Using Structured Professional Judgement (The Dundrum Capacity Ladders) for Informant Rating of Functional Mental Capacity

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Introduction

The Dundrum Capacity Ladders (DCL) is a new semi structured interview that has previously been validated as an effective measure of functional mental capacity in a population of forensic male patients with schizophrenia. There is a link between occupational, social and symptomatic functioning, with neurocognitive ability and functional mental capacitates scores assessed by the DCL [1].

Scores on the DCL are assigned on a stratified scoring system measuring ability to understand, reason and appreciate the personal importance of the decision at hand and to communicate a decision in the domains of welfare, finances and personal health. A mark of 0-100 is given, depending on where they score in each of the four areas of capacity [1].

The UK Mental Capacity Act 2005 led to an increase in the number of mental capacity assessments carried out on psychiatric inpatients [2]. In Ireland, this could be mirrored, due to the expected implementation of the Assisted Decision Making Act 2015 [3].

Despite this attention, Michel's observed that capacity assessments can still be a "hodgepodge" of practices", with decisions often made by those with little authority or expertise and implemented without consistency or reliability [4]. It is hoped that the DCL, will add to structured professional judgement resources, to aid in the assessment of functional mental capacity in a variety of patients.

This study was performed in the Central Mental Hospital (CMH), which is the site of Ireland's forensic mental health service. It is the only secure hospital in the Republic of Ireland, serving a population of 4.6 million and contains high, medium and low levels of therapeutic security on one site [5]. At the time of writing, there were 82 male inpatient beds in total.

Objectives

The purpose of this study was to further validate the DCL by:

1. Investigating whether an informant rating of DCL-Personal Health, assessed by interviewing the participants treating consultant psychiatrist (using the scoring sheet alone), was reliable when compared to an independent research rated DCL-Personal Health interview. In clinical practice, without the use of structured professional judgement tools, the consultant's opinion alone would be seen as the gold standard on determining the patient's capacity to consent to treatment.

2. For further clarification, the informant and research rated DCL scores, were also compared with the participant's legal status for capacity to consent to treatment with medication. This is a legal assessment that takes place every three months in the CMH, by a consultant psychiatrist. If they are deemed not to have capacity, an opinion from a second consultant is obtained, with implications for the involuntary administration of medication under the Mental Health Act 2001 [6].

Methods

- All male inpatients with a diagnosis of schizophrenia or schizoaffective disorder using the Structured Clinical Interview for DSM-IV (SCID) for Schizophrenia, in the CMH across all levels of therapeutic security during the study period, were considered eligible to participate.
- Female patients were excluded as this group makes up a very small proportion of the total inpatients in the CMH.
- Those who were deemed by their consultant psychiatrist to be too behaviourally disturbed to participate, at the time of the study, were also excluded.
- Two researchers (DOD and CC), initially performed the DCL-Personal Health with a group of 27 inpatients across the high, medium and low secure settings in the CMH.
- The sample was a convenience sample in nature, with patients selected if they met inclusion criteria and if they were willing to participate. Their responses were recorded in writing and assigned a score on the ladder scoring system.
- A third researcher (FM) facilitated the relevant patient's consultant psychiatrist in scoring the patient on the DCL-Personal Health. This was conducted using the ladder scoring system alone, based on their clinical opinion of where they would score on this.
- Five consultant psychiatrists, across all levels of therapeutic security in the CMH, were involved and they were independent and blind to the scores obtained by the two raters (DOD and CC).
- FM also collected the data on the most recently completed assessment of capacity to consent to medication.
- This assessment is performed every three months by the patients treating consultant psychiatrist and reflects their opinion as to whether the patient has capacity to consent to treatment.
- It was ensured that the date of this assessment was conducted within three months of the DCL-Personal Health completed by the researchers DOD and CC.

