

A Spanish translation and validation of the “Bedside Shivering Assessment Scale” and its psychometric properties in the postoperative period

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STUDY QUESTION

Is the translation into Spanish of the Bedside Shivering Assessment Scale a valid and reliable tool, and improve the detection of postoperative shivering in patients undergoing trauma and orthopaedics surgery in the immediate postoperative period?

POPULATION	Patients undergoing trauma and orthopaedics surgery
INTERVENTION	<i>Bedside Shivering Assessment Scale</i> translation into Spanish
COMPARISON	Compared not to doing so
OUTCOMES	Improve shivering detection/ validation and reliable tool
TIME	Immediate postoperative period

BACKGROUND INFORMATION

The appearance of postoperative shivering is a relatively frequent complication in the surgical patient, with an incidence of 20-70% depending on the type of anesthesia performed; it is a consequence of the establishment of a clinical state of hypothermia, which can be deliberately induced in some surgeries or appear inadvertently during the performance of some procedures. Hypothermia is considered to be a core temperature lower than 36°C.

Hypothermia is associated with multiple adverse events, such as surgical wound infection, cardiological disorders in patients with limited cardiopulmonary reserves, increased operating room occupancy and average length of stay, shivering, thermal discomfort and decreased sense of well-being, among others.

The appearance of shivering, although is not considered a serious complication, has physiological consequences associated with increased metabolic consumption and the adrenergic response it generates, and psychological consequences derived from the bad experience of discomfort; these can be relevant in certain patients and can be avoided if they are identified.

OBJECTIVES

The aim of this study is to translate, adapt and psychometrically evaluate the Spanish version of the Bedside Shivering Assessment Scale (BSAS-S) in the surgical patients.

DESIGN

Prospective cross-sectional study, non-randomised

METHODOLOGY

RESEARCH SETTING	STUDY POPULATION	INCLUSION CRITERIA	EXCLUSION CRITERIA
 ASEPEYO HOSPITAL, accidents at work hospital, 126 beds, 3.000 surgeries/year	Patients with surgery criteria at Hospital ASEPEYO	Undergoing trauma and orthopaedics surgery (elected or emergency) post anesthesia care unit (PACU) admission, aged 17 to 65, general or locoregional anesthesia	Patients with cognitive disorders Patients with other services discharge, not PACU Patients with surgery on Saturday and Sunday
SCALE	SAMPLE SIZE CALCULATION		
BEDSIDE SHIVERING ASSESSMENT SCALE, 4 ITEMS SCALE	International recommendations for the metrics of the scale 8-10 CASES/ITEM	44 PATIENTS + 42 patients were added to increase guarantees	
SAMPLE TECHNIQUE			
Non-probabilistic sampling Consecutive sampling	Nurse visit to ward prior to surgery Research study information to provide informed consent form Written consent 2 copies		

TEMPORARY FRAMEWORK

From February to April 2021	From February to March 2021	From March to April 2021
	• Phase 1: Transaltion and adaptation	• Phase 2: Data collection Psychometric validation

METHODOLOGY

PHASE 1

- “Bedside Shivering Assessment Scale” translation into Spanish (transcultural adaptation)
- Validation for the investigation team (experts)
- Evaluation by 13 Operating Room nurses of the Spanish translation to validate the content and the semantic, no changes were needed
- Retrotranslation by one native English from the Spanish version of the scale to an English version
- Evaluation by the investigator team compared to the original version, equivalence of all items

PHASE 2

- Two nurses were educated to use the scale and conducted the whole data collection, (always the same nurses to avoid bias)
- Variables: age, gender, anesthesia performed, heart rate, blood pressure, core temperature, peripheral oxygen saturation and shivering
- Criterion validity analysis, gold standard

ETHICS COMMITTEE APROVAL

ASEPEYO Hospital ethics committee and University ethics committee approval on November 2021; This study is included in the NIH U. S. National Library of Medicine registry (Clinical [trials.gov](https://clinicaltrials.gov/ct2/show/study?term=NCT05469958)) with registration number NCT05469958. No conflicts of interest.

RELEVANCE FOR CLINICAL PRACTICE

The use of a scale to assess postoperative tremor would allow early identification, quantification, and adjustment of postoperative nursing care to minimize or avoid its occurrence and thus its associated complications.

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