Emotional Awareness in Clinical Populations: Correlating Computer and Hand Scoring

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Abstract

High emotional awareness is associated with greater well-being (Ciarrochi, Caputi, & Mayer, 2003) and low emotional awareness is associated with a number of clinical conditions, including somatoform disorders, depression, eating disorders, post-traumatic stress disorder, and borderline personality disorder (Barchard, Bajgar, Leaf, & Lane, 2010). The Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990) is the most commonly used measure of emotional awareness. Respondents describe how they would feel in each of 20 emotionally evocative situations. Hand scoring of the LEAS has strong reliability and validity (Lane, Reiman, Axelrod, Yun, Holmes, & Schwartz, 1998; Lane, Sechrest, Reidel, Weldon, Kaszniak, & Schwartz, 1996; Lane, Sechrest, Riedel, Shapiro, & Kaszniak, 2000). However, hand scoring is time-consuming. Therefore, Leaf and Barchard (2006) wrote a computer program that scores the LEAS automatically. Program for Open-Ended Scoring produces several different scores, but the 3345 method has the highest correlation with hand scoring in non-clinical populations (Barchard et al., 2010). The purpose of this study is to examine the relationship between hand scoring and 3345 scoring in clinical populations.

Participants were 87 adult outpatients whose diagnoses included conversion disorder, functional somatic syndromes, and chronic medical conditions. All participants completed ten items: half completed items 1-10 and half 11-20. Some participants completed a second session, in which they completed the remaining 10 items. The correlations between hand scoring and 3345 scoring were .81 for items 1-10 and .79 for items 11-20. These high correlations demonstrate that computer scoring may be useful in clinical populations. Hopefully, these results will encourage more researchers to utilize this effective and time-efficient computer scoring method in future studies, especially in clinical populations.

Introduction

Measures of emotional intelligence are used in research, industrial, and clinical situations (Lane & Schwartz, 1987; Kruk, 2011). For example, one study (Kee, Horan, Green, et al., 2009) found that patients with schizophrenia had significantly lower scores than the control group on the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002). Another study found that emotional intelligence predicts workplace performance (Zhang & Wang, 2011). Thus, adequate measures of emotional intelligence can further research in many settings.

One part of emotional intelligence is emotional awareness. Emotional awareness is the cognitive skill that allows people to recognize and describe feelings in oneself and others (Lane & Schwartz, 1987). The Levels of Emotional Awareness Scale (LEAS; Lane et al., 1990) is the most commonly used measure of emotional awareness. The LEAS consists of twenty emotionally evocative scenarios. In each scenario, participants indicate how they would feel and how the other person in the scenario would feel.

A limitation of the LEAS is that it is time-consuming to score. In our lab, learning to hand score the LEAS takes 5 intensive weeks, during which trainees score 400 practice examples. After training is finished, scoring itself takes a long time: Experienced scorers take about 10 minutes to score each participant. Therefore, scoring 100 participants would take approximately 17 hours. As early as 1990, Lane et al. noted that the LEAS is time-consuming to score and suggested creating an automated scoring method. In response, Leaf and Barchard (2006) developed a computerized scoring program called Program for Open-Ended Scoring (POES). POES includes four different scoring methods, and Barchard et al. (2010) showed that all four methods have high correlations with hand scoring, thus supporting the validity of all these methods. However, Barchard et al. used only non-clinical populations. The LEAS may be useful in clinical settings and so it is important that we look at the relationship between hand scoring and computer scoring in clinical populations. Therefore, the purpose of the current study is to determine how closely POES scores are related to hand scores in clinical populations. Based upon the previous study, we hypothesize that there will be a moderate to strong positive correlation between these two methods of scoring the LEAS.

Method

Participants

Participants (n = 89) were outpatients at medical clinics in Arizona between 2008 and 2010. They ranged between the ages of 18 and 60. They included 29 patients diagnosed with conversion disorder, 30 with functional somatic syndromes, and 30 with chronic medical conditions. No participants reported occurrences of substance abuse or dependence within the past 6 months, showed signs of cognitive impairment, were actively suicidal, or had history of psychosis. All participants spoke English as their primary language.

