Potential of using visual imagery to revolutionise measurement of emotional health

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ABSTRACT

Appropriate measurement of emotional health by all those working with children and young people is an increasing focus for professional practice. Most of the tools used for assessment or self-assessment of emotional health were designed in the mid-20th century using language and technology derived from pen and paper written texts. However, are they fit for purpose in an age of pervasive computing with increasingly rich audiovisual media devices being in the hands of young people? This thought piece explores how the increased use of visual imagery, especially forms that can be viewed or created on digital devices, might provide a way forward for more effective measuring of emotional health, including smiley faces, other emojis and other potential forms of visual imagery. The authors bring together perspectives from healthcare, counselling, youth advocacy, academic research, primary care and school-based mental health support to explore these issues.

INTRODUCTION

There is no objective measure of emotional health problems in children and/or young people: no radiography, no blood test and no biopsy. The traditional way that doctors and others have sought to assess levels of problems is by observation or questioning. This generally involves questions being asked of the child or the parent in relation to their internal feelings and thoughts. These are often captured in the form of words, asking children and young people or families to express difficulties or states of well-being, which include choosing appropriate phrases or rating them against an interval or analogue scale. For example, one common measure of depression used for children is the Moods and Feelings Questionnaire, which asks children to consider how they have been ‘feeling or acting… in the past 2 weeks’. It then offers a range of statements for the child or the parent in relation to their perceived emotional state. One commonly used questionnaire for depression for older adolescents (Patient Health Questionnaire V.9) asks, ‘Over the last 2 weeks, how often have you been bothered by any of the following problems?’ Statements the adolescent is asked to consider include ‘Little interest or pleasure in doing things’ and ‘feeling down, depressed or hopeless etc.’. These are rated on a scale of ‘not at all, several days, more than half days, nearly every day’.

Children and young people’s mental healthcare exists within a fast-changing environment in which visual imagery is ever more prevalent. A recent children and parents media use and attitudes report showed that in the 12–15 years age range, 69% had a social media profile and 89% used YouTube, where predominantly three quarters of those used it to watch funny videos or ‘pranks’, and the same proportion watched music videos. Whereas a smaller proportion of 18% of younger children aged 8–11 years had a social media account, 77% were reported to use YouTube with a similar proportion of those watching funny videos/pranks compared with the older age group, and 58% watched music videos. It is perhaps no wonder that children and young people are referred to as the digital generation when we can see such a high percentage in use of social media, which relies so heavily on visual imagery.

What is already known?

- There are existing measurement methods which use non-verbal tools, such as smiley faces.
- There is existing research of how visual imagery is used as a method to measure feelings and perception.
- Children and young people are increasingly using forms of imagery to communicate to their peers and adults.

What this study adds?

- Brings the existing research into a cohesive review to provide a stimulating perspective around measuring emotional health in children and young people.
- Demonstrates why and how visual imagery could be used as a measurement, as well as the challenges in developing for wider use among children and young people.

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animations or video, as a way to express and measure emotional health of children and young people is currently underexplored. Furthermore, we argue that the forms of visual imagery already available do not adequately represent emotional health.

Current visual approaches
In the measurement of emotional well-being of children and young people, there are currently few examples of the use of visual imagery. Where they do exist, they are very circumscribed and tend to be limited to smiling or sad faces at the end of scales. One example available within the range of tools supported by both the British Council for Counselling and Psychotherapy and the Child Outcomes Research Consortium is the Child Outcome Rating Scale (CORS). The CORS, based on a text-based scale for the Child Outcomes Research Consortium is the Child Outcome Service questionnaire, and are also commonly used for pain such as the Commission for Health Improvement Experience of Child Session Rating Scale and patient experience questionnaires a very limited use of visual imagery. Smileys are also used in the visual analogue scale for the age range of 6–12 years, which is a very limited use of visual imagery. Smileys are also used in the Child Session Rating Scale and patient experience questionnaires such as the Commission for Health Improvement Experience of Service questionnaire, and are also commonly used for pain measurement.

Use and adaptation of visual scales
It has been suggested that traditional methods of gathering children and young people’s thoughts and ideas, including verbal questionnaires, may reduce the autonomy a child has, causing a limit within their response to what they feel is important and relevant in a research context. Furthermore, it is already known that, when given the opportunity to do so, children and young people are willing and able to modify text scales to their preferences. This was seen in the evaluation of the In Hand well-being app, where children and young people in an advisory group added dimensions to the Short Warwick-Edinburgh Well-being Scale, which already asks about well-being on a number of items such as ‘I’ve been feeling relaxed’ and ‘I’ve been feeling useful’. The children and young people consulted added, ‘more able to take control’, ‘ready to talk to someone else’ and ‘less stressed’ as meaningful dimensions. The modified scale was then included in a survey of app users with the goal of enabling individuals to better express whether and how the app was helpful in improving mental health. Therefore, we can see from recent perspectives of children and young people that traditional methods are already being adapted by them as they are not deemed necessarily best or most comprehensive ways of capturing emotional health in children and young people of today. This customisation of scales could potentially be extended by the addition of visual imagery.

Emerging approaches and tools that use visual imagery
Looking as to whether anything already exists as a widespread adopted and developed measurement approach that uses imagery, we can in general say (mostly) no because as previously highlighted, widespread adopted approaches tend to consist of words largely in questionnaires in both research and practise. Here we will provide an overview of some of the innovative measurement tools that have used visual imagery as a measurement tool to capture perspectives on emotional health.

