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Empirical research

Cognitive fusion among hispanic college students: Further validation of the Cognitive Fusion Questionnaire

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ABSTRACT

The purpose of the study was to examine the psychometric properties of the Cognitive Fusion Questionnaire (CFQ) among Hispanic college students. Results from the confirmatory factor analysis supported the use of the original one-factor, 7-item solution. Concerning concurrent validity, fusion was positively related to psychological inflexibility, thought suppression, frequency and believability of depressive thoughts, psychological distress, and thought control strategies and negatively correlated with life satisfaction. Additionally, the CFQ added to the prediction of psychological distress above and beyond psychological inflexibility and thought suppression but did not add to the prediction of life satisfaction. The CFQ did not depend on country of origin for predicting psychological distress and life satisfaction. The current study offers initial support for using the CFQ among Hispanic college students. Future studies should further examine this measure among diverse populations, including the impact of cultural variables on the utility of this measure.

1. Introduction

People often attend to the literal content of their thoughts rather than the whole of their experience (Hayes, Strosahl, & Wilson, 2012). Cognitive fusion, often shortened to "fusion", is "the tendency for behavior to be overly regulated and influenced by cognition" (Gillanders et al., 2014, p. 84). Fusion is associated with a broad range of psychological difficulties such as, eating disorders, depression, anxiety, and interpersonal issues (Gillanders et al., 2014; Hayes, Muto, & Masuda, 2011). The opposite of fusion, cognitive defusion, aims to increase behavioral effectiveness by focusing on meaningful behaviors and reducing the influence of aversive thoughts. Defusion is one of six core processes in Acceptance and Commitment Therapy (ACT) that targets psychological flexibility. Psychological flexibility is the ability to contact the present moment and engage in valued based behaviors despite what one is thinking or feeling. A meta analytic review examining the impact of defusion interventions demonstrated that it has a medium effect on outcomes (e.g., reduction in negative responses to thoughts and believability of thoughts), suggesting that this component is an active ingredient in ACT (Levin, Hildebrandt, Lillis, & Hayes, 2012). ACT is broadly applicable and has been shown to be efficacious for a wide range of psychological difficulties (e.g., Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

Blanco et al. (2008) found that nearly half of all college students meet criteria for a psychiatric disorder and such psychological difficulties may also interfere with academic success (e.g., DeRoma, Leach, & Leverett, 2009; Heiligenstein, Guenther, Savino, & Fulwiler, 1999). Hispanic students represent 16.5% of college enrollments of 18-24-year-olds in the United States (Fry & Lopez, 2012), yet are largely underrepresented in this area of research. In one of few studies, Del Pilar (2008) reported that Hispanic students are more likely to live at home, have more children, and have had past experience with depression than non-Hispanic college students. Examining cognitive fusion and the impact of defusion interventions on psychological difficulties among this demographic is warranted in an attempt to help reduce suffering.

There is accumulating evidence to support the cultural universality of ACT-related processes (Hayes et al., 2006, 2011; Monestès et al., 2016). However, it is important to continue to examine these processes and how they are measured among different cultures to ensure conceptual, functional, item, and scalar equivalence (Harachi, Choi, Abbott, Catalano, & Bliesner, 2006; Hui & Triandis, 1985; Okazaki & Sue, 1995). According to Hui and Triandis (1985), conceptual equivalence means that a construct holds the same meaning in multiple cultural groups, which is necessary before other equivalences can be examined. Functional equivalence is demonstrated when

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M.K. Flynn et al.

behaviors achieve similar goals in different cultural groups. With item equivalence, each item on the measure is shown to mean the same thing across different cultural groups. Finally, with scalar equivalence, the construct is shown it can be measured on the same metric, meaning that a score on the assessment represents the same degree, intensity, or magnitude of the construct across cultural groups. Measures of cognitive fusion have not yet been examined among Hispanic populations so conceptual, functional, item, and scalar equivalence are unknown. Although ACT researchers theorize that fusion is an etic (i.e., culturally universal) construct, it needs to be demonstrated empirically. Additionally, there may be emic (i.e., culture specific) ways of measuring fusion, even if the construct is etic (Hui & Triandis, 1985).

2. Cognitive Fusion Questionnaire

The Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) was developed as a general measure of cognitive fusion. The measure fit a one-factor solution among seven samples from the United Kingdom (e.g., students, prison service officers, participants in an ACT-based worksite training, and individuals with multiple sclerosis). The CFQ has excellent internal consistency and good test-retest reliability (Gillanders et al., 2014). Concerning concurrent validity, the CFQ was positively correlated with rumination, use of thought control strategies, frequency of depressive thoughts, depressed mood, and burnout and negatively associated with psychological flexibility, mindfulness, life satisfaction, and valued living (Gillanders et al., 2014; Romero-Moreno, Gallego-Alberto, Márquez-González, & Losada, 2017). Additionally, Gillanders and colleagues (2014) found that the CFQ demonstrated incremental validity by adding to the prediction of distress above and beyond psychological inflexibility; depression above and beyond positive beliefs about rumination and rumination response style; and distress above and beyond helplessness beliefs and psychological inflexibility.