Results

- The majority of the patients from whom the data was collected were in the medium secure and rehabilitation units. This was expected, as the patients in the high secure unit were less likely to be in a position to engage.
- The measure of agreement (Cohen's kappa) between the DCL-Personal Health score that was obtained from the direct interview by the two raters and from the treating consultant psychiatrist, for Understanding was 0.221. For Reasoning the Kappa score was 0.202. For Appreciation the Kappa score was 0.194 and for Communication the Kappa score was 0.248. The total DCL score showed a Kappa score of 0.085 between the raters and the informants. **See Table 1.**
- Cronbach's alpha for Understanding between the informants and the two raters from the DCL-Personal health interview, was 0.8 (95% CI Lower: 0.561;Higher: 0.9 09. Significance: 0.000). Cronbach's alpha for Reasoning was 0.8 (95% CI Lower:0.56; Higher: 0.909. Significance: 0 .000). Cronbach's alpha for Appreciation was 0.573 (95% CI Lower: 0063; Higher: 0.805. Significance: 0.170) and for Communication was 0.656 (95% CI Lower: 0.245; Higher: 0.843. Significance: 0.004). For the total DCL-Personal Health score obtained by direct rating by interview and from the score obtained from the informant, Cronbach's Alpha score was 0.787(95% CI Lower: 0.532; Higher:0.903. Significance: 0.000). **See Table 1.**
- A ROC curve was performed to assess the relationship between the DCL-Personal Health scores obtained by the raters and the legal capacity to consent to treatment assessment. The area under the curve (AUC) for the different variables were 0.647 for Understanding, 0.778 for Reasoning, 0.730 for Appreciation and 0.714 for Communication. **See Table 2.**
- A ROC curve was also performed to assess the relationship between the DCL-Personal Health scores obtained from the consultant psychiatrist and the legal capacity to consent to treatment assessment. The AUC for the variables were; 0.794 for Understanding, 0.817 for Reasoning, 0.897 for Appreciation and 0.853 for Communication. The AUC for the total score was 0.853. **See Table 2 and Figure 1.**

Table 1.

Domain	Kappa	Kappa (Significance)	Cronbach's Alpha	T-Test Correlation
Understanding	0.221	0.003	0.8	0.668
Reasoning	0.202	0.003	0.8	0.685
Appreciation	0.194	0.13	0.573	0.403
Communication	0.248	0.001	0.656	0.501
Total Score	0.085	0.009	0.787	0.652

Figure 1.

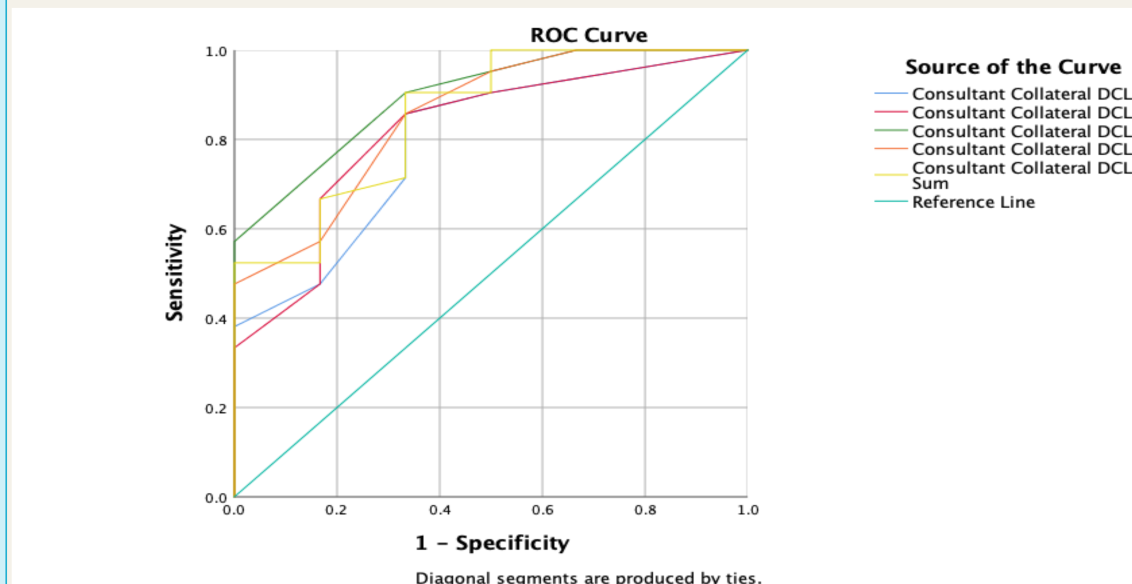

Table 2.

