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Reliability and validity of the Japanese version of the Emotion Regulation Skills Questionnaire

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ABSTRACT

Background: The Emotion Regulation Skills Questionnaire (ERSQ) comprehensively assesses nine aspects of emotion regulation skills: awareness, clarity, sensation, understanding, compassionate self-support, modification, acceptance, tolerance, and readiness to confront. However, it is unknown about the levels of emotion regulation skills in various mental disorders, and its cross-cultural validity. We developed a Japanese version of the ERSQ, then examined its validity and reliability in clinical and non-clinical populations.

Methods: In an Internet-based survey, 2684 participants (406 with MDD, 198 with PD, 116 with SAD, 66 with OCD, 636 with comorbid MDD and ≥1 anxiety disorder, and 99 with comorbid anxiety disorders; 1163 non-clinical sample) answered the ERSQ, diagnostic status, and measures of mindfulness, emotion regulation, behavioral activation, psychological distress, and life satisfaction.

Results: Confirmatory factor analysis (CFA) replicated the theoretical nine-factor structure of the original ERSQ. Higher-order factor analysis model assuming two second-order factors and nine first-order factors also showed adequate fit to the data, suggesting the factorial validity of the scale. Analyses of multi-group CFA indicated the equivalence of factor loadings across clinical and non-clinical subsamples. The levels of internal consistency and time stability were sufficient. Convergent validity of the scale was also confirmed for most of external criteria. Character on the emotion regulation skills for each diagnostic group was depicted.

Limitations: Internet survey of samples with limited disorders, with self-reported diagnoses, may limit generalizability.

Conclusions: The Japanese version of the ERSQ showed adequate reliability and validity.

1. Introduction

Emotion regulation refers to "extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994). Emotion dysregulation is considered both a risk and maintenance factor for various mental disorders, especially emotional disorders such as depression and anxiety disorders (Barlow et al., 2004). For example, the use of maladaptive emotion regulation strategies is associated with depressive symptoms (Aldao et al., 2010). Beyond the effects of baseline anxiety symptom severity, emotion regulation skills negatively predict subsequent anxiety symptom severity, whereas anxiety symptoms do not predict emotion regulation deficits (Wirtz et al., 2014). Moreover, Cisler et al. (2010) indicated that maladaptive emotion regulation patterns characterize individuals with anxiety disorders. Individuals with substance-related disorders have less emotion regulation skills than do healthy controls (Berking et al., 2011), and drug and alcohol use is presumably an effort to regulate or avoid negative emotions (Cooper et al., 1995). Additionally, emotion dysregulation is considered a core concept underlying borderline personality disorder (Linehan, 1993; Putnam and Silk, 2005). Aldao et al. (2010) showed that

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rumination and suppression are related to the severity of eating disorder symptoms. Studies have also shown emotion regulation deficits to be associated with somatoform disorders (Waller and Scheidt, 2004, 2006). Therefore, the strengthening of emotion regulation skills could be a good treatment target for trans-diagnostic therapy (Berking et al., 2008b).

Some cognitive behavioral therapies emphasize emotion regulation skill building as treatment for depressive and anxiety disorders. A unified protocol for the trans-diagnostic treatment of emotional disorders (Barlow et al., 2004) considers emotion dysregulation as the trans-diagnostic maintenance factor for emotional symptoms, and encourages developing emotion-focused coping skills among patients. Similarly, effective treatments for borderline personality disorder, such as *Dialectical Behavior Therapy* (Linehan, 1993) and *Systems Training for Emotional Predictability and Problem Solving* (Blum et al., 2008), primarily facilitate emotion regulation skills acquisition. These skills are also important components of *Emotion Regulation Training* for generalized anxiety disorder (Mennin, 2006), and *Skill Training in Affect and Interpersonal Regulation* for post-traumatic stress disorder (Cloitre et al., 2002).

To conceptualize adaptive emotion regulation, Berking (2007) proposed the Adaptive Coping with Emotions (ACE) model. The ACE model helps explain how emotion dysregulation occurs and steers interventions enhancing effective emotion regulation. This model was based on emotional science theories, empirical research findings, developers' clinical experiences, and reports from numerous patient interviews regarding emotion regulation difficulties. This model conceptualizes adaptive emotion regulation as a situation-dependent interaction between the following emotion regulation skills: The ability to (1) be consciously aware of emotions, (2) identify and correctly label emotions, (3) identify what causes and maintains an emotion, (4) actively modify emotions adaptively, (5) accept and tolerate negative emotions when necessary, (6) approach and confront situations likely to trigger negative emotions, and (7) provide effective self-support in distressing situations. Thus, in an ACE model, intra-individual regulation process of emotional experience can be grasped in detail. Based on the ACE model, Berking (2007) developed Affect Regulation Training (ART), a comprehensive trans-diagnostic training program that addresses emotion regulation deficits in various disorders, and enhances emotion regulation capabilities. The program encourages patients to learn the above-mentioned seven emotion regulation skills to improve overall mental health.

