Patients with Conversion Disorder and Medical Controls: Comparing Emotional Awareness

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ABSTRACT

Patients with somatoform disorders have physical ailments that cannot be explained by other medical or psychological conditions (APA, 2000). One type of somatoform disorder is conversion disorder. Patients with conversion disorder have symptoms related to the voluntary central nervous system, such as seizures and motor-sensory deficits (APA, 2000). Patients with conversion disorder often have alexithymia (Cox, Kuch, Parker, Shulman, & Evans, 1994). People with alexithymia have difficulty putting their emotions into words (Jones, Schettler, Olden, & Crowell, 2004).

The Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, & Walker, 1990) is used to measure alexithymia. It asks respondents how they would feel in 20 emotionally evocative situations. The LEAS can be scored by hand or by computerized scoring (Barchard, Bajgar, Leaf, & Lane, 2010). This study compared LEAS scores of patients with conversion disorder to LEAS scores of medical controls and to patients with Functional Somatic Syndromes (FSS), using both hand and computerized scoring of the LEAS. In addition, this study examined the relationship between hand and computerized scoring.

Several computerized scoring methods exist for the LEAS. In this study, computerized scoring was done through the Program for Open Ended Scoring (Barchard, Bajgar, Leaf, & Lane, 2010; Leaf & Barchard, 2010) using Wordlist 2.4 (Barchard, 2010). The computerized scoring method used was the Highest40-AllinOne. This method sums 40 unique words that have the highest scores across all 20 items.

A total of 89 participants completed the LEAS. There was no significant difference between the three different groups, for either hand scoring or computerized scoring. However, there was a high positive correlation between hand and computerized scoring. Thus, the Highest40-AllinOne method may be used instead of hand scoring in certain situations. However, the Highest40-AllinOne method needs to be tested on other clinical populations before being used in place of hand scoring.

INTRODUCTION

A trip to the doctor is usually a negative experience, but some people take relief in being able to get better after a visit to a physician. Other people, such as patients with somatoform disorder never get the relief of finding out what is wrong with them. Patients with somatoform disorders suffer from physical ailments that have no medical explanation (Oyama, Paltoo, & Greengold, 2007). This paper focuses on conversion disorder, a diagnosis within somatoform disorders. Conversion disorder affects voluntary sensory-motor function (APA, 2000). Many patients with somatoform disorder suffer from alexithymia. There are four main features in alexithymia: difficulty in being able to identify and describe feelings, difficulty in being able to tell the difference between physical and emotional sensations, restrictive imagination, and concern with details (Sifneos, 1973).

Alexithymia is usually measured with self-report measures, such as the Twenty Item Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994). The problem with self-report measures of alexithymia is that they might not be accurate: Participants might change their answers depending on how they want to score on the test, or they might not know that they have trouble identifying emotions. A different way to measure alexithymia is the Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, & Walker, 1990). This test is performance-based, meaning that the participants are actually answering test questions instead of rating themselves on a scale. The LEAS (Lane, et al., 1990) measures emotional awareness, which is related to alexithymia. It is comprised of 20 open-ended questions that ask the participant "How would you feel?" and "How would the other person feel?" (Lane, et al., 1990). In this study, the LEAS was scored in two ways: hand scoring (Lane, et al., 1990) and Highest40-AllinOne Computer Scoring (Barchard, Bajgar, Leaf, & Lane, 2010). In hand scoring, participants receive a self score and an other score, each ranging from zero to four in each of the 20 questions (Lane, et al., 1990). They also receive a total score for each item. These scores are then summed to calculate the total score of the entire test. The Highest40-AllinOne method sums the word scores for the 40 unique words that have the highest scores across all 20 items.

