

# 15 years on: Insights and reflections on the Warwick-Edinburgh Mental Wellbeing Scales (WEMWBS)

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Photo credit: Alex Motoc (Unsplash)

## About the author

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She held academic appointments at the Departments of Child Health, and of Epidemiology and Community Health at the University of Bristol and before joining Warwick University she was a Reader in the Department of Public Health at the University of Oxford where she directed the Health Services Research Unit.

For the last 25 years Sarah's research and practice has focused on public mental health, developing the discipline, researching interventions and measuring mental wellbeing.

## About the What Works Centre for Wellbeing

We are an independent collaborating centre and the aim of our work is to improve wellbeing and reduce misery in the UK. We believe that this is the ultimate goal of effective policy and community action.

By accelerating research and democratising access to wellbeing evidence, we develop and share robust evidence for governments, businesses, communities and people to improve wellbeing across the UK.

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## Measuring wellbeing

Learning about aspects of the human condition such as wellbeing can be achieved in a variety of ways. Both qualitative and quantitative research methods are valuable, together with self-reflection, subjective or internal observation, and objective or external observation; intervention studies also play a role. Bioscience views these approaches in an hierarchical way, objective, quantitative studies being regarded as more valuable than subjective, qualitative studies.

Because of this hierarchy, measurement scales bring added credibility to an area of continuing development. The validity of an hierarchy in research methods is being questioned in many circles, especially among those researching wellbeing, however, the hierarchy model remains dominant and influential in many disciplines and amongst policymakers.

As a consequence, measurement scales can bring value to research in most areas of human functioning. They work best when they are tried and tested, when their psychometric properties and performance are known and trusted, and use in a variety of settings has provided benchmarks against which to assess the results of new studies.

The development of a new measure is not to be taken lightly; the health, psychology and social science literature provides many examples of measures which have been developed and validated, but used very little. In this context, the success of the Warwick-Edinburgh Mental Wellbeing scales (WEMWBS and the short version, (S)WEMWBS) is a phenomenon that merits reflection.

# The Warwick-Edinburgh Mental Wellbeing Scales

## History and development

These scales were developed between 2005 and 2010. The validation of the 14-item scale (WEMWBS)<sup>1</sup> was published in 2007 and that for the seven-item Short Warwick-Edinburgh Scale (SWEMWBS) in 2010.

The immediate driver for their development arose within the discipline of public health where a new area of practice was emerging in the UK; that of public mental health. This area of practice was minimal in the early 2000s, existing largely within the sub-discipline of health promotion whose practitioners focused on health and wellbeing as much as disease. Their practice often involved the education sector and schools where interest in wellbeing was growing. Because public health is heavily underpinned by the quantitative science of epidemiology, the development of public mental health was hampered by a lack of quantitative measures.

Practitioners working in education and local authority services and in the third sector – including voluntary, charitable, community organisations – were *“desperate for a measure”*<sup>2</sup> that captured mental wellbeing and that was appropriate for and sensitive to these settings. Renewal of funding for their services had increasingly come to rely on quantitative evidence of effectiveness, but the measures available at the time were not considered appropriate for many reasons. In the words of one practitioner speaking at the time: *“we could see the change [that our programmes were making], we could feel it, but we couldn't measure it”*.

Most measures of mental health which were available at that time were based on a binary model of health (sick or well) and focused on problems and diseases. The use of these measures implicitly led surveys, programmes, projects and services to be framed in a negative light, suggesting that participants had something wrong with them that needed to be identified and cured. Participants and practitioners often disliked using these negatively-orientated scales and some of the latter group believed they might interfere with the effectiveness of their work [1]. As a result, projects often went unevaluated, at least quantitatively. Even these negative measures, inappropriate as they were, could be used to show that the binary model of mental health was misguided.

What they illustrated was a spectrum of mental health, not a dichotomy, suggesting that prevention should be addressed in the way Professor Geoffrey Rose had outlined [2]. For example, using approaches that aim to 'shift the curve', addressing the entire distribution of mental health to improve the health of individuals with good as well as poor health. To do this required a measure that captured the positive end of the distribution as well as the negative, and that could measure the change between good and better states.