The CFQ has also demonstrated sensitivity to interventions. For example, the CFQ mediated treatment outcomes in an ACT-based workplace intervention (Gillanders et al., 2014). Additionally, in an ACT intervention study for chronic pain, change in CFQ scores uniquely predicted changes in depression and social functioning at pre- to post-treatment and pre- to 9-month follow-up assessments (Scott, Hann, & McCracken, 2016).

3. Assessing cognitive fusion in hispanic populations

The samples Gillanders and colleagues (2014) used in the original validation of the CFQ were not culturally diverse in terms of race/ ethnicity. Language variants of the CFQ have been developed and validated (e.g., Kim & Cho, 2015), but the psychometric properties of the CFQ have not yet been examined in the United States or with Hispanics. It is likely that the cultural context of largely white adults living in the United Kingdom is much different than Hispanics living in the United States. The American Psychological Association's (APA) ethics code addresses assessment practices in research and clinical settings. Specifically, the code states: "psychologists use assessment instruments whose validity and reliability have been established for use with members of the population tested" (American Psychological Association, 2010, 9.02). Furthermore, the Standards for Educational and Psychological Testing also instructs that the psychometric properties of assessments be demonstrated for all populations for which they are to be used (American Psychological Association, 1999).

Beyond ethical standards, it is in line with the functional contextual framework of ACT to consider how the race/ethnicity of a sample may influence responding to measures of psychological functioning. Functional contextualism is a philosophical approach that states that behaviors are influenced by the context (i.e. the environment and activities surrounding the behaviors; Hayes, 1993). In the case of psychometrics, a functional contextualist would argue that responses to a particular measure are influenced by the past and present context of the

participant (Ciarrochi et al., 2016). A classic example of racial/ethnic contextual factors influencing psychometrics is Pollack and Shore's (1980) study examining the use of the Minnesota Multiphasic Personality Inventory with Native Americans. Because of the patients' cultural beliefs (i.e. communication with spirits), the patients that were identified as Native American with depression could not be distinguished from the non-Native American patients with schizophrenia. If the racial and ethnic context were not taken into account, many American Indian individuals may have been falsely classified as having symptoms of schizophrenia. A more recent study found similar results, with Hispanic, Asian, and Spanish-speaking participants being classified as having serious psychological distress when they do not (Kim, DeCoster, Bryant, & Ford, 2016).

A few ACT-related measures have been examined with different races/ethnicities. For example, the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) and its revised version, the Acceptance and Action Questionnaire - II (AAQ-II) were developed to measure psychological flexibility. Hayes and colleagues (2004) did not find AAQ mean score differences between Caucasians and non-Caucasians in three clinical samples but found small differences in three nonclinical samples with non-Caucasians having slightly higher psychological inflexibility scores than Caucasians. No AAQ-II mean score differences were found between "white" and "not white" categories (Bond et al., 2011) Another study examined the psychometric properties of the Valued Living Questionnaire (VLQ; Wilson, Sandoz, Kitchens, & Roberts, 2010), a commonly used values processes measure, with a Black American undergraduate sample. They concluded there was a different factor structure among their Black American sample versus the Caucasian college student sample used in the original validation study (VanBuskirk et al., 2012). Although these psychometric studies examined between-group differences, they didn't incorporate any contextual variables to look at within-group differences.

The purpose of the current study was to begin to examine the conceptual and functional equivalence of the CFQ among Hispanic college students by examining the factor structure, reliability, and validity of the CFQ. It was hypothesized that the data in the current sample would fit a one-factor structure as Gillanders and colleagues (2014) found in their U.K. samples. It was also hypothesized that cognitive fusion would be positively correlated with psychological inflexibility, thought suppression, frequency and believability of depressive thoughts, thought control strategies, and psychological distress and negatively associated with satisfaction with life. Additionally, it was hypothesized that cognitive fusion would add to the prediction of both psychological distress and life satisfaction above and beyond psychological inflexibility and thought suppression.

Country of origin, a contextual variable, was also analyzed to examine within-group differences among Hispanic, English-speaking college students living in the United States. It was hypothesized that the predictive power of the CFQ on psychological distress and life satisfaction would not depend on country of origin. This is consistent with the theory that ACT's processes are universally applicable and English-speaking Hispanic college students would respond to the measure in the same way whether they were born in the United States or Mexico (e.g., Hayes et al., 2006; Hayes et al., 2011). However, the U.S. Department of Health and Human Services (2001) note that factors related to race and ethnicity (e.g., country of origin) can increase the likelihood of environmental stressors (e.g., poverty and violence). So while it is unlikely that country of origin will not influence the predictive power of the CFQ, it is still a possibility given the contextual diversity of the sample.

Lastly, we hypothesized that there is not a significant mean difference in CFQ scores between our Hispanic college student sample and Gillanders and colleagues' (2014) student/community sample. Testing this hypothesis will provide some information related to the measure's scalar equivalence among Hispanic college students.

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