The primary aim of this study is to compare the LEAS scores of patients with somatoform disorder and medical controls for both hand scoring and Highest40-AllinOne scoring. We hypothesize that patients with conversion disorder will score lower than medical controls on the LEAS for both scoring methods. Patients with conversion disorder should score lower because they are more alexithymic than medical controls. A secondary aim of this study is to examine the correlation between hand scoring and computerized scoring of the LEAS. Hand scoring is time consuming due to the amount of training required, as well as the physical act of scoring each item (Barchard, Bajgar, Leaf, & Lane, 2010). Finding a correlation between the two will bring researchers one step closer to being able to score open-ended tests with a computer program.

METHOD

Participants

There were a total of 89 participants in this study, whose ages ranged from 18 to 60. Participants were recruited from medical establishments in Arizona between August 2008 and June 2010. Participants were divided into three separate groups: conversion disorder, functional somatic syndromes (FSS), and medical controls. The first group was comprised of 29 participants, and the other two each had 30 participants. The researchers who collected the data were able to share LEAS responses and diagnoses but no additional information about the participants. Researchers did not share who diagnosed the patients, or what their specific diagnoses were given to the medical controls and patients with functional somatic syndromes. FSS are diseases that revolve around symptoms rather than an abnormality in the patient's tissue. Examples of FSS include chronic fatigue syndrome and irritable bowel syndrome. These patients have a medical condition, but share some of the frustration of not being able to pinpoint the cause of their disease, much like patients with somatoform disorder.

Measures

The Levels of Emotional Awareness Scale.

The LEAS (Lane, et al., 1990) measures emotional awareness. A high score on the LEAS means that an individual can put specific emotions into words for themselves as well as others. It is comprised of 20 emotionally evocative open-ended questions that ask the participant "How would you feel?" and "How would the other person feel?" (Lane et al., 1990).

Word scoring.

In the LEAS, participants respond to twenty different emotionally evocative scenarios. Scores are given to the words a participant uses in their response. Words receive a score of 0 when they describe thoughts, such as "wonder," rather than emotions. Words receive a score of 1 when they describe a physical sensation, such as "tired." Words receive a score of 2 when they describe general emotions that cannot be differentiated, such as "good" and "bad. Words receive a score of 3 when they describe distinct emotions, such as "angry." In hand scoring, the person scoring the LEAS consults the glossary to determine the score for each word. The scorer takes into consideration the context of how each word is used.

Hand scoring.

In hand scoring, participants receive a separate score for the self and other responses. The self score is given to the emotions attributed to the self. The word with the highest score within the emotions attributed to the self determines the score for the self. However, participants can achieve a score of 4 when two or more distinct level 3 words are used. The other score is calculated using the same procedure, based upon the emotions that are attributed to the other person in the scenario. The total score for each item is determined by the higher of self and other scores. However, if a participant has a score of 4 for both the self and other responses, they may receive a score of 5. This score is given only if the emotions described in the self and other are different from one another. The total score for the LEAS is calculated by adding up the total scores for the items. There are 20 items, each with a highest possible score of 5. This makes the highest possible LEAS total score 100 when it is scored by hand.

Computerized scoring.

There are several ways to score the LEAS through the computerized method (Barchard, et al., 2010). In this study, the Highest40-AllinOne method was used, because previous research has shown it has the highest validity (Barchard, Lane & Watson, 2010). Computer scoring was done using Program for Open-Ended Scoring (POES; Leaf & Barchard, 2010), using Wordlist 2.4 (Barchard, 2010). In computerized scoring, POES assigns scores to the participant's responses, much like in hand scoring. However, this specific method does not score the self and other. Instead, only a total score is given. Moreover, it does not give separate scores for each item. Instead, the Highest40-AllinOne method sums the scores of 40 unique words with the highest scores across all items.

Procedures

All participants completed 10 items of the LEAS. Half completed Set A (which consisted of items 1,3,6,8,9,11,14,16,17 and 19) and half completed Set B (which consisted of items 2,4,5,7,10,12,13,15,18 and 20). Some of the participants returned for a second testing session, during which they completed the rest of the items.

