Systematic review on the prevalence of lack of capacity in medical and psychiatric settings

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Recent court cases in England and Wales have refocused attention on patients' decision-making capacity to consent. Little is known about the prevalence of incapacity across specialities but decision-making capacity is likely to be overestimated by clinicians. The aim of this systematic review is to estimate the prevalence of incapacity to consent to treatment or admission in different medical and psychiatric settings, and compare the two. We conducted an electronic search following PRISMA principles and included 35 studies in psychiatric and 23 studies in medical settings. The 58 included studies revealed 70 data sets across all settings. For psychiatric settings the weighted average proportion of patients with incapacity was 45% (95% confidence interval (CI) 39-51%). For medical settings, the weighted average proportion of patients with incapacity was 34% (95% CI 25-44%). The two groups are not significantly different from each other in terms of the proportion of incapacity (p=0.92). A considerable number of medical and psychiatric patients lack capacity to make treatment and assessment decisions. Clinicians should be more alert to the possibility that their patients may lack decision-making capacity. Assessment of capacity should be frequent using the appropriate legal frameworks to act in the best interest of patients.

KEYWORDS: Capacity, incapacity, medicine, psychiatry, prevalence

Introduction

Decision-making capacity is the basis for medical decision making. Many countries have introduced legislation to regulate decision making for people who lack capacity; in England and Wales this is the Mental Capacity Act (MCA), 2005.¹ However, there is little guidance to aid clinicians to estimate the expected prevalence of incapacity on their wards. Previous studies suggested that a mini mental state examination score below

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No review so far has compared prevalence of incapacity in two or more different settings. The aim of our review is to estimate the prevalence of incapacity to consent to treatment or admission in different settings. We have included medical and psychiatric patients covering inpatient, outpatient and other settings as well as subspecialities within psychiatry. The results provide guidance to the level of incapacity that clinicians should expect in a variety of different settings. We also compared medical and psychiatric settings to see whether there is a significant difference.

Methods

We followed PRISMA principles for systematic reviews. We searched all articles published until November 2013 in Embase, Medline or Psychinfo. We used the following search terms: mental competency/or capacity assessments or decision making/informed consent/or consent to treatment in medical wards or hospital units/inpatients or inpatients hospitals, psychiatric/or schizophrenia/or depressive disorder/or mental disorders/or psychiatric patients substance-related disorders/or mood disorders.

Inclusion criteria:

- > participants: any medical or psychiatric patients
- > assessment: conducted with a validated tool
- > data about the prevalence of incapacity were either stated directly or were possible to calculate from the available data
- data were presented in a binary way (either patients had capacity or not)
- > any setting including mixed settings
- > reporting: published in peer review journals and available as electronic or paper full text in any language.

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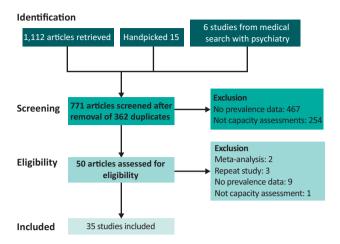


Fig 1. PRISMA flow chart 1 - psychiatry group.

Exclusion criteria:

- > no validated tool was used to assess capacity
- > prevalence data were not available or possible to calculate
- > data were given in a non-binary form
- > no sample size was given.

Abstracts were cross-checked and full text articles were independently screened by two authors. Any differences were discussed and settled. We calculated average percentage prevalence of incapacity for various subsettings separating medical and psychiatric settings. We calculated the statistical differences between medical and psychiatric settings. We made the reasonable assumption that due to the large number of studies heterogeneity could be significant, so initial analysis used the random effects model.

Search results

The search revealed 1,112 and 134 abstracts in psychiatry and medicine respectively (see PRISMA flow charts, Figs 1 and 2).

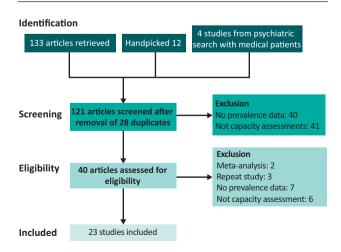


Fig 2. PRISMA flow chart 2 - medicine group.

We included 35 studies in psychiatric (references 5–39) and 23 studies in medical settings (references 4,13,19,29,34,40-57). The 58 included studies revealed 70 data sets across settings (inpatient, outpatient, forensic etc). Four data sets were excluded because their results showed 0% incapacity. Two studies are included where incapacity was 100%; whether this was correct or a typographical error cannot be verified. Confidence intervals (CI) refer to 95% confidence. Figs 3 and 4 show the forest plots for medical and psychiatric studies separately. Table S1 summarises the included studies.