Craven et al., as part of a study exploring representations of well-being in adult mental health, reviewed the literature to highlight the range of pictorial scales, symbolic, metaphorical and other sensorial representations of well-being (eg, gestural, textural/tactile or thermal) either in use or suggested by researchers or practitioners. The review also cited coproduction with young people, such as the set of 12 emojis selected and deployed in the Power Up app study. Furthermore, the review identified a recent mental health app, MentalSnap, using video and highlighted the increased availability of tools to create personalised animations in social media such as BitMoji. In the study of Craven et al., when prompted to do so in a workshop setting, people with lived experience of mental health difficulties created very personal visualisations that could not readily be expressed by graphs/scales (figure 1). They articulated variation in their state of well-being with a variety of audiovisual elements such as colour saturation, speed of movement or loudness, and with changing metaphorical representations such as growth of a flower in the sun and rain versus a drooping or dying one, or increasing distance from a problem through a door. One participant created a set of 15 graphical emotion cards so they could pick an appropriate one, depending on their mood with pictures, alongside text descriptions, to show head in hands, worry lines, sweating and dancing (figure 1). Craven et al. concluded from their study that visualisations already available in digital health apps were not rich enough to adequately represent emotional

![Figure 1: Examples of adult personal representations of well-being from Craven et al.](image-url)
health, thus further arguing the case for innovations in the usage of visual imagery.

A richer usage of smiley faces compared with that of the CORS scale was implemented in a mobile phone mood diary. Mood diaries are a common tool used with children and young people as well as other demographics, comprising singular entries for an entire day or multiple entries for throughout the day at various times to monitor and track a person’s emotions and feelings. The use of imagery in this way may also help children communicate their emotional health to their parents without the pressure for them to have to verbalise overwhelming or uncomfortable feelings or help aid conversations that professionals working with children and young people need to have with parents.

Another example of emojis used as measurement comes from a proposal to use them for psychometric testing. Here each emoji symbol was weighted against five personality types. We can also note an example of the use of imagery other than emojis in a psychoemotional context; in the ‘Blob Tree’ tool, a person is asked to identify with or discuss the feelings of one or more of a set of expressive manikins occupying a tree.

Future ways forward for use of visual imagery?

While there have been some innovations attempting to use visual imagery as a measurement tool in emotional health, there are questions around how we actually do the measuring. Here we share our thoughts around how we could create an effective measurement tool to capture dimensions of emotional health and the challenges that would need to be considered when using visual imagery as a measurement.

Imagery can potentially augment the clinical assessment and enhance the monitoring of mental health in children and young people as imagery can provide a range of useful features that verbal communication cannot, as suggested previously. More so, it may aid expression of emotion when children and young people have limited facial movement or vocabulary. Imagery may be used jointly with other methods of measurement because imagery has the ability to engage with strong emotions and feelings.

As demonstrated in the report by The Office of Communications cited earlier, younger people are significantly involved with digital technology and social media on a daily basis, so being able to measure forms of visual imagery which commonly appear on digital platforms, such as emojis, animations and videos, could provide an additional dimension for assessing children and young people’s emotional health in clinical practice. Assessment using digital tools is already becoming invested in as a way forward in the future. This is not to rule out traditional verbally based assessments, but the suggestion could be used alongside traditional methods to create more of an understanding about the individual as the case of triangulation of data among methods was argued by Ermala et al. In figure 2, we suggest one way of how visual imagery can be used as a measurement alongside other used ways of measuring emotional health.

Further supporting the use of visual imagery as a method of measurement is that it has been shown through Marengo et al. that a quantifiable scale with assigned numerical values to emojis can be used to measure perceptions, whereas in other studies, individuals such as Johnson, Radley, and Reavey have widely developed the practice of using imagery to interpret experiences in psychological research. Therefore, imagery can be used as a multimeasurable model encompassing both quantitative and qualitative pieces of evidence to aid the measurement of emotional health in children and young people.

In support of exploring the possibility of using imagery to measure emotional health in children and young people, it has been suggested that imagery is a universal language that overcomes verbal language barriers. In conversations between individuals who use emojis as forms of expression, it will typically be found there is also the use of emojis consisting of body gestures, animals, food, objects and other subjects, which appear to form a shared interpretation of what is being expressed. Comparing emojis to words, they can be used in patterns to construct a variety of expressions and can even imply non-verbal tones.

Although it should be noted that there are particular challenges around how some forms of images are interpreted among cultures and other demographic groups, as not all symbols, colours or gestures come with the same meaning between age groups and cultures. However, the same could be said of words and issues of translation of these between cultures and relevant to the challenges of measurement more generally as discussed by Flake and Fried.

There are clearly challenges to using imagery as a measurement. The main challenge featured consists of being clear around our interpretations of images and that, if images are constructively combined (in cases of emojis), we are clear on what different combinations represent and imply. A further challenge is that if this was to be developed as a tool for measurement, then we would need to complete a broad investigative task across cultures and generations to gain a firm understanding of interpretations across forms of imagery while also ensuring the inclusion and involvement of children and young people in this investigative process.

CONCLUSION

When systematically developed, visual imagery as a form of measurement in emotional health has been shown so far in its development to be interpretable in providing accurate and reliable results, but there remains challenges which need to be addressed if the method of measurement is to be both reliable
and valid. However, imagery does provide opportunities for different ways of clearly expressing emotional health, and imagery can provide another medium for expression, as well as increasing choice and an element of personalisation for children and young people, which perhaps in turn would enable more children and young people to feel able to access the support they need.

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