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1 In this paper WEMWBS is used to refer to both the Warwick-Edinburgh Mental Wellbeing scale and the Short Warwick-Edinburgh Mental Wellbeing scale, unless otherwise indicated.

2 Throughout, quotations are from the following qualitative studies:

Shah, N., Steiner, D., Petrou, S., Johnson, R., Stewart-Brown, S. Exploring the impact of the Warwick-Edinburgh Mental Well-being scales on public health research and practice. <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/research/research>

Shah, N. (2016) MSc Project Report London School of Hygiene and Tropical Medicine Measuring mental wellbeing: Exploring the role and impact of the Warwick-Edinburgh mental wellbeing scale (WEMWBS) in public health policy and practice. Submitted in part fulfilment of requirements of degree of MSc in public health <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/research/validation>

A study undertaken by University of Warwick for the Research Evaluation Framework 2021 and shortly to be made available to the public as an Impact Case Study

## Creating a conceptual framework

Gold standard recommendations for scale development include an explicit conceptual framework, namely, a description of the concept being measured, as understood by developers.

For WEMWBS, the conceptual framework describes mental wellbeing as:

- Both feeling good and functioning well. The scales therefore cover:
  - ◊ Eudemonic and hedonic wellbeing, as talked about in the ancient philosophical context.
  - ◊ Psychological functioning and subjective wellbeing, as talked about in current psychology and social science research.
- One end of a continuum of mental health with the opposite end being mental illness, mental health problems or psychiatric disorders.

The concept of mental wellbeing defined by WEMWBS is therefore much more than the absence of mental illness. The idea of a continuum of mental health from illness to wellbeing has been interpreted by some as excluding the possibility that people suffering with mental health problems could experience wellbeing. But this was a misunderstanding. People who have a diagnosis of mental illness can and do experience wellbeing when their illness is not making them feel bad or function poorly. Indeed, the insights and strengths involved in recovery from mental illness are enabling of wellbeing.

The view of wellbeing underpinning the development of the scales is of a fluctuating, but also developmental state in which people are asked to reflect on the past two weeks. The feeling items in the scale are expected to change with external circumstance and the functioning items with learning and skill development, but the two aspects are related. For example, someone might be feeling more confident in a relationally supportive environment and, as a result, learn to function at a higher level. At some point, functioning becomes less dependent on external support and the individual can expect to function well in more challenging circumstances. High levels of functioning enable a level of resilience that means people can weather life's slings and arrows with less long-term impact on their feeling states.

## Multiple dimensions of wellbeing

The conceptual framework also links mental wellbeing to other aspects of wellbeing: physical, social and, where appropriate, spiritual. The idea that mental, physical and social wellbeing are inextricably linked is implicit in the wellbeing literature and multiple studies show how one aspect of wellbeing is predictive of another. In terms of content, however, it is the mental, psychological, emotional and relational aspects of wellbeing which predominate in wellbeing scales. Some also address social and spiritual wellbeing. Whilst I am clear that spiritual wellbeing is an important component of overall wellbeing, I took the decision in developing WEMWBS that an item addressing this might interfere with the popular appeal of WEMWBS as a significant proportion of the UK population reject the notion of a spiritual contribution to wellbeing. At a time when there was controversy in the media and among policymakers as to whether wellbeing was valuable as a goal for policy or practice, it would have been counterproductive to include items that could have brought the scale into disrepute. Qualitative studies that use WEMWBS in a variety of cultures, including in both spiritually-orientated and primarily secular cultures, show that participants are satisfied with the scale and can relate to the concept of mental wellbeing it showcases. The absence of items relating to spiritual wellbeing did not seem to detract from the perceived value of the scales.

The newly formed Scottish Government was very taken with the idea of improving mental health in this way and recognised the need for a new measure. After a competitive tender process, they commissioned me, through Warwick University, to bring together a panel of experts to investigate existing scales and develop a new one, if necessary. This investment, which explains the name of the scale, enabled the development of the WEMWBS scales and their immediate use in Scottish population surveys. Early development involved forming a collaboration with Edinburgh University, extending an existing review of existing measures [3] and the testing of a promising but little-known scale from New Zealand - the Affectometer 2 [4]. It also involved extensive qualitative studies which aimed to establish views on the meaning of mental wellbeing and cognitive understanding of both the Affectometer 2 and WEMWBS in a range of cultural settings and age groups in the UK. The Affectometer 2 proved acceptable and valid, but overly long. The length of a scale matters from the point of view of the cost of research and respondent burden, so WEMWBS was developed.