Results

Estimates of prevalence and heterogeneity

A common solution to analysis where the dependent variable is a proportion is to use a logit transform. The inverse variation weighted prevalence for decision-making capacity for all included studies was 41% (95% CI 35.6–46.2%). Heterogeneity was significant (Cochran Q 601; degrees of freedom (df) 69; p<0.001). Differences between all studies were large, therefore requiring a random effects model. The inconsistency value shows the amount of variation between studies due to heterogeneity was 89% (95% CI 86–91%). The test for subgroup differences was not significant (Cochran Q 0.66; df 1; p=0.42).

For psychiatric settings, the inverse variance weighted proportion of patients with incapacity was 45% (95% CI 39–51%). Heterogeneity was significant (Cochran Q 300; df 42; p<0.001). Variance between studies was large (I² inconsistency 86% (95% CI 82–89%)), meaning the amount of variation between studies due to heterogeneity was 86%.

For medical settings the inverse variance weighted proportion of patients with incapacity was 34% (95% CI 25–44%). Heterogeneity was significant (Cochran Q 267; df 26; p<0.001), with inconsistency I² at 90% (95% CI 87–93%), showing variation between studies due to heterogeneity was 90%.

Comparing medical and psychiatric settings

Table 1 shows the average percentage results for all subsettings. Psychiatric and medical settings are not significantly different from each other in terms of the proportion of incapacity (Cochran Q 0.66; df 1; p=0.44).

Discussion

Our results show the average percentage of patients with incapacity on psychiatric wards is 45%. In medical settings the number is slightly lower with 34%. The figures shown above are similar to results from previous reviews, and we found no significant difference between psychiatric and medical settings. However, differences between diagnostic groups within psychiatry have been shown to be significant in previous studies. Patients with psychosis, dementia and mania are much more likely to lack decision-making capacity than those with depression or personality disorder.^{36,37,58} In medicine, our results suggest a large number of patients lack decision-making capacity, with known higher levels of incapacity in those with learning disability, delirium and neurological disease.^{41,43,49,50}

Prevalence of lack of capacity in medical and psychiatric settings

Study	Events	Total	÷	Proportion	95%-CI	W(random)
Martin 2008	13	16		0.81	[0.54; 0.96]	3.2%
Martin 2008	5	16		0.31	[0.11; 0.59]	3.6%
Dymek 2001	16	20		0.80	[0.56; 0.94]	3.5%
Ripley 2008	9	20		0.45	[0.23; 0.68]	3.8%
Kitamura 1998	2	23		0.09	[0.01; 0.28]	2.9%
Fitten 1990	7	25		0.28	[0.12; 0.49]	3.8%
Moser 2002	1	25		0.04	[0.00; 0.20]	2.2%
Triebel 2009	14	26	1	0.54	[0.33; 0.73]	4.0%
Ranjith 2004	11	31		0.35	[0.19; 0.55]	4.0%
Okonwo 2007	31	31		1.00	[0.89; 1.00]	1.5%
Arscott 1999	35	40	——————————————————————————————————————	0.88	[0.73; 0.96]	3.7%
Barton 1996	20	44		0.45	[0.30; 0.61]	4.2%
Etchells 1997	9	48		0.19	[0.09; 0.33]	4.1%
Karlawish 2005	29	48		0.60	[0.45; 0.74]	4.3%
Fitten 1990	34	51		0.67	[0.52; 0.79]	4.3%
Candilis 2008	1	51	-	0.02	[0.00; 0.10]	2.2%
Okonwo 2007	32	60		0.53	[0.40; 0.66]	4.3%
Billick 2001	2	67	—	0.03	[0.00; 0.10]	3.0%
Rahman 2012	15	68		0.22	[0.13; 0.34]	4.3%
Rahman 2012	2	69	-	0.03	[0.00; 0.10]	3.0%
Rahman 2012	53	72		0.74	[0.62; 0.83]	4.3%
Vellinger 2004	19	80		0.24	[0.15; 0.35]	4.3%
Grisso 1995	10	82		0.12	[0.06; 0.21]	4.1%
Billick 1997	4	100	-	0.04	[0.01; 0.10]	3.6%
Etchells 1999	30	100		0.30	[0.21; 0.40]	4.4%
Fassassi 2009	52	195		0.27	[0.21; 0.33]	4.5%
Vanessa 2004	121	302		0.40	[0.34; 0.46]	4.6%
Random effects model		1,710		0.34	[0.25; 0.44]	100%
Heterogeneity I squared = 90.3%; ta	u squared = 0.9	9437; p=0.00	01			
			0 0.2 0.4 0.6 0.8 1			
			0 0.2 0.4 0.0 0.0 1			

Fig 3. Meta-analysis: random effects model, medical settings. CI = confidence interval.