RESULTS

There was no significant difference in the hand scores between patients with conversion disorder, medical controls, and patients with functional somatic syndromes. Similarly, there was also no difference in the computerized scoring of the three participating groups. See Table 1.

Hand scores and computerized scores were strongly correlated for both set A and set B. These correlations are both high, positive, and significant ($r(87)=.85$, $p < .05$ for set A; $r(87)=.80$, $p < .01$ for set B).

DISCUSSION

Table 1

Means (Standard Deviations) of LEAS Scores of Medical Controls and Patients with Functional Somatic Syndrome and Conversion Disorder

Scoring Method	Questions Used	Medical Controls	FSS	Conversion Disorder	ANOVA
Highest40-AllinOne	Set A	60.70 (19.19)	63.90 (18.85)	53.81 (17.82)	$F(2, 61) = 1.58$, $p = .214$
Highest40-AllinOne	Set B	61.29 (22.24)	57.05 (21.75)	59.00 (22.94)	$F(2,53) = .171$, $p = .844$
Hand Scoring – Total	Set A	31.97 (4.65)	33.63 (4.50)	30.62 (3.96)	$F(2,60) = 2.36$, $p = .103$
Hand Scoring – Total	Set B	33.47 (5.41)	33.95 (5.49)	33.22 (4.65)	$F(2,53) = .10$, $p = .905$

This study compared LEAS hand scores and computerized scores in patients with conversion disorder, medical controls, and patients with functional somatic syndromes. There was no significant difference between the three groups of participants. One possible reason for this is that patients with conversion disorder are not as alexithymic as patients with other somatoform disorders. Previous research provided sufficient evidence to say that patients with somatoform disorder are alexithymic (Bach & Bach, 1995; Bankier et al., 2001; Cox et al., 1994). However, the research articles did not describe the subtypes of patients with somatoform disorder that they used. It could be that patients with conversion disorder are not as alexithymic as patients with other somatoform disorder subtypes. Conversion disorder is much different than other somatoform disorders, because it is usually attribute to a crisis or stressor. Furthermore, conversion disorder is more transient when compared to other somatoform disorders. Future research should examine whether or not patients with conversion disorder have alexithymia, instead of focusing on somatoform disorders in general, because conversion disorder is different to the other somatoform disorders.

This study also examined the correlation between computerized scoring of the LEAS and hand scoring of the LEAS. As hypothesized, a significant high positive correlation was found between hand scores and Highest40-AllinOne scoring. This demonstrates the convergent validity of computerized scoring of the LEAS in clinical populations. This research could lead to implementing computerized scoring when scoring clinical LEAS responses. Doing this would result in time efficiency and a simplification of the process of scoring the LEAS. In order to implement computerized scoring in clinical populations, further research needs to be done on the validity of computer scoring in clinical groups. This study alone cannot lead to the replacement of hand scoring.

This study has a few limitations. First of all, the demographics of the participants were not released. It is hard to establish whether or not it was a diverse group of participants. This is important because we do not know if these conclusions can be generalized to other people with conversion disorder, functional somatic syndromes, or medical conditions. Also, there are cultural differences when it comes to admitting emotional problems instead of physical problems. For example, the Japanese version of the LEAS found that the mean scores were significantly lower than the LEAS scores of those in the United States (Igrashi et al., 2011). Because we do not know the ethnicities of the participants, we cannot know if the groups are comparable to each other and whether the results will generalize. Another factor that limited this study is that of verbal fluency. Verbal ability may influence LEAS scores, and we cannot know if it differs across the three groups used in this study. Another limitation includes the diagnoses of the patients with conversion disorder. It was not released whether or not this group of patients with conversion disorder had been diagnosed with other mental disorders, and whether or not these disorders are comparable within the group with conversion disorder. Other mental disorders may influence how alexithymic a patient is. In general, it is hard to explain the results of this study without full demographics of the participants. Furthermore, only 89 participants were used. A larger sample would have been preferable to achieve higher power. With a larger sample, perhaps some of the differences between the means of the three groups would have been significant.

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