## Broadening the use of the scales

The development of the scales has continued over the last ten years, driven primarily by the needs of users. Several countries, including all three British countries, now use the scale to monitor mental wellbeing and develop policy at national level<sup>3</sup>. Currently, around 350 licences for use of these scales are issued monthly and are in use across 50 different countries worldwide. At the time of writing, the scales have been translated into 36 languages, including Chinese, Russian, Urdu, Bangla, Arabic, Persian, Malay, Tamil, Indonesian, Swahili and British Sign Language.

Translations and validations have been initiated by academic interest in mental wellbeing from within the respective countries and undertaken by researchers working there in collaboration with me at the University of Warwick. Initially the scales were intended for adult populations, but demand for use in young people led to further validations, first among 13- to 15-year-olds with qualitative studies to check understanding, and then among 11-year-olds upwards. British Sign Language videos of the scales have been created and validated, and due to demand, a version of the scales designed for use by people with learning difficulties is currently being developed.

Within health services, the scales have come to be used as a way of opening a conversation with clients and patients about their mental health and to monitor mental health at an individual level. Early evaluation sought only to establish the validity and reliability of WEMWBS in populations and groups rather than at the level of the individual, so this approach required new research to show that the scales were valid and sensitive to change at an individual level. Demand for cut points (dividers on the spectrum of scores that could indicate low and high wellbeing) necessary for categorical analyses that was often favoured by the third sector led to studies examining the performance of WEMWBS against that of conventional measures of mental health. These have shown a strong correlation and enabled benchmarking, such that WEMWBS scores that are indicative of mental illness have been defined<sup>4</sup>. More recent research has suggested that scores on the short scale, (S)WEMWBS, change in a way that is very similar to scores on two primary care-based measures of mental illness (PHQ-9 and GAD-7) over the course of a therapeutic intervention for mental health problems [5]. These studies suggest that WEMWBS work well enough to be substituted for scales of mental illness in certain circumstances.

3 Scottish Government National Performance Indicators (2019) available at <https://nationalperformance.gov.scot/measuring-progress/national-indicator-performance>; National Performance Indicators for Wales (2016). Available at <https://www.valeofglamorgan.gov.uk/Documents/Our%20Council/Achieving%20our%20vision/Guidance/Wellbeing-of-Future-Generations-Act-National-Performance-Indicators-for-Wales.pdf>; Health Survey England (2016) available at : <http://healthsurvey.hscic.gov.uk/support-guidance/public-health/health-survey-for-england-2016/well-being-and-mental-health.aspx>; Office of National Statistics available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/qualityoflifeintheuk2018>

4 For more information, visit: <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto>

## Other scales of mental wellbeing

Similar ideas often develop in more than one place at once. Whilst WEMWBS was being developed, another scale, the Mental Health Continuum, was developed in the US [6]. This scale has more coverage of social wellbeing than WEMWBS. The Flourishing Scale is another US-developed brief mental wellbeing scale focusing on functioning more than feelings [7]. The WHO-5, developed in Europe, is a widely used brief wellbeing scale which was created at the end of the 20th century. Items include those suggestive of physical as well as mental wellbeing. Curiously, this scale has been researched and used more in the context of clinical than public health services [8].

Psychologists with an interest in the different dimensions of wellbeing have developed multidimensional scales. These offer a more sophisticated picture of wellbeing and the potential to investigate the extent to which dimensions develop independently of each other or vary relative to one another in different populations [9,10]. Some of these scales may focus more on functioning – sometimes labelled psychological wellbeing than feeling [10]. Some have been developed into short forms which can be used in surveys.

Social scientists have tended to favour single questions about happiness or life satisfaction to research wellbeing [11]. These have the great advantage that they have been included in multiple surveys carried out over many decades in different parts of the world. They offer the opportunity to undertake analyses on very large datasets with a myriad of other variables. Where these single item measures tend to fall down is in researching the impact of projects or programmes because they tend not to be sensitive to change in the same way as the multi-item measures. They imply a narrow conceptualisation of mental wellbeing among the researchers and suggest a more limited vision of the concept among consumers of the research.

