

How do we value wellbeing? Combining data to put an economic value on the change in Short Warwick Edinburgh Wellbeing Scale (SWEMWBS) scores.

Word Count: 1,374

Figures: 2

Tables: 2

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Ethics approval: Because this study reuses survey data, no ethics permission has been sought.

Abstract

This report outlines a methodology which has been used to put an economic value on changes in Short WEMWBS (Warwick Edinburgh Wellbeing Scale) scores.

Keywords: wellbeing, WEMWBS, social value, SROI, ONS4, cost benefit, wellbeing valuation.

1. Introduction

The subjective nature of wellbeing may make it difficult to compare levels of wellbeing between individuals.ⁱ This subjectivity can also be the case with health. Healthcare decision making is often made based on metrics like the willingness to pay for one year of full health (which can be measured using a Quality Adjusted Life Year or QALY), or by number of DALYs (disability adjusted life years) saved. The UK Treasuryⁱⁱ have quoted their willingness to pay for a QALY as £60,000; and NICE (the National Institute for Health and Care Excellence) is often said to recommend health interventions where the incremental cost effectiveness ratio (ICER) is less than £20,000 or £30,000 per QALY gained.ⁱⁱⁱ The gold standard survey for estimating quality of life or utility for QALYs is the EQ-5D which has been criticised as being very focused on functional health, which means that programmes to improve wellbeing may not be invested in if they are not shown to be generating QALY gains. There have been potential economic wellbeing-based alternatives suggested to QALYs that may be called WELBYs^{iv} or WALYs.^v

In Wirral, our local Public Health team asks many of its commissioned services to collect SWEMWBS (Short Warwick Edinburgh Mental Wellbeing Scale)^{vi} as an outcome measure to capture the impact of what they are doing. We have attempted to put a crude financial value on these changes in SWEMWBS, based on work by Daniel Fujiwara where he estimated the equivalent change in income someone would need to receive to be willing to allow their wellbeing to decline or improve. This was based on longitudinal data from the British Household Panel Survey (BHPS) and compared the health and wellbeing changes in people who had small or large wins on the Lottery. We combined estimates of the monetary equivalent values for hypothetical wellbeing impacts with local data from the North West Mental Wellbeing Survey which included the SWEMWBS and the ONS4 questions and allowed us to map the relationship between the two. This is quite a crude piece of analysis as there will be lots of confounding variables that predict wellbeing. This gave us a financial proxy for changes in wellbeing in the Wirral population that we could use as part of a Social Return on Investment (SROI) analysis.^{vii} This method could be used in future to put an individual wellbeing valuation on any services in Merseyside that use SWEMWBS as an outcome measure.

2. Methods

SWEMWBS and ONS4 questions were both asked to a representative sample of the Wirral population as part of the North West Mental Wellbeing Survey. SWEMWBS was correlated with life satisfaction. The correlation was not particularly strong ($r=0.520$) but there was a clear relationship between the two variables (see Figure 1).

SWEMWBS scores were matched to the equivalent life satisfaction scores in the NW Mental Wellbeing Survey dataset for Wirral. These scores were each matched to the average score on the ONS4 questions.

ONS 4 Questions

1. Overall, how satisfied are you with your life nowadays?

Interviewer instruction: where nought is 'not at all satisfied' and 10 is 'completely satisfied'

2. Overall, to what extent do you feel that the things you do in your life are worthwhile?

Interviewer instruction: where nought is 'not at all worthwhile' and 10 is 'completely worthwhile'

3. Overall, how happy did you feel yesterday?

Interviewer instruction: where nought is 'not at all happy' and 10 is 'completely happy'

4. On a scale where nought is 'not at all anxious' and 10 is 'completely anxious', overall, how anxious did you feel yesterday?

A smoothed curve was created to take account of the fact that there was more random variation in cases where the SWEMWBS score was below 21 due to low numbers of individuals with these scores in the survey sample. As might be expected, there was a positive relationship between subjective wellbeing as measured with the SWEMWBS and scores on life satisfaction, worthwhile, and happy, and a negative relationship with anxiety scores. The WEMWBS and life satisfaction will both be related to many other common variables like income, age, long term health conditions, but we are not trying to control for these as we accept that these will be covariates.

This method has limitations, but also advantages in that it uses local data for Wirral. Because subjective wellbeing is closely related to these measures, it is not too big a leap to cross walk from one set of measures to another. The valuation of life satisfaction was based on a paper by Daniel Fujiwara ^{viii} which looked at the income increase that would have to produce an equivalent increase in life satisfaction. Because income is correlated with many other factors like education, the analysis looked at the increase in life satisfaction experienced by people who won large amounts of money on the lottery as compared to people who won small amounts of money on the lottery. This change was based on life satisfaction scaled from 1-7 from the British Household Panel Survey (BHPS) so was rescaled to a 1-10 scale as used in the ONS4 questions.