Area Under the Curve (Raters)	Area	Significance	95% C.I. Lower	95% C.I . Higher
Rater DCL Understanding	0.647	0.281	0.391	0.903
Rater DCL Reasoning	0.778	0.041	0.573	0.982
Rater DCL Appreciation	0.73	0.091	0.496	0.964
Rater DCL Communication	0.714	0.115	0.492	0.936
Rater DCL Sum	0.75	0.066	0.523	0.977
Area Under the Curve (Informant-Consultant)	**Area**	**Significance**	**95% C.I. Lower**	**95% C.I . Higher**
Informant DCL Understanding	0.794	0.031	0.594	0.994
Informant DCL Reasoning	0.817	0.02	0.627	1
Informant DCL Appreciation	0.897	0.004	0.767	1
Informant DCL Communication	0.853	0.009	0.684	1
Informant Collateral DCL Sum	0.853	0.009	0.683	1

Discussion

Overall, there appears to be good concurrent validity between the DCL-Personal health scores obtained through direct rating by the researchers and from the informant (the consultant psychiatrist using the scoring system alone). The level of agreement (κ), was highest for Understanding and Communication. Appreciation had the lowest score for Cohen's kappa, Cronbach's alpha and on direct correlation.

This links with research suggesting that while reliability and validity between capacity assessment instruments is generally good, different instruments tend not to agree as strongly in their assessments of appreciation and reasoning [7]. Individuals with schizophrenia are more likely to be impaired on appreciation, relative to other groups such as those with dementia, for reasons such as distrust of the assessor [8].

There was good correlation between the scores obtained by the direct rating of DCL-Personal Health and the legal capacity to consent to treatment assessment. The AUC ranged from 0.647 for Understanding to 0.778 for Reasoning. There was a stronger correlation between the DCL-Personal Health scores provided by the consultant psychiatrist and the assessment of capacity to consent to treatment. The AUC ranged from 0.794 for Understanding to 0.897 for Appreciation.

As the same consultant, would have performed the three -monthly assessment and rated the DCL-Personal Health, it would be expected that there would be a high level of agreement between the two assessments. However, 6 out of the 27 participants were deemed not to have capacity and had a second opinion to confirm this from an independent consultant psychiatrist. This suggests that there is good criterion validity between the DCL and the three-monthly assessment of capacity to consent to treatment.

Cronbach's alpha scores obtained for the DCL-Personal Health that were rated was 0.849 for the 4 items. It is reasonable to conclude from this that the DCL has the properties of a good psychometric test. The MacCAT-T is the gold standard structured professional judgement tool for assessments of capacity to consent to treatment, with high scores for Cronbach's alpha and internal consistency across various groups [9].

Although the MacCAT-T gives patients the opportunity to discuss their illness and therapy options with their doctor, it can be difficult for the patient, due to its length and the need for sustained concentration [10]. From this point of view, the DCL is a shorter and less cumbersome assessment. Another advantage is that it may be more accessible to certain patients, as it is based around vignettes, with less focus on their own mental illness and treatment. Further research is needed into patient's ease of understanding and preference for various structured professional judgment tools.

Overall, further research is needed in the area, to explore the practical application of the DCL in further detail. Future research will involve exploring the concurrent validity of the DCL with established measures of functional capacity such as the MacCAT-T. It is also expected that the DCL will be tested among individuals outside the forensic population, such as in a general adult or old age setting.

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Ethical Approval

This study was approved by the research ethics, audit and effectiveness committee of the National Forensic Mental Health Service.

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