It is clear from studies that have looked at the performance of a range of measures that all these scales address similar underlying concepts, some like the multidimensional scales with more sophistication but greater expense than others, and some like the single questions with less sophistication and lower cost. A variety of studies in different populations show that WEMWBS correlates with all these measures. The correlations are highest with the WHO-5 and Ryff's scales of psychological wellbeing, lower with the Mental Health Continuum Short Form (MHC-SF) and lowest with single questions or brief scales of life satisfaction. This suggests that the most robust mental wellbeing phenomena, like for example the correlation between mental wellbeing and fruit and vegetable consumption are likely to be demonstrable with a variety of measures [12]. However, this does not mean that all measures work equally well in evaluating change taking place amongst service users or participants in a project or programme. It is in this situation that WEMWBS has proved so valuable. It also does not mean that all measures are equal when it comes to their alignment with the aims of the programme or service.

It is interesting to reflect on how the concepts underpinning the different approaches to measurement might relate to one another. As suggested above, as happiness is a feeling it is likely to fluctuate depending on external circumstances more than scores on a measure like WEMWBS which comprises both feeling and functioning items, and much more than the multidimensional measures of functioning. But happiness is related to functioning in both a cause-and-effect way; positive feelings like happiness can both support the development of functioning and be enhanced by better functioning. Life satisfaction is regarded as a cognitive appraisal of wellbeing. It can be based on external validation i.e. how well someone is doing in relation to others on a variety of yardsticks, or on internal appraisal for example how content an individual feels with the life they are living. At high levels of wellbeing contentment is less strongly related to external yardsticks than at low levels of wellbeing.



## Description of WEMWBS

### WEMWBS content and scoring

At first sight, WEMWBS items do not look very different from those in other scales of mental illness. Measurement is based on a Likert scale with five options in which respondents score themselves from none of the time (scored as 1) to all of the time (scored as 5) for each item. This makes it very simple to score which is a significant advantage when evaluation is being undertaken by practitioners rather than researchers. The items cover the feeling and functioning aspects of mental health that appear in most scales of mental illness, such as confidence, optimism, dealing with problems and closeness to others. What makes WEMWBS fundamentally different from the mental illness scales is that items are framed in terms of the positive aspects of these qualities. Because new areas of practice are more readily accepted if the methods used to research them are familiar, the familiar format and content of WEMWBS is likely to have played a part in enabling widespread adoption. In the longer term, as interest in mental wellbeing expands and understanding becomes more sophisticated, it is very likely that new scales will need to be developed with novel items and more precise measurement.

### Positive focus of the scales

The change to a positive focus was of fundamental importance. Health services, both preventive and treatment, focus on the negative; problems, diseases and what is going wrong. Whilst not widely appreciated or understood, there is a problem with this approach; both ancient spiritual traditions and modern psychology have advised that what you pay attention to is what you get more of. This exclusive focus on disease and disability creates an important flaw in the health services which may account, in part, for the seeming lack of return on increasing investment in healthcare. The idea of reorienting to the positive was proposed in the Constitution of the World Health Organisation in 1946, when the term 'wellbeing' was first linked with health, however, the idea was not taken up at the time. Many health promotion practitioners, third sector organisations and schools, have both implicitly, and explicitly, seen the benefits of focusing on the positive aspects of mental health and part of WEMWBS' great success is that it spoke to this understanding. It would seem that people with mental illnesses also understand this because, given the choice, they would choose WEMWBS over negative scales of mental health [13].

However, the positive focus of the scales has also led to challenges among those working in health services. Public services in the UK are not funded to the level of aspiration of the professionals and practitioners working in them. And an understandable concern arises when a new area of practice is proposed, that this might take scarce resources away from existing services. When the new area of practice challenges fundamental tenets of the service – that it is there to focus on the negative – then the opposition can become vocal, as evidenced in the 2013 Chief Medical Officer's report [14]. This questioned the value of measuring wellbeing and the utility of WEMWBS in particular on the basis of concerns that proved unfounded. Presenting mental wellbeing as part of a holistic conceptualisation of health presents a further challenge in the context of the prevailing biomedical model of disease. Identifying distinct and independent diseases with specific biomolecular causes is central to this model, and difficult to reconcile with the idea of the mind and body working as one system.

