveries	10.6 (2.30, 47.6)*	11.63 (1.48,90.91)*	4.35 (0.53, 37.7)
Moderate pain	3.86 (1.01, 14.69)*	8.89 (1.47, 53.71)*	5.50 (0.46, 66.32)
Severe pain	4.44 (1.59, 12.36)*	11.52 (2.44, 54.37)*	10.00 (1.21, 82.6)*
Age**	-0.12 (-198,-0.42)***	-0.130 (-0.043,-0.213)***	-0.147 (-0.254,-0.041)***

* p < 0.05 severe pain was significant in all models.

** Older vs younger as analysed by binary logistic regression model.

*** Negative sign shows that younger ages are more likely to be classified as not having capacity than older ages.

increased stress felt by women expecting a low risk normal labour who end up undergoing emergency intervention was balanced for some women by the relief that their baby was delivered safely.

A number of variables were not standardised in the study design, which is why we aimed to get as consecutive a group of women as possible. Educational attainment, the standard and type of preparedness for labour, cognitive bias and possible variations in interpretation and gauging of the ability to understand stressful events (for the patient and practitioner) also demonstrate how difficult it may be to assess capacity in an emergency. Agreement on patient capacity may always be difficult in such circumstances. Such variables lend themselves to further study in a randomised trial of interventions aimed at improving capacity to consent in an obstetric emergency.

5. Conclusions

Incapacity in Obstetric Emergency procedures during childbirth may not be at all rare, but relatively common. We have estimated the prevalence of incapacity at around 14 %, but the range is likely to be more variable and varies between assessors. This is less than the average of 34 % incapacity estimated for medical patients [6] generally, but it is still a sizeable minority.

Studies show that clinicians are good at identifying patients who clearly lack capacity but tend to overestimate capacity in patients generally [5,6,10,13]. In this study, assessors from different backgrounds (psychiatry or obstetrics) seemed to agree when patients have capacity in obstetric emergency situations, but there was little agreement when it came to potential incapacity. This sheds doubt on the construct validity of capacity in highly pressured emergency obstetric situations [14] and the clinicians' ability to make accurate capacity assessments in such circumstances. We hypothesise that this may also reflect clinicians' inherent wish to find that women have capacity, possibly because of fear of the consequences of considering or finding that someone does not have capacity.

Our results have shown that retrospective capacity assessments in obstetric emergencies do not show good inter-rater reliability. The introduction of a Likert scale instead of a binary outcome only marginally reduced the disagreement between assessors (from poor to fair). This is not sufficient to suggest the introduction of a Likert scale as an assessment aid in capacity assessment. However, it highlights the relative subjectivity of capacity assessments in situations that are time critical and clinically difficult. Furthermore, it exemplifies the tension between the legal obligation to have a binary outcome and the clinical reality of capacity decisions that include grey areas and that do not lend themselves to clear binary outcomes. For clinicians, this leads to the need to make dichotomous choices in high pressure situations. Training on capacity assessments in such situations may have to be improved.

Experience of pain and no previous theatre deliveries should be considered as increasing the risk of incapacity, while parity, age and previous psychiatric history do not appear to increase that risk. These recommendations apply in a typical obstetric population as seen in a district general hospital.

For England and Wales, we suggest that the MCA (2005) should be more actively considered in clinical practice on labour wards [15] as it protects patients and clinicians by confirming doctors' decision-making within a legal framework. Patients are protected by the Act's requirement to make best interest decisions. However, in law the fetus has no legal status until birth, so *de facto* the mother's best interests take primacy. Best interest decisions must be taken in light of any prior knowledge of a patient's wishes, which re-enforces the need to actively consider any advanced communication in a patient's records or mother's birth plan [12]. Staff are generally protected in law because best interest decisions

must be outlined and documented. Other countries should apply their respective capacity legislation with the possibility of incapacity clearly in mind.

Thus, while the law in most countries expects clinicians to assume capacity, there may have been an over-reliance on this, leading to incapacity being considered only infrequently, until there is disagreement to a proposed intervention or when there is an untoward incident.

Treating clinicians are responsible for capacity assessments and best interest decisions for the patients that they care for in cases of incapacity. Disagreements may occur where incapacity is declared and these may lead to increased tension, inter-professional challenge and potential conflict with the woman and her family. Adequate planning for such events may reduce conflict and dysfunctionality within treating teams. This includes training needs for capacity legislation across clinicians. It also gives antenatal care opportunities to discuss emergency situations with pregnant women in advance in order to raise awareness of the difficulties that may arise during birth emergencies.

The way that individuals learn as adults varies. Learning styles vary (for example, auditory, visual or kinaesthetic), so it may be important to present information in a variety of formats for later synthesis and recall.

Consent is an on-going process. In cases where patients may temporarily or permanently lack capacity to consent, best interest decisions have to be made. To optimise those decisions, clinicians rely on prior knowledge of a patient's wishes, which may exist from an antenatally derived birth plan, which should be discussed and confirmed in early labour. Information on consent practice and the effectiveness of steps to improve the consent process are lacking. This is an area where improvements are possible but would need to be balanced against the woman's willingness to discuss emergency situations antenatally.

Clearer guidance should be available to obstetricians in order to assist them in assessing capacity in emergencies. One avenue of investigation would be to examine the construct validity of capacity in such situations. There is a need to develop, assess and introduce strategies that reduce the ambiguity around potential incapacity. The effect of the Montgomery ruling on decisions about what constitutes a material risk in novel situations has not yet been tested fully through the courts process (in both low and high risk pregnancies). Notwithstanding this, there is an urgent need to conduct further research into capacity estimation. This should include qualitative research. Until then obstetricians must increase their awareness and use of the MCA (2005) or risk losing the protection it provides, if they do not use it when they should do so.

Funding

This study was funded by BCUHB (Betsi Cadwaladr University Health Board).

Ethics committee approval

This study was approved by ethics committee Wales REC 4, on the 27th November 2015.

REC reference: 15/WA/0273.

Declaration of Competing Interest

The authors report no declarations of interest.

Acknowledgements

Dr Kanthi Pydah gave support and helped with a few participants initial recruitment in the early phase of this study.

This paper was reviewed by a patient panel of women from our maternity service with a range of experiences and outcomes, including normal delivery and immediate caesarean section. They made suggestions on how the paper was constructed and phrased, highlighting the importance of this issue and agreeing with the findings from their own experiences.

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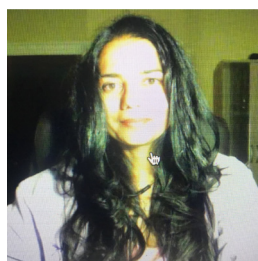


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