Measure

The Levels of Emotional Awareness Scale (LEAS; Lane et al., 1990) consists of 20 emotionally evocative scenarios. For each scenario, the participant is prompted to answer the questions, "How would you feel?" and "How would the other person feel?" The LEAS is scored by hand and using POES.

Hand Scoring

First, individual words in a response are given a score between 0 and 3, depending upon their specificity. A word that indicates a thought rather than a feeling (i.e., "confused") receives a score of 0. A word indicating a physical sensation (i.e., "dizzy") receives a score of 1. Words that have positive or negative connotations, personality traits, and actions that are part of an emotional response (i.e., "rude," "honorable," "grudge," respectively) receive a score of 2. Words that identify specific emotions (i.e., "happy") receive a score of 3. The scores for many emotion words are given in the LEAS scoring manual glossary (Lane, 1991). However, scorers often have to decide what score to give to a word based upon these general scoring rules.

Next, the scorer decides whether the participant attributed these emotions to the self or the other person in the scenario. For example, in the response, "He made me angry", who feels anger? The self? The other? Both? The scorer then calculates the score for self and for other. In general, the self score is equal to the highest word score for all words attributed to the self. However, when a participant gives two separate, non-redundant level 3 emotion words, the self score is 4. The other score is calculated in the same way.

The total score is the higher of the self score and the other score. When both self and other receive a score of 4 and the responses are not the same as each other, the total score is 5.

POES Scoring

Program for Open-Ended Scoring (POES; Leaf & Barchard, 2006) was developed to score the LEAS. POES compares the raw LEAS responses to a Wordlist, which specifies the scores for each word. Then it calculates four scores for each response (Barchard et al., 2010): All-Sum, Highest-4, 334, and 3345. Barchard et al. (2010) found that all four methods correlate highly with hand scoring; however, the 3345 method had the highest correlation with hand scoring (r = .86, p < .001). This is likely because it is logically the most similar to hand scoring. For example, it distinguishes between responses to the question "How would you feel?" and the question "How would the other person feel?" as an approximation to the distinction between words attributed to self and other.

Although the 3345 method is the most similar to hand scoring, it does not duplicate hand scoring exactly. First, it does not accommodate spelling errors. For example, if a participant incorrectly spells the word embarrassed as "embrassed," this word would not be scored. Second, some words have multiple meanings in English and therefore the LEAS hand scoring glossary sometimes provides more than one possible score for a word. For example, the word "pain" can refer to physical pain (and receive a score of 1) or emotional pain (and receive a score of 3). POES does not differentiate between these two meanings and simply gives the same score to all uses of such words. Thus, the 3345 method provides only an approximation of hand scoring, and it is an empirical question how well it does so.

To use POES, the LEAS data must first be entered into the computer. In this study, raw responses were typed into the computer using a double entry system (Barchard & Pace, 2011) to prevent errors.

Procedures

All participants completed one session, in which they completed 10 items on the LEAS. Half of the participants completed items 1-10 and half 11-20. Some participants completed a second session, in which they completed the remaining 10 items.

Results

Hand scoring and scores from the 3345 method had strong positive relationships. The correlation for items 1-10 was .81 (p < .001) and the correlation for items 11-20 was .79 (p < .001).

Discussion

One of the reasons the LEAS is not used more often is that it is time consuming to score. Computer scoring would allow the LEAS to be scored much more quickly. Previous research (Barchard et al., 2010) demonstrated that computer scoring has high correlations with hand scoring in non-clinical populations. The purpose of this study was to examine this relationship in clinical populations. Among patients with somatoform disorders and chronic medical conditions, we found strong positive correlations between the 3345 computer scoring method and hand scoring, thus providing some evidence that computer scoring may be useful in clinical populations. Additional validation studies are needed for the 3345 method before we can recommend it as an alternative to hand scoring. For example, researchers should examine the validity of 3345 scoring in populations with clinical conditions associated with low emotional intelligence, such as depression, eating disorders, post-traumatic stress disorder, and borderline personality disorder (Barchard et al., 2010).

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