### Psychometric properties

A key issue in the measurement of mental wellbeing is whether it is a single concept or whether it

is multidimensional. Many psychologists have pointed to the different aspects of mental wellbeing and suggested that it is important to measure these independently of one another. The downside to this approach is that multidimensional scales can be lengthy, which is a problem in public health and social science research from the perspectives of both cost and respondent burden. They also provide several different scores, raising the question of which is most important. In social science research, measures which include items that touch upon different aspects, whilst only providing an overarching score, are valuable. This is what WEMWBS aims to do.

Proof that this approach to measurement is valid rests on factor analysis of WEMWBS survey results. Most exploratory and confirmatory factor analyses of WEMWBS show a single factor solution while some suggest that there may be a second minor factor operating. RACSH analysis suggested that the psychometric properties of the scale could be improved by removing some of the items. This led to the development of a seven-item scale, the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) with colleagues at Leeds University. Both scales provide a distribution in most populations which approximates to normal and so enable parametric analyses which are statistically more powerful than non-parametric or categorical methods. In some populations and studies, WEMWBS shows a 'ceiling effect' where more participants than expected from the population distribution record a maximum or near maximum score. Ceiling effects matter in the evaluation of projects and interventions which aim to shift the curve because a participant with a maximum score cannot improve their score even if they feel a lot better. At the present time this issue has not proved enough of a problem in most populations. As a result of this and because the scales have been shown to be very sensitive to change in different populations and for different interventions, they have become popular with statisticians and proved to be measures of choice for evaluating projects and programmes. As levels of population wellbeing rise, these ceiling effects are likely to prove more of a problem.

## Scale completion

It is clear from examination of WEMWBS datasets that a variable number of participants give the same score to each item which is sometimes the highest score, suggesting perfect wellbeing, and sometimes the second highest. This response set suggests a lack of reflection and the resulting score is unlikely to be as accurate as that of someone who has reflected. This brings up the issue of self-awareness which is pertinent to all self-reported or subjective measures. Precise assessment of wellbeing states requires a level of discernment and self-knowledge which is not universal in most populations. Does this matter? It would greatly add to measurement precision if everyone accurately self-assessed, but in the context of research, what is needed for a measure is that it works, not perfectly, but well enough for the purpose. The most common effect of imprecise measurement is a null result. Imprecision means statistical variation which means a non-significant finding. Therefore, measurement imprecision tends to mean that important findings are missed rather than untrue findings published. One of WEMWBS' strengths is that the scales do capture change in wellbeing relating to interventions and projects suggesting that they are good enough for purpose. Where issues are most likely to arise is in very large surveys which may find low level correlations or predictions that turn out to be measurement error.

## Uses of the scales

WEMWBS are copyrighted, but [available free of charge to publicly funded services](#). User guides, workbooks and translations are made available via a dedicated website following registration for a license to use the scales. These registrations provide a picture of how and where the scales are being used and follow up studies have explored reasons for use.

### Where WEMWBS is used

**The third sector:** Responsible for most registrations for a license to use WEMWBS (30%) – suggesting that the scales have served their intended purpose. Reports from users show they are popular because they align with the sector's ethos; they focus on recovery and empowerment and are liked by practitioners and clients, and they are easy to use and demonstrably effective at showing impact. A third sector practitioner said WEMWBS enabled *"undoing some of the damage done by [clients] experience of being measured by clinicians in terms they don't understand... because the frame of reference doesn't have meaning for them"*.

Key examples of use in this sector include:

- The Mental Health Foundation measured the impact of a new mental wellbeing programme developed for prisoners between October 2013 and December 2016 in HMP & YOI Parc [15]
- Women's Aid, a charity that supports survivors of domestic abuse, incorporated WEMWBS within its 'On Track' monitoring framework in 2015 which allows for the impact of interventions to be tracked at a national level
- AgeUK used WEMWBS to evaluate phase 2 of its Personalised Integrated Care Programme between 2015, 2017 & 2018 [16]

**Educational sector and schools:** This sector, which includes individual local and private schools, local authority education departments and organisations offering surveys to schools, is a major user (24%). For example, the Schools and Students Health Education Unit offers WEMWBS to local authorities for inclusion in surveys of school health. Ealing Borough Council used this data to provide the backdrop for the Council to have conversations about secondary age pupils' wellbeing and to initiate conversations about mental wellbeing programmes in the Borough's Learning and Development Team. This Borough plans to use their WEMWBS time series and matched control data to conduct robust analysis of initiatives like whole school approaches, mindfulness and yoga programmes in a real-world setting. WEMWBS was used to evaluate Canterbury City Council's 'Mind and Body' programme for young people at risk of self-harm. Cheltenham College used the scale to identify issues with students in order to put in place the appropriate provision.

