

# Validation of the Sinhala version of the Pittsburgh Sleep Quality Index

D Anandakumar<sup>1</sup>, M Dayabandara<sup>1</sup>, S S Ratnatunga<sup>2</sup>, R Hanwella<sup>1</sup>, V A de Silva<sup>1</sup>

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## Abstract

**Introduction** Pittsburgh Sleep Quality Index (PSQI) is a widely used standardized instrument to assess sleep quality in clinical and research settings. Objective of the study was to translate the PSQI into Sinhala language and validate using a combined qualitative and quantitative approach.

**Methods** Every fifth patient aged 18-60 years who attended the out-patients department of a tertiary care hospital was recruited. PSQI was translated into Sinhala using a combined qualitative and quantitative approach. Internal consistency was measured using Cronbach's alpha. Construct validity was assessed by comparing the scores in patients who were identified as having depressive disorder according to the Centre for Epidemiologic Studies Depression Scale (CES-D) and those without depressive disorder.

**Results** Forty-six participants with depression were compared with 159 non depressed controls. Mean PSQI component scores were significantly higher in depressed patients in 5 components. Factor analysis identified a single component explaining 53.53% of the variance. Cronbach's alpha of 0.85 indicated a high internal consistency.

**Conclusions** The Sinhala translation of the PSQI is a valid and reliable tool to assess sleep quality.

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## Introduction

Medical and neurological conditions where pain is a major symptom result in poor sleep [1, 2]. It is also a feature of a wide range of psychiatric disorders such as mood disorders, psychotic disorders, dementias and anxiety disorders [3]. Often, in clinical practice, the number of hours of sleep is used as an indicator of sleep quality. Excessive daytime sleepiness resulting from poor sleep is

known to cause fatigue, cognitive deficits and poor quality of life [4].

Polysomnography provides an objective measure of sleep. It is able to identify different stages of sleep. It measures the physiological parameters of sleep using electroencephalogram (EEG), electrooculogram (EOG), electrocardiogram (ECG), or electromyogram (EMG) readings. However use of a sleep laboratory in routine clinical practice is limited by the cost and inconvenience.

Therefore questionnaires which evaluate sleep have been used in routine clinical practice and research to quantify sleep quality. Sleep quality can be assessed using several indicators. These are duration of sleep, sleep latency, number of times waking up and subjective feeling of feeling refreshed on awakening and day time somnolence [5].

The Pittsburgh Sleep Quality Index (PSQI) was developed as a standardised measure of sleep quality which can be used in clinical practice [6]. The PSQI assesses sleep quality during the previous month. It consists of 19 self rated questions which are scored to obtain a total score. The 19 items are grouped into seven components which are added to give the total score. The range of scores is 0-21. Higher scores indicate worse sleep quality. The PSQI has good internal consistency (Cronbach's alpha=0.83) [6]. It has been validated in different populations such as patients with depression, in the bereaved, elderly, and patients with anxiety disorders, chronic pain and cancers [7-9].

Since there are no sleep quality measures validated for Sri Lanka we translated the PSQI into Sinhala and validated it.

## Methods

This cross sectional study was conducted in the Out Patients Department (OPD) of the National Hospital of Sri Lanka. Every fifth patient aged 18-60 years who attended

<sup>1</sup>Department of Psychiatry, Faculty of Medicine, University of Colombo and <sup>2</sup>University Psychiatry Unit, National Hospital of Sri Lanka, Colombo, Sri Lanka.

Correspondence: MD, e-mail: <[madhudayabandara@yahoo.com](mailto:madhudayabandara@yahoo.com)>. Received 9 November 2015 and revised version accepted 8 January 2016.



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