Statistical Report

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| Author: |  | Paul Bassett |
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| Client: |  | National Audit of Dementia |
|  |  |  |
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| Description: |  | Inter-rater reliability analysis  |

**Introduction**

As part of the National Audit of Dementia, a data collection tool collected data relating to delirium screening and assessment.

Each patient was assessed twice using the same tool. The aim of the analysis was to examine the repeatability of the questions contained within the data collection tool.

**Statistical Methods**

The data collection tool consisted of a series of questions. Each of these questions was categorical in nature, with a finite number of different responses.

The majority of data collected was categorical in nature. A small number of variables (age and length of stay) were continuous in nature. For the purposes of analysis, these variables were categorised.

Due to the categorical nature of the measurements, the agreement between the two sets of measurements was assessed using the kappa statistic. This method measures the agreement between repeat measurements over and above that which would be expected due to chance. This is measured on a scale ranging up to a maximum agreement of 1. An interpretation of kappa is suggested in the subsequent table.

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| --- | --- |
| Value of Kappa | Strength of agreement |
|  |  |
| < 0.20 | Poor |
| 0.21 – 0.40 | Fair |
| 0.41 – 0.60 | Moderate |
| 0.61 – 0.80 | Good |
| 0.81 – 1.00 | Very Good |
|  |  |

The kappa values from the patient sample was calculated, along with a corresponding confidence interval, indicating the level of uncertainty in the calculated value.

**Results**

The kappa method was used to examine the repeatability of each of the individual questions. A summary of the analysis results is given in Table1 and Table 2. The figures are the number of patients on which the analyses were based, and the calculated kappa values (with corresponding confidence intervals). The final column gives an interpretation of the kappa value using the guidance in the methods section.

*Table 1: Agreement between responses (part 1)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Question | Question details | N | Kappa (95% CI) | Interpretation |
|  |  |  |  |  |
| Q1 | Age (categorised) (\*) | 772 | 0.95 (0.91, 0.99) | Very Good |
| Q2 | Gender | 772 | 0.95 (0.87, 1.00) | Very Good |
| Q3 | Ethnicity | 614 | 0.76 (0.71, 0.82) | Good |
| Q4 | Language | 556 | 0.81 (0.75, 0.87) | Good /Very Good |
| Q5 | Ward (\*\*) | 772 | 0.71 (0.67, 0.74) | Good |
| Q6 | Diagnosis (\*\*) | 759 | 0.64 (0.61, 0.66) | Good |
|  |  |  |  |  |
| Q7 | Died | 772 | 0.96 (0.89, 1.00) | Very Good |
| Q8 | Self-discharge | 647 | 0.00 (-0.08, 0.08) | Poor |
| Q9 | Fast track discharge | 645 | 0.59 (0.51, 0.67) | Moderate / Good |
| Q10 | End life care plan | 772 | 0.86 (0.79, 0.93) | Very Good |
| Q11 | Length of stay (\*\*\*) | 772 | 0.93 (0.87, 0.97) | Very Good |
| Q12 | Residence before care | 772 | 0.77 (0.73, 0.82) | Good |
| Q13 | Residence after care | 647 | 0.73 (0.69, 0.78) | Good |
|  |  |  |  |  |
| Q14 | Mobility assessment | 674 | 0.54 (0.46, 0.61) | Moderate |
| Q15 | Nutritional status | 746 | 0.53 (0.46, 0.60) | Moderate |
| Q15a | BMI assessment | 642 | 0.61 (0.54, 0.67) | Moderate / Good |
| Q16 | Ulcer risk | 772 | 0.48 (0.41, 0.55) | Moderate |
| Q17 | Continence assessed | 734 | 0.54 (0.47, 0.61) | Moderate |
| Q18 | Pain assessed | 744 | 0.40 (0.33, 0.47) | Fair / Good |
|  |  |  |  |  |
| Q19 | Assessment functioning | 698 | 0.35 (0.27, 0.42) | Fair |
| Q19 | Occupational therapy | 698 | 0.61 (0.53, 0.69) | Moderate / Good |
| Q19 | Physiotherapy | 698 | 0.54 (0.47, 0.62) | Moderate |
| Q19 | Other assessment | 698 | 0.40 (0.33, 0.48) | Fair / Good |
| Q19 | No assessment | 698 | 0.58 (0.51, 0.65) | Moderate |
|  |  |  |  |  |
| Q20 | Cognitive testing | 617 | 0.72 (0.64, 0.80) | Good |
|  |  |  |  |  |
| Q21 | Single question | 772 | 0.48 (0.41, 0.55) | Moderate |
| Q21 | History taken | 772 | 0.49 (0.42, 0.56) | Moderate |
| Q21 | 4AT | 772 | 0.71 (0.64, 0.78) | Good |
| Q21 | Other assessment | 772 | 0.46 (0.38, 0.53) | Moderate |
| Q21 | No assessment | 772 | 0.61 (0.54, 0.68) | Moderate / Good |
|  |  |  |  |  |
| Q21a | Delirium evidence | 295 | 0.69 (0.57, 0.80) | Good |
| Q22a | Delirium diagnosis | 118 | 0.59 (0.41, 0.77) | Moderate / Good |
|  |  |  |  |  |