**Health service:** Although WEMWBS were not developed for use in clinical settings they have proved of value here, accounting for 14% of registrations. For example, Mersey Care NHS Foundation Trust used WEMWBS to inform consultation and care progress reviews within hospital, outpatient and community mental health services. Coventry and Warwickshire Partnership Trust are evaluating all the services commissioned within their Recovery College programme using WEMWBS. Heywood, Middlesbrough and Rochdale Clinical Commissioning Group commissioned a regional mental wellbeing programme in primary care which was positively evaluated with WEMWBS. The Rochdale borough Five Ways to Wellbeing website encourages individuals to measure their wellbeing using WEMWBS and track any improvements over time with the provision of tools for improving wellbeing.

**Commercial sector and workplaces:** Licenses for WEMWBS are also being requested from the commercial sector and since 2019 they have been issued for a fee. The scales are being used

in several different ways in this setting. For example, Cambridge Cognitions and Opinium offer WEMWBS as part of their suite of measures for inclusion in commissioned surveys. Opinium launched their workplace mental well-being audit in 2019 using WEMWBS to compare the results to national benchmarks and help businesses to drive change. Organisations like Jaguar Land Rover are using the scale to monitor staff wellbeing in different parts of the business during a period of major restructuring and redundancies. Milikin Carpets are using the scale to evaluate specific wellbeing initiatives.

**Higher education research and teaching:** 29% of registrations for licenses are from higher education or research institutes. Some of this use is for large-scale national surveys and cohort studies. Much is used by students undertaking, for example, MSc projects and some for use in trials and evaluations of new interventions.

## A common currency

The determinants of health are found in all aspects of life and therefore public health is a discipline which crosses all sectors. Health can be improved in schools and health services, in policy change at national and local level, by community, local authority and environmental services and by workplaces and third sector programmes. What is often lacking is the possibility of comparing the costs and benefits of initiatives in different sectors.

This capacity was illustrated in an early paper about WEMWBS which looked at change in WEMWBS score across a variety of programmes and services [17] and a more recent paper on the short scale [18]. One service, covered in the first paper, which provides complementary and alternative medicine to carers funded by Perth and Kinross local authority, was associated with a 10-point improvement in WEMWBS score; parenting programmes were associated with a 7-8 point increase in parents' scores. On the other hand, programmes provided by mental health services can be associated with improvement in WEMWBS scores – one programme reported a 4-point improvement in French patients with remitted schizophrenia[19].

Very little complementary and alternative medicine is currently government funded and most parenting programmes are provided through the third sector rather than government. Comparisons like these can contribute to cost-utility studies which are used to support decision making on the most efficient way of investing public resources, but they need a common metric like WEMWBS. A study in progress at present aims to provide a values-based metric for SWEMWBS so that it can be used in the same way as the Quality-Adjusted Life Year (QALY) is used to calculate the value of gain in Wellbeing Adjusted Life Years.

## Issues for wellbeing measurement

This reflection on WEMWBS illustrates several issues for wellbeing measurement and some of the roles WEMWBS has played in advancing the field of wellbeing measurement.

The first issue is **the iterative relationship between measurement and practice**. The gap in measures that WEMWBS aimed to fill had been a rate-limiting step in the development of practice of public mental health including that of the third sector. By providing a basis for investigating mental wellbeing in epidemiological studies and enabling the evaluation of programmes and projects, WEMWBS has supported the development of practice. A related issue, raised by the discussion on ceiling effects, is that as the practice of public mental health becomes more and more successful and levels of mental wellbeing rise there will come a time when WEMWBS is no longer fit for purpose. A new scale which covers the prevailing and more sophisticated understanding of mental wellbeing may then need to be developed.

