

North West Mental Wellbeing Survey

Briefing note on adjusted scores: To be read in conjunction with the North West Mental Wellbeing Survey 2009

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Background

The North West Mental Wellbeing Survey used the short version of the Warwick and Edinburgh Mental Wellbeing Scale (SWEBMS). This shortened version contains 7 items compared to 14 in the full scale. This note sets out a response to a paper published on internal construct validity of WEBWMS¹ and the implications of this for the analysis of survey data published by the North West Public Health Observatory (NWPHO), January 2010 for the survey data collected on 2009.²

The validity of the 14 item scale was tested using a RASCH model, a method for testing how far observed data matches that expected by the model using a number of fit statistics (Brown 2009). As a result of this application a number of items in the 14 item scale showed a poor fit and removal of these resulted in the 7 item scale, SWEBWMS. These seven items conform to RASCH model expectations and are largely free of bias. The authors of this test suggest the 7 item is preferable to the 14 item scale where robust interval scale measurement is important and respondent burden is an issue. The 7 item scale then was more appropriate for the NWMWS. The authors suggest however the application of a conversion table when using the SWEBWMS¹. This is shown in table 1.

Results of applying the adjustment

This briefing note sets out the application of the conversion table to the overall North West results and the results of the Primary Care Trusts (PCT) within it. Table 2 shows the original mean scores and the adjusted scores once the conversion values have been applied. The third column shows the difference between the two. The affect of applying the adjustment is to reduce all scores. The application has no effect on the category boundaries for defining low, moderate and high mental well being and does not change the distribution of scores at the regional level.

Implications

At a local level, PCTs may wish to use their adjusted mean score.

¹ Stewart-Brown S, Tennant A, Tennant R, Platt, S, Parkinson J, Weich S, (2009), Internal Construct Validity of the Warwick and Edinburgh Mental Well-being Scale (WEBWMS): a RASCH analysis using data from the Scottish Health Population Survey.

² Deacon L, Carlin H, Spalding, J, Giles S, Stansfield J, Hughes S, Perkins C, Bellis MA, (Jan 2010) North West Mental Wellbeing Survey, 2009, North West Public Health Observatory, Liverpool John Moores University

Table 1 Raw score to metric score conversion table for SWEMWBS

| Raw score | Metric Score |
|-----------|--------------|
| 7 | 7 |
| 9.51 | 8 |
| 11.25 | 9 |
| 12.4 | 10 |
| 13.33 | 11 |
| 14.08 | 12 |
| 14.75 | 13 |
| 15.32 | 14 |
| 15.84 | 15 |
| 16.36 | 16 |
| 16.88 | 17 |
| 17.43 | 18 |
| 17.98 | 19 |
| 18.59 | 20 |
| 19.25 | 21 |
| 19.98 | 22 |
| 20.73 | 23 |
| 21.54 | 24 |
| 22.35 | 25 |
| 23.21 | 26 |
| 24.11 | 27 |
| 25.03 | 28 |
| 26.02 | 29 |
| 27.03 | 30 |
| 28.13 | 31 |
| 29.31 | 32 |
| 30.7 | 33 |
| 32.55 | 34 |
| 35 | 35 |

Table 2 Adjusted scores for SWEMWBS

| PCT Name | Weighted Mean (Original) | Weighted Mean (Adjusted) | Difference |
|---------------------------------|---------------------------------|---------------------------------|-------------------|
| Warrington | 31.20 | 29.86 | 1.34 |
| Halton and St Helens | 29.93 | 27.94 | 1.99 |
| Stockport | 29.58 | 27.70 | 1.88 |
| West Cheshire | 28.90 | 26.79 | 2.11 |
| Blackburn with Darwen | 28.63 | 26.50 | 2.13 |
| Heywood, Middleton and Rochdale | 28.45 | 26.13 | 2.32 |
| Central and Eastern Cheshire | 28.40 | 26.10 | 2.30 |
| Wirral | 27.98 | 25.69 | 2.29 |
| Central Lancashire | 27.75 | 25.55 | 2.20 |
| Sefton | 27.51 | 24.99 | 2.52 |
| East Lancashire | 26.92 | 24.85 | 2.07 |
| Manchester | 26.57 | 24.50 | 2.07 |
| Cumbria | 26.66 | 24.45 | 2.21 |
| Tameside and Glossop | 26.44 | 24.27 | 2.17 |
| North Lancashire | 26.16 | 23.99 | 2.17 |
| Blackpool | 26.13 | 23.98 | 2.15 |
| Knowsley | 26.27 | 23.75 | 2.52 |
| Liverpool | 25.33 | 23.11 | 2.22 |
| North West | 27.70 | 25.56 | 2.14 |

*The data has been weighted to reflect the North West population as described in Deacon et al 2010

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