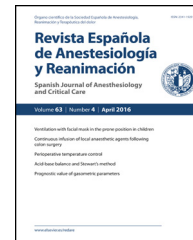




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ORIGINAL ARTICLE

Reliability and validity of the Spanish version of the modified Yale Preoperative Anxiety Scale[☆]



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KEYWORDS

Validation studies;
Preoperative period;
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Abstract

Introduction and objective: To minimise preoperative stress and increase child cooperation during induction of anaesthesia is one of the most important perioperative objectives. The modified Yale Preoperative Anxiety Scale was developed to evaluate anxiety. The aim of this study was to translate into Spanish, and validate the psychometric properties of the Spanish version of this scale.

Material and methods: The Spanish translation of the scale was performed following the World Health Organisation guidelines. During induction of anaesthesia, 81 children aged 2–12 years were recorded. Two observers evaluated the recordings independently. Content validity index of modified Yale Preoperative Anxiety Scale Spanish version was assessed. Weighted Kappa was calculated to measure interobserver agreement, and the Pearson correlation between the Induction Compliance Checklist and the modified Yale Preoperative Anxiety Scale was determined.

Results: The Spanish version obtained high content validity (0.91–0.98). Reliability analysis using weighted Kappa statistics revealed that interobserver agreement ranged from 0.54 to 0.75. Concurrent validity was high ($r = 0.94$; $p < .001$).

Conclusions: Validated assessment tools are needed to evaluate interventions to reduce child preoperative anxiety. The Spanish version of the modified Yale Preoperative Anxiety Scale evaluated in this study has shown good psychometric properties of reliability and validity.

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PALABRAS CLAVE

Estudios de validación;
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Atención ambulatoria

Fiabilidad y validez de la versión española de la escala de evaluación de la ansiedad prequirúrgica pediátrica *modified Yale Preoperative Anxiety Scale*

Resumen

Introducción y objetivo: Minimizar el estrés preoperatorio y aumentar la cooperación del niño durante la inducción de la anestesia es uno de los objetivos más importantes de los programas perioperatorios. La escala *modified Yale Preoperative Anxiety Scale* fue desarrollada para evaluar la ansiedad preoperatoria de los niños. El propósito de este estudio fue traducir al español y validar las propiedades psicométricas de esta versión en español.

Material y métodos: La traducción al español de la escala se realizó siguiendo la guía de la Organización Mundial de la Salud. Durante la inducción de la anestesia, se grabaron 81 niños de 2 a 12 años. Dos observadores evaluaron las grabaciones de forma independiente. Se valoró el índice de validez de contenido. Se calculó el índice Kappa ponderado para medir el acuerdo interobservadores y se determinó el coeficiente de correlación de Pearson con la escala de comportamiento *Induction Compliance Checklist*.

Resultados: La versión en español de la escala obtuvo un índice de validez de contenido elevado (0,91-0,98). La fiabilidad se evaluó con el índice Kappa ponderado, revelando un acuerdo interobservadores de 0,54 a 0,75. La validez concurrente fue elevada ($r=0,94$; $p<0,001$).

Conclusiones: Son necesarias herramientas estandarizadas y válidas para evaluar las intervenciones que se realizan para reducir la ansiedad del niño que va a ser operado. La versión en español de la *modified Yale Preoperative Anxiety Scale* evaluada en este estudio ha mostrado buenas propiedades psicométricas de fiabilidad y validez.

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Introduction

Surgery can be a stressful experience, particularly for children. Some authors have recommended reducing preoperative anxiety in these patients, not only to improve their level of cooperation with the surgical team, but also for humanitarian reasons.¹ Reducing anxiety can also improve postoperative outcomes,² as extreme preoperative anxiety is closely linked to postoperative distress.

A variety of strategies have been developed to minimise preoperative stress: premedication with anxiolytics, videos, hospital clowns, music therapy, or allowing parents to be present during anaesthesia induction.³ Irrespective of the method used, it is important to evaluate whether the goal of the stress-reducing strategy has been met, in other words, whether it succeeded in reducing the child's anxiety. The effectiveness of these strategies can be measured by means of validated, reliable perioperative anxiety scales, the most widely used being the modified Yale Preoperative Anxiety Scale (mYPAS). This scale has been used in over 100 studies to date,⁴ and has been translated into and validated in several different languages.^{5,6}

The mYPAS⁷ consists of 22 items grouped into 5 categories: Activity, Vocalizations, Emotional Expressivity, State of Arousal and Use of Parent. Each category consists of 4 items, except for the "vocalizations" category, which has 6. As each category contains a different number of items, the overall score is weighted, and ranges from 23.3 to 100 (weighted score). A score of 30 or over indicates a state of anxiety.

The first version, the Yale Preoperative Anxiety Scale,⁸ was developed in 1995 to evaluate anxiety in children aged between 2 and 6 years. It was later amended in 1997 (mYPAS)⁷ to broaden the scope to include children of up to 12 years of age. In 2014, Jenkins et al.⁴ published a second, shorter version in which they removed the "use of parent" category to allow the scale to be used in operating rooms where parents were not able to accompany their child during anaesthesia induction.

In this study, we describe the process followed in translating and adapting the mYPAS scale to Spanish, and the procedure used to evaluate the psychometric properties of the new version in a sample of children aged between 2 and 12 years scheduled to undergo surgery in the Day Surgery Clinic of a paediatric hospital.

Materials and methods

This study of the validation of the Spanish version of the mYPAS was conducted in 2 phases. In the first phase, the scale was translated into Spanish using forward and back translation techniques; in the second phase, the reliability and validity of the scale were evaluated.

Phase 1: forward and back translation

Once permission to translate the mYPAS into Spanish had been obtained from the original authors,⁷ it was translated and back translated following the recommendations of the World Health Organisation⁹ (Fig. 1). The original scale was

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