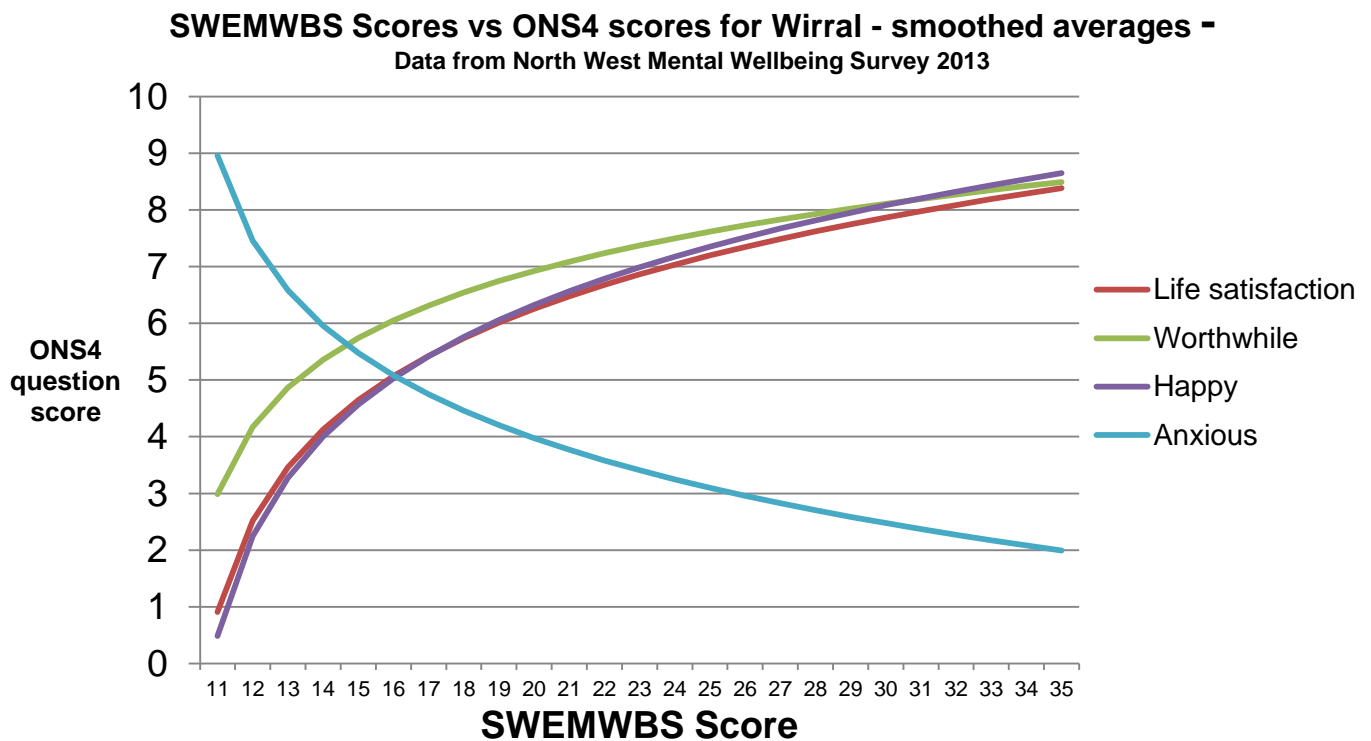
3. Results

Brendan Collins | How do we value wellbeing? Combining data to put an economic value on the change in Short Warwick Edinburgh Wellbeing Scale (SWEMWBS) scores.

Table 1. Cross correlations between total SWEMWBS score and ONS4 question scores

	Q9. All things considered, how satisfied are you with your life as a whole nowadays?	Q10. Overall, to what extent do you feel the things you do in your life are worthwhile?	Q11. Overall, how happy did you feel yesterday?	Q12. Overall, how anxious did you feel yesterday?	DV - WEMWBS total score
Q9. All things considered, how satisfied are you with your life as a whole nowadays?	1				
Q10. Overall, to what extent do you feel the things you do in your life are worthwhile?	0.579293	1			
Q11. Overall, how happy did you feel yesterday?	0.535146	0.522509	1		
Q12. Overall, how anxious did you feel yesterday?	-0.37703	-0.28174	-0.45261	1	
SWEMWBS total score	0.520848	0.509241	0.50102	-0.38844	1

Figure 1. SWEMWBS Scores vs ONS4 question scores for Wirral from North West Mental Wellbeing Survey.