The second issue raised in the discussion on content is that **measurement scales need to be right for the moment**. Any human population comprises groups and individuals at various stages of development. This is most clearly illustrated in the development stages of childhood, but development can continue throughout adulthood. Any population will therefore comprise people with a wide range of insight and functioning. A measure suitable for public health purposes needs to work sufficiently well across this range. Items that sit so far outside the developmental awareness of a significant proportion of the population that they cause people to dislike the scale will not work well. On the other hand, items that extend understanding of the concept by an acceptable amount can be developmental. The need for measures that are meaningful to users – practitioners, participants, patients – has been accepted as making an important contribution to measurement development for many years and has led to the demand for cognitive testing of new measures. The idea that meaningfulness will be widely distributed in the population and will be changing over time is not so well recognised. Nor is the need for new measures to sit well enough with both ends of the spectrum.

The third issue is related to the second and this is **the role that measures play in the development of awareness**. This covers the discovery by some practitioners that WEMWBS can play a positive role in the management of patients and participants with mental health problems, by expanding their understanding of what might be possible for them. It also covers the understanding of policymakers. In spite of high-level initiatives to measure wellbeing as well as GDP in the monitoring of government performance, there remained a lot of sceptics of wellbeing especially in the health service. Before WEMWBS enabled measurement, the concept of mental wellbeing was regarded in many quarters as *'fluffy'* and not a suitable focus for health or indeed education services. The content of the items proved reassuring in these circles, enabling policymakers to see what was meant by the term mental wellbeing, and to understand it as a meaningful focus for policy. In the words of one practitioner: *"Before WEMWBS it was easier to dismiss [wellbeing] as woolly...[WEMWBS] has given us some credence"*.

This question leads onto a fourth issue; **the way in which the development of self-awareness interacts with measurement**. As individuals, groups and societies start to focus on mental wellbeing, they become more self-aware. Public conversation makes the topic safer and this, together with the development of self-awareness, reduces denial of feelings and so influences the precision of measurement. Further along this path individuals become aware that the components of mental wellbeing – feeling good and functioning well – are inter-related in themselves and public discourse on the nature of mental wellbeing becomes less polarised. They also may become aware that psychological functioning can improve over time in the same way as any

other aspect of human development. This could lead to public demand for wellbeing support and further development of practice. It could also lead to awareness that physical, mental, social and spiritual wellbeing are related to each other. In the longer term this development might raise issues of the appropriateness of measuring overall wellbeing using measures covering mental wellbeing alone.

As a general point, an issue for research on wellbeing is that self-awareness is an essential skill for wellbeing development as well as for accurate scale completion, so measurement is likely to become more accurate at higher levels of wellbeing. Completion of WEMWBS can be helpful in that process. Practitioners working with patients in health care services have suggested that the act of completing WEMWBS can spark a conversation with a patient about how they are feeling in a way that a more general inquiry or presentation of a mental illness scale does not. In this way, scale completion can contribute to the process of wellbeing development as well as to measurement. Sometimes the heightening of levels of self-awareness and the lowering levels of denial that may be part of the early stages of a programme or intervention can lead to a lowering of scores in the early stages of the programmes. This may be interpreted as the programme making participants worse. End of programme scores should nevertheless show benefit and arguably are better for overall evaluation purposes. Repeated measurement offers snapshots which allow patients to self-monitor and perhaps take action.

A further issue raised by the popularity of WEMWBS is **the importance of both content of the measure and its psychometric performance**. The value of new scales is often judged on the basis of psychometric tests which show the degree to which it is appropriate to regard the measurement they provide as precise or not. Measures need both content that is well liked and measurement precision to be very successful. With regard to content, scales which aim to shift focus in as fundamental way as WEMWBS does, from the negative to the positive, may do better in terms of adoption if the other aspects - like the Likert scale format, the aspects of mental health covered by the items, and the simple scoring - remain familiar.

Finally, **the fact that WEMWBS has proved popular across all sectors makes it particularly valuable in the context of government and public health**. Public health has long recognised the contribution of all sectors of society to health and can face challenges in terms of valuing the health contribution of an activity in one sector, for example the health service, to the health contribution of an activity in another - for example a community initiative run by the third sector. WEMWBS provides an opportunity to assess both activities on the same yardstick. Governments constantly need to balance the need for resources in one sector with that in another. A common metric proves enormously helpful in enabling discussion about value for money across these sectors.