(\*) Categorised as into: ≤75, 76-80, 81-85, 86-90, 91+

(\*\*) Response categorise with ≤5 responses grouped with ‘other’ category

(\*\*\*) Categorised as into: ≤7, 8-14, 15-30, 31-60, 61+ days

*Table 2: Agreement between responses (part 2)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Question | Question details | N | Kappa (95% CI) | Interpretation |
|  |  |  |  |  |
| Q23 | Care information | 772 | 0.59 (0.52, 0.66) | Moderate / Good |
| Q23a  | Personal details | 234 | 0.75 (0.62, 0.87) | Good |
| Q23b | Food preferences | 231 | 0.80 (0.67, 0.93) | Good / Very Good |
| Q23c | Reminders / care | 246 | 0.66 (0.54, 0.79) | Good |
| Q23d | Recurring factors | 215 | 0.78 (0.65, 0.92) | Good |
| Q23e | Calming factors | 209 | 0.83 (0.69, 0.96) | Very Good |
| Q23f | Aid communication | 232 | 0.67 (0.54, 0.80) | Good |
|  |  |  |  |  |
| Q24 | Cognitive testing | 517 | 0.52 (0.43, 0.61) | Moderate |
| Q25 | Cause impairment | 517 | 0.55 (0.47, 0.64) | Moderate |
| Q26 | Symptoms delirium | 517 | 0.66 (0.58, 0.75) | Good |
| Q26a | Symptoms in notes | 174 | 0.71 (0.56, 0.86) | Good |
| Q27 | BPSD symptoms | 517 | 0.56 (0.47, 0.64) | Moderate |
| Q27a | Symptoms in notes | 60 | 0.83 (0.58, 1.00) | Very Good |
|  |  |  |  |  |
| Q28 | Social worker referral | 114 | 0.60 (0.41, 0.78) | Moderate / Good |
| Q28a | Patient had capacity | 71 | 0.68 (0.45, 0.91) | Good |
| Q28a | Patient consent | 71 | 0.69 (0.46, 0.92) | Good |
| Q28ai | Documented concerns | 43 | 0.36 (0.14, 0.58) | Fair |
| Q28aii | No concerns | 18 | 0.82 (0.37, 1.00) | Very Good |
|  |  |  |  |  |
| Q29 | Named person | 488 | 0.49 (0.40, 0.58) | Moderate |
| Q30a | Discharge discussions | 394 | 0.54 (0.44, 0.64) | Moderate |
| Q30b | Carer discussions | 463 | 0.53 (0.43, 0.61) | Moderate |
| Q30c | Consultant discussions | 517 | 0.53 (0.44, 0.61) | Moderate |
| Q30d | MDT discussions | 517 | 0.50 (0.41, 0.59) | Moderate |
| Q31 | Single discharge plan | 488 | 0.36 (0.28, 0.45) | Fair |
| Q32 | Needs identified | 488 | 0.48 (0.39, 0.57) | Moderate |
| Q33 | Received plan | 488 | 0.54 (0.47, 0.62) | Moderate |
| Q34 | GP sent plan | 488 | 0.48 (0.39, 0.56) | Moderate |
| Q35 | Plan with 24 hours | 314 | 0.60 (0.49, 0.72) | Moderate / Good |
| Q35a | Reason why n/a | 87 | 0.72 (0.60, 0.84) | Good |
| Q36 | Notice to family | 335 | 0.55 (0.49, 0.62) | Moderate |
| Q37 | Assessment carer needs | 190 | 0.51 (0.37, 0.65) | Moderate |
|  |  |  |  |  |

The results suggested slightly varying results for the different study questions. The kappa values were generally high for the demographic questions (Q1-Q6), but more likely to be moderate for other study measures (with a scattering of good and fair values).

There was only one ‘poor’ agreement, which was self-discharge. Only two occurrences of self-discharge were noted, so this was a particularly rarer outcome.