Comparisons with other studies

A variety of studies have looked at the prevalence of mental incapacity in medical and psychiatric settings but there have only been two systematic reviews^{2,59} and no review has compared medical and psychiatric percentage prevalence data before. For psychiatric settings, Okai *et al*⁵⁹ compared a variety of decisions for which decision-making capacity was tested,

Table 1. Results for all subsettings

Tuble T. Results for all subsettings.							
Group	Setting/patient group	Total data sets, n	Total patients, n	Percentage of incapacity (weighted average)			
Psychiatry	Inpatients, adult	25	1,597	47			
Psychiatry	Outpatient, adult/old	2	164	58			
Psychiatry	IP/OP, adult/old	5	180	43			
Psychiatry	Old age psychiatry, inpatient	6	277	42			
Psychiatry	Forensic psychiatry, IP/OP/prison	4	240	40			
Psychiatry	CAMHS, IP	1	25	28			
Medical	IP	13	1,022	34			
Medical	OP	8	336	62			
Medical	IP/OP	5	285	21			
Medical	Paediatric OP	1	67	3			
CANNES - child and adolescent montal health conjects ID - inpatient: OD - outpatient							

CAMHS = child and adolescent mental health services; IP = inpatient; OP = outpatient.

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Study	Events	Total		Proportion	95% CI	W(random)
Bellhouse 2003	6	12		0.50	[0.21; 0.79]	1.9%
Gillman 2003	12	13		0.92	[0.64; 1.00]	1.0%
Bellhouse 2003	2	14		0.14	[0.02; 0.43]	1.4%
Morris 1993	6	15		0.40	[0.16; 0.68]	2.0%
Morris 1993	1	15		0.07	[0.00; 0.32]	1.0%
Palmer 2002	4	16		0.25	[0.07; 0.52]	1.9%
Billick 1996	5	20		0.25	[0.09; 0.49]	2.0%
Wong 2000	7	20		0.35	[0.15; 0.59]	2.2%
Wong 2000	2	21	i	0.10	[0.01; 0.30]	1.5%
Wong 2000	14	21		0.67	[0.43; 0.85]	2.2%
Cohen 2004	21	21		1.00	[0.84; 1.00]	0.6%
Cohen 2004	9	22		0.41	[0.21; 0.64]	2.3%
	7	25		0.28	[0.12; 0.49]	2.2%
Billick 1998	6	25		0.24	[0.09; 0.45]	2.2%
Kitamura 1998	5	25		0.20	[0.07; 0.41]	2.1%
Moser 2002	18	27		0.67	[0.46; 0.83]	2.3%
Kovnick 2003	1	30	+	0.03	[0.00; 0.17]	1.0%
Vollmann 2003	21	31		0.68	[0.49; 0.83]	2.4%
Vollmann 2003	7	35		0.20	[0.08; 0.37]	2.3%
Grisso 1997	, 13	40		0.32	[0.19; 0.49]	2.5%
Paul 1999	38	40		0.95	[0.83; 0.99]	1.5%
Vollmann 2003	23	43		0.53	[0.38; 0.69]	2.6%
Appelbaum 1981	31	50		0.62	[0.47; 0.75]	2.7%
Beckett 2006	25	50		0.50	[0.36; 0.64]	2.7%
Candilis 2008	16	52		0.31	[0.19; 0.45]	2.6%
Roth 1982	17	57		0.30	[0.18; 0.43]	2.7%
Hoffman 1992	39	60		0.65	[0.52; 0.77]	2.7%
Mukherjee 2001	31	65		0.48	[0.35; 0.60]	2.8%
Grisso 1995	39	75		0.52	[0.40; 0.64]	2.8%
Wong 2005	53	81		0.65	[0.54; 0.76]	2.8%
Kennedy 2009	29	88		0.33	[0.23; 0.44]	2.8%
Dunn 2007	52	91		0.57	[0.46; 0.67]	2.8%
Grisso 1995	22	92		0.24	[0.16; 0.34]	2.8%
Bean 1996	28	96		0.29	[0.20; 0.39]	2.8%
Maxmin 2009	67	99		0.68	[0.58; 0.77]	2.8%
Norko 1990	30	100		0.30	[0.21; 0.40]	2.8%
	47	100		0.47	[0.37; 0.57]	2.9%
Appelbaum 1998	82	102		0.80	[0.71; 0.88]	2.8%
Dunn 2003	35	102		0.32	[0.23; 0.42]	2.9%
Skipworth 2012	49	112		0.44	[0.34; 0.53]	2.9%
Cairns 2005	85	113		0.75	[0.66; 0.83]	2.8%
Melamed 1997	70	160		0.44	[0.36; 0.52]	3.0%
Fragues 2007	116	200		0.58	[0.51; 0.65]	3.0%
Owen 2009	110	200		0.50	[0.01, 0.00]	5.676
Random effects model		2,483	-	0.45	[0.39; 0.51]	100%
Heterogeneity I squared = 88%; tau squared = 0.5129; p=0.0001						
			0 0.2 0.4 0.6 0.8 1			

Fig 4. Meta-analysis: random effects mode, psychiatric settings. CI = confidence interval.

but many of these decisions, such as admission or specific treatments, only had a small number of studies included with a wide variety of results.