Because there was no data for the correlation between SWEMWBS and life satisfaction for a SWEMWBS score below 11, but there were people seen in the HAAs with SWEMWBS scores below 11, it was assumed that the financial valuation for a SWEMWBS score of 11 was maintained for those below 11. This is a conservative estimate and it may well be that lower scores would have a lower valuation.

Figure 2. SWEMWBS Score against financial valuation of wellbeing over 12 weeks.

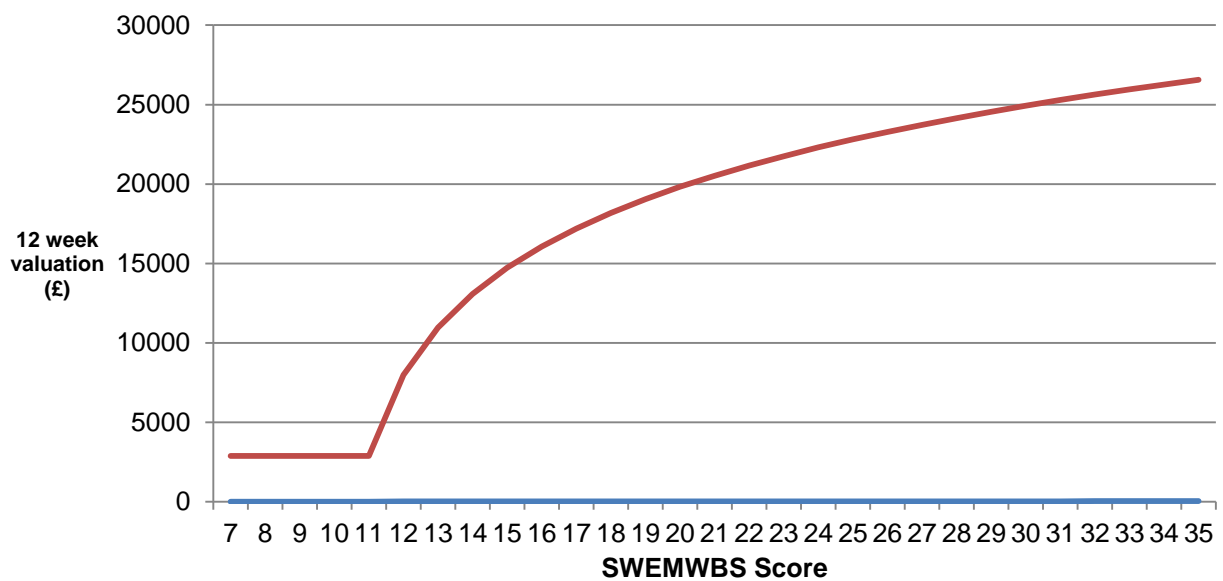


Table 2. SWEMWBS Score, and equivalent financial value to person on average salary (7 = minimum score, 35 = maximum score).

SWEMWBS Score	12 month valuation - equivalent value to person on an average salary
7	£12,483
8	£12,483
9	£12,483
10	£12,483
11	£12,483
12	£34,586
13	£47,516
14	£56,689
15	£63,805
16	£69,619
17	£74,535
18	£78,793
19	£82,548
20	£85,908
21	£88,947
22	£91,722
23	£94,274
24	£96,638
25	£98,838
26	£100,896
27	£102,829
28	£104,652
29	£106,376
30	£108,011
31	£109,567
32	£111,051
33	£112,468
34	£113,825
35	£115,127

4. Discussion

A lot of public health and community and voluntary services collect SWEMWBS data as an outcome measure. This analysis may be useful in putting a financial proxy on these changes in wellbeing to estimate the value that this would represent. The top values of wellbeing may seem very high at over £100,000 but we are not assuming that this is the amount that needs to be spent to achieve this level of wellbeing, and

also it is unlikely that individuals would spend a whole year in a state where they were experiencing such optimal levels of wellbeing. The author would welcome any collaboration with any individuals or groups who would like to expand on these methods to get a more accurate value set for wellbeing valuation.

References

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- ^v <https://clahrcwmblog.wordpress.com/2015/04/24/measuring-the-quality-of-life-holy-grail/>
- ^{vi} Short Warwick Edinburgh Mental Wellbeing Scale. http://www2.warwick.ac.uk/fac/med/research/platform/wemwbs/swemwbs_7_item.pdf
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