## WEMWBS as an Agent of Change

Acting in these many different ways and stimulating discussion and debate about the measurement of wellbeing, WEMWBS has been an agent of change, playing a small but key role in the development of the wellbeing agenda. During the 10 years that WEMWBS has been widely used, wellbeing has gradually become more widely understood and valued. The process is slow and continues to be so, and has been affected by many factors besides WEMWBS. In the words of a practitioner who was asked to reflect on the role of WEMWBS: *"I do think it's an agent of change, but I think that it requires a lot of exposure at different and various levels to help people who might not be so inclined [...] to see the value in it"*.

### Implications for wellbeing measurement by policymakers

Introduction of the concept of wellbeing into government has been very important and the possibility of measuring wellbeing has been critical in this regard. There are many different approaches to measurement and studies that use a myriad of different measures all of which have shown both that wellbeing plays a critical role in future health, learning, social functioning and productivity and that wellbeing is dependent on determinants which can be influenced by government. These measures have ranged from single questions on happiness and life satisfaction, through questions on other characteristics of wellbeing like optimism or self-esteem, to multidimensional measures of psychological functioning. Dismissing the results of studies because they have adopted the wrong measure is counterproductive. And the greatest certainty in a research finding derives when similar results are produced from studies using a variety of measures and methods.

Nonetheless, the selection of measures is key and the importance of the specific attributes of a given measure will depend on the situation. Life satisfaction and happiness measures have proved their worth in very large studies of the predictors and correlates of mental wellbeing and they will continue to have a role to play in this regard. Where these measures fall down is in evaluation of programmes, projects, interventions and policy changes because they do not seem to be well suited to identifying meaningful change in populations, groups or individuals. Clear procedures exist for testing whether measures are sensitive to change either in populations groups or at the individual level and these should be undertaken before a measure is recommended for use in evaluation studies. Multidimensional measures of mental wellbeing are essential in the investigation of the different components of wellbeing. Understanding which approaches influence which components is very important in the development of practice, as is investigating the process of how wellbeing develops at a more sophisticated level.

The value of WEMWBS sits somewhere between these functions. It is increasingly being included in large scale population surveys and cohort studies in the UK and elsewhere and so enables investigation of predictors and determinants in different cultures and settings. One of the key findings in these surveys is that the determinants of wellbeing change as levels of wellbeing increase. External factors are more important at low levels of wellbeing while internal factors, including the quality of relationships, matter more when wellbeing is higher. Delivering a single score which is near normally distributed at population level is important in this regard [20].

These surveys mean that smaller scale evaluations are able to benchmark their results against national norms. And it is these small-scale evaluations where WEMWBS has proved most popular, being widely adopted in the third sector. Because it is popular with people whose mental health is poor as well as those with high and average mental health, it works across the spectrum of health that third sector organisations provide for. It works well at all ages from 11 years up, so it

can be used to track changes in wellbeing over both short and long periods of time in children as well as parents, teachers and the elderly. A very important attribute in this regard is the measures' sensitivity to change [17,18]. This enables quantification of the sort of changes the third sector services or organisations have long observed but were unable to capture. Compared to measures of happiness and life satisfaction, WEMWBS can help educate populations, policy-makers, practitioners and patients as to the nature of mental wellbeing specifically.

## Further development

Further development of WEMWBS is currently and will continue to be user-led. Whilst I intend to carry on supporting research on WEMWBS that others are undertaking, I will no longer be driving it. Key areas for development in progress at the moment are:

- To continue encouraging use of WEMWBS in the commercial sector to support interest in wellbeing in the workplace.
- The development of a preference measure based on the short WEMWBS scale to support economic evaluation in the form of a Wellbeing Adjusted Life Year.
- Continued international growth, often driven by student populations.
- Use of the scales in clinical settings as a change agent to help services reorientate to a positive mode.

Further information about WEMWBS is available at <https://warwick.ac.uk/wemwbs/> including:

- A collection of research papers relating to WEMWBS: <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/research/>
- Panel of Experts: <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/about/>
- The Conceptual Framework for WEMWBS: <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/research/framework>



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