

## VALIDATION OF THE SINHALA VERSION OF PAIN CATASTROPHIZING SCALE

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### Introduction

Pain catastrophizing is a cognitive and affective process that relates strongly to exaggerated negative orientation towards noxious stimuli (negative appraisal about pain and its consequences). A communal model of catastrophizing in patients with chronic pain argues that catastrophizing may be aimed at securing attention and empathy from others, rather than as a mean of reducing pain (Lackner, 2004).

The Pain Catastrophizing Scale (PCS) developed by Sullivan and Bishop (1995) is a very short questionnaire, and a reliable and valid model to quantify catastrophizing as a distinctive measure. The PCS evaluates pain related catastrophizing of individuals in three different components: rumination (RU), magnification (MA) and helplessness (HE). The scale is valid for both patient and healthy adult populations and includes 13 items. The PCS facilitates research in understanding the psychological processes that lead to heightened physical and emotional distress in response to aversive stimulations. No valid tool exists to evaluate these profiles in Sinhala speaking Sri Lankans. Therefore, it was our aim to methodically translate the PCS into Sinhala language and to validate the resulting Sinhala version

(PCS-SIN) for use in Sinhala speaking patients with chronic pain and healthy adults in Sri Lanka.

### Materials and Method

The guidelines recommended for cross-cultural adaptation of self-reported measures were followed in translation and adaptation of the PCS to Sinhala language (Beaton et al. 2000). The pre-tested PCS-SIN was administered to 44 patients with chronic pain (24 orofacial pain patients and 20 from other pain conditions) and 180 healthy adults to test for its psychometric properties.

The patients were recruited from the Oral Medicine Clinic of the Dental Hospital Peradeniya and from Kandy and Matale hospitals. The selection criteria were: presence of pain for more than three months with an intensity of > 20mm recorded on a 100mm Visual Analogue Scale, the ability to read and understand a standard daily newspaper published in Sinhala, aged between 16 to 50 years and willingness to give informed consent. Exclusion Criteria were: patients with a history of established psychological disorders or those who are undergoing treatment for persistent psychological disorders, and patients with a history of head injury followed by unconsciousness and neurological deficits.

PCS-SIN was also administered to a convenience sample of 180 healthy individuals selected from Kandy, Matale and Colombo districts. Both inclusion and exclusion criteria for healthy adults were the same as for patients except for the age range (16 to 65 years). Personality traits of healthy adults were evaluated using Eysenck Personality Questionnaire (EPQ) in 3 traits: extroversion, neuroticism and psychoticism (Perera and Eysenck, 1984). The total score of PCS-SIN (TO) and the scores of EPQ were correlated to assess the construct validity of the PCS-SIN.

Ethical clearance was obtained from the Research and Ethical Review Committee of Faculty of Dental Sciences. Informed consent was obtained from the subjects. SPSS version 11.5 was used for data analysis. Thirteen subjects were eliminated from the sample of healthy adults due to incomplete data.

## Results

Exploratory Statistics revealed that the distributions of the scores of RU, MA, HE and the TO of both samples were consistent with the normality standards and showed acceptable distributions on Stem and Leaf Plots and Box plots.

The mean age of the patients was  $38.52 \pm$  SD 14.01 years. Item to TO correlations ( $\gamma$ ) ranged from 0.49 to 0.78 ( $P < 0.001$ ). Components to TO correlations were: RU,  $\gamma=0.89$ ,  $P=0.001$ ; MA,  $\gamma=0.81$ ,  $P=0.001$ ; HE  $\gamma=0.94$ ,  $P=0.001$ . Cronbach's Alpha calculated for RU, MA, HE and TO were 0.8, 0.48, 0.86 and 0.91 respectively. Pain intensity showed a moderate correlation with the TO of PCS-SIN ( $\gamma=0.44$ ,  $P= 0.003$ ).

The mean age of the healthy adults was  $29.17 \pm$  SD 11.99 years. Item to TO correlations ( $\gamma$ ) ranged from 0.42 to 0.77. Components to TO correlations were: RU,  $\gamma=0.9$ ,  $P=0.001$ ; MA,  $\gamma=0.79$ ,  $P=0.001$ ; HE,  $\gamma=0.88$ ,  $P=0.001$ . Cronbach's Alpha calculated for RU, MA, HE and TO were 0.82, 0.64, 0.81 and 0.89 respectively. TO showed highly significant correlations to neuroticism ( $\gamma=0.51$ ,  $P= 0.001$ ) and psychoticism ( $\gamma=0.24$ ,  $P= 0.003$ ), but the low negative correlation observed with extroversion was not statistically significant ( $\gamma= -0.04$ ,  $P= 0.68$ ).

## Discussion

Acceptable methods of translation and adaptation procedures (Beaton et al., 2000) have been used in the translation and in validation of the PCS for use among patients with chronic pain and healthy adults in Sri Lanka. The translated version (PCS-SIN) exhibits high item to TO and component to TO correlations equal to the original version of the PCS in both patient and healthy adult samples. The results also show that the internal consistency of the PCS-SIN is high, comparable and consistent with the original versions and other translated versions of the PCS (Miro et al., 2008).

Despite the small sample size the psychometric properties of the PCS-SIN were strong and could be attributed to the effective cultural adaptation during translation. The moderate association of pain intensity levels with the TO in chronic pain patients and high association of psychoticism and neuroticism scores with the TO in healthy adults indicate that the new version (PCS-SIN)

measures a construct comparable to the original.

### **Conclusion**

The present study reveals that PCS-SIN is a reliable and valid tool to evaluate pain related catastrophizing in both patients with chronic pain and healthy adults in the Sinhala speaking population in Sri Lanka.

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### **References**

- Beaton, D.E., Bombardier, C., Guillemin, F. and Ferraz, M.B. (2003). Guidelines for the process of cross-cultural adaptation of self-reported measures. *Spine*, 25 (24): 3186-3191.
- Lackner, J.M. and Gurtman, M.B. (2004). Pain catastrophizing and interpersonal problems: a circumplex analysis of the communal coping model. *Pain*, 110(3): 597-604.
- Miro, J., Nieto, R. and Huguet, A. (2008). The Catalan version of the Pain Catastrophizing Scale: a useful instrument to assess catastrophic thinking in whiplash patients. *J Pain*, 9(5): 397-406.
- Perera, M. and Eysenck, S.B.G. (1984). A cross-cultural study of personality. *J Cross Cult Psychol*, 15: 353-371.
- Sullivan, M.J.L. and Bishop, S.R. (1995). The Pain Catastrophizing Scale: Development and Validation. *Psychological Assessment*, 7(4): 524-532.