The Emotion Regulation Skills Questionnaire (ERSQ) assesses the skills contained in the ACE model and ART (Berking and Znoj, 2008). The ERSQ comprises nine emotion regulation skills, above the ACE model's skills (the abilities to accept and tolerate negative emotions are divided into two skills) and the capability to interpret emotion-related bodily sensations correctly; each of those comprises three items. Each skill's application is assessed in the last week of assessment, on a 5-point Likert-type scale (0=not at all, to 4=almost always). The scale demonstrates good internal consistency and adequate test-retest reliability (Berking et al., 2013, 2011, 2010, 2008a, 2012, 2014, 2008b; Berking and Znoj, 2008; Eckert et al., 2015; Radkovsky et al., 2014; Wirtz et al., 2014), and good convergent, discriminant, and construct validity (Berking and Znoj, 2008). The ERSQ can help identify deficits in patients' emotion-regulation skills and assess an intervention's ability to enhance them.

To date, no scale can assess the process of intra-individual regulation in more detail than the ERSQ. For example, the most common emotion regulation scale in Japan, the Emotion Regulation Questionnaire (ERQ; Gross and John, 2003), focuses only on usage of two emotion regulation strategies, namely, 'reappraisal' and 'suppression', whereas the ERSQ addresses a broad range of arguably relevant skills, including active modification and acceptance-based skills (Berking et al., 2012). The Difficulties in Emotion Regulation Scale (DERS; Gratz and Roemer, 2004) focuses on emotion dysregulation, however, it is unclear if the low level/lack of difficulties in emotion regulation implies high ability of emotion regulation. Moreover, the ERSQ predicts subsequent depressive and anxiety symptoms in general and inpatient populations (Berking et al., 2014; Radkovsky et al., 2014; Wirtz et al., 2014). In a study on cognitive behavioral therapy for alcohol dependence, pre-treatment and post-treatment ERSQ scores predicted alcohol use during treatment and at follow-up, respectively (Berking et al., 2011).

In a previous study, it was assumed that emotion regulation strategies targeting the less visible internal experience of emotion may be equally important across cultures, as individuals discreetly regulate any culturally-valued emotions (Ford and Mauss, 2015). Given this point, even though this scale was developed in Europe, the skills measured by the ERSQ will be equally important and cover most, but not all, intra-individual emotion regulation processes of Japanese individuals.

Although the ERSQ efficiently and comprehensively assesses emotion regulation skills, two big questions, at least, must be clarified. First, the ERSQ's cross-cultural validity is unknown. Its validity has been confirmed with German populations only, and reliability with European populations, mainly Germans. Additionally, since Berking and Znoj (2008) proposed a nine-factor structure with better fit indices and theoretical interpretability, compared to the six-factor structure obtained through exploratory factor analysis (EFA), it is unclear if the ERSQ demonstrates cultural stability regarding factor structure.

Secondly, the levels of emotion regulation skills in various mental disorders such as depressive and anxiety disorders are unclear. Although it is known that healthy individuals' ERSQ scores are understandably higher than those of patients with some mental health disorders (Berking et al., 2008b), highest for healthy individuals, followed by outpatients, then inpatients (Berking and Znoj, 2008), and also highest for healthy individuals, then patients with alcohol dependence, then patients with major depressive disorder (MDD) (Berking et al., 2011), disorder-specific skills deficiencies, especially for anxiety disorders, have not yet been identified. As ERSQ is a trans-diagnostic measure, it is important to know the various disorders' features.

Moreover, in previous studies examining the ERSQ's validity and reliability, the sample size was relatively small ($n \leq 635$) and the validity was demonstrated only among healthy individuals (Berking and Znoj, 2008). Thus it is unclear whether the ERSQ has sufficient reliability and validity in healthy and clinical individuals.

This study investigated these issues by developing a Japanese version of the ERSQ and examining its validity and reliability in large clinical and non-clinical populations. We selected people with emotional disorders as study subjects because emotion dysregulation is thought to be a common maintenance factor for them. The study attempted to (a) clarify cultural differences by examining the validity and reliability of Japanese version of ERSQ and (b) identify specific deficiencies in emotion regulation skills relating to diagnostic status.

2. Methods

2.1. Participants and procedures

This study is part of a larger project examining emotion and psychopathology in Japanese clinical and non-clinical populations. We conducted an Internet-based survey with Macromill Inc., the largest Internet research company in Japan. Among their 1,095,443 registrants, participants were selected randomly, based on self-reported age (≥18 years), gender, and residence from clinical and non-clinical panelist groups. We displayed the survey's purpose to participants, explaining that survey completion indicated agreement to participate. Participants' assignment to clinical panelist groups depended on annual self-reports of current diagnoses. Thus, we assessed participant's current diagnostic and medical conditions and divided