In the famous CATIE study the authors looked at the longitudinal consent-related abilities among research participants with schizophrenia, and found that 56% of 1,158 participants had a stable pattern of MacCAT-clinical research (CR) understanding scores, with 24% deteriorating and 20% improving over an 18-month period.⁶⁰ Sessums *et al*² examined the prevalence of incapacity and the accuracy of capacity assessments in adult medical patients. They concluded that 26% of medical patients lacked capacity compared with 3% of healthy elderly controls. They added that 'while physicians routinely missed the diagnosis of incapacity (only recognising 42% of incapable patients), they were usually correct when they made the diagnosis'. Owen *et al*⁶¹ found qualitative differences in incapacity between psychiatric and medical patients. They concluded that 'the appreciation ability had more salience to decision-making capacity in a psychiatric setting and the reasoning ability had more salience in the medical setting', thus confirming that the two settings have different priority problems in terms of capacity.

While appreciation of the problem or necessity for treatment is more prominent in psychiatric patients who lack decisionmaking capacity, medical patients primarily struggle with reasoning when they lack decision-making capacity. When we looked at different settings, such as inpatients versus outpatients in various types of psychiatric settings, the differences were smaller than we expected and not statistically significant. Similarly, differences between inpatients and outpatients in either medical or psychiatric settings were not statistically significant.

Considering the legal context

To put these figures into a current context, the MCA in England and Wales and the Adults with Incapacity (Scotland) Act 2000 for Scotland set out the legislative frameworks for clinicians describing the process of how to deal with incapable patients and how to act in their best interest. For England and Wales, the recent Supreme Court decisions on the linked appeals regarding the cases of P versus Cheshire West and Chester Council and P and Q versus Surrey County Council⁶² have changed the obligation on hospitals and registered care homes to apply for an authorisation under the Deprivation of Liberty Safeguards (DoLS) when a patient who lacks capacity is subject to continuous supervision and control, and not free to leave. These two questions were termed the 'acid test' by Lady Hale in the Supreme Court judgment.⁶³ This scenario is common in hospital settings with regard to patients who lack decision-making capacity. In fact, our results show that lack of decision-making capacity should be assumed in at least 17% of medical patients at any one time, most of whom will be subject to continuous supervision and control because of the institutionalised way in which hospitals operate, and would not be free to leave if they wanted to. A possible consequence is a sharp increase in DoLS applications, which will have significant resource implications as the process is cumbersome. The UK government has already asked the Law Commission to review the DoLS legislation.

Limitations and strengths

This meta-analysis yielded a high level of heterogeneity between studies. Even though we only included studies with valid measurement tools, it is not clear those tools could always answer questions around law and ethics. In addition, cut-off points for various tools are still being investigated. The high level of heterogeneity between studies is an important limiting factor that requires a cautious interpretation of our results. In studies about incapacity in different settings, some heterogeneity is expected because of the nature of the research topic. There is also a risk of sampling bias in the available data because of the settings chosen. However, we included more participants than any previous review of this kind, which is its main strength. For the first time, we have directly compared psychiatric with medical patients and attempted to cluster results by subsettings. However, particular caution is necessary when interpreting the results about subsettings because of the often highly selective nature of the patient populations in those settings (for example dementia patients in outpatient settings). In addition, we did not weight the studies according to their quality. We included two subgroup samples with results such as 100% decision-making incapacity. These studies did, however, not contribute much to the overall result because of their very small sample sizes.

Conclusions and practical implications

We have examined decision-making capacity across different types of treatment decisions using different, but validated measures of decision-making incapacity. We did not find any difference between medical and psychiatric populations in the frequency of decision-making incapacity when variously measured. The results of this review should serve as a pertinent reminder to clinicians to consider carefully how much capacity an individual patient has. While the legislative frameworks assert an assumption of capacity, in reality, clinicians often assume capacity where it may be lacking. The consequences of this are less frequent and less rigorous discussions about the best interests or potential detriment to the patient. More caution and more frequent capacity assessments are needed to rectify this situation.

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