

Motion Sickness and Phobia/Panic Symptoms: cross cultural study with Thai and Portuguese young adults



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Introduction

Agoraphobia and panic symptoms have been found to be related to the presence of vestibular irregularities (Jacob, Furman, Durrant, & Turner, 1996), supporting a possible aetiological explanation for anxiety disorders based on visuo-vestibular and postural factors (Coelho & Balaban, 2015). The underlying hypothesis is that uncommon patterns of visuo-vestibular interactions might suddenly occur and elicit feelings of fear, which in turn may be associated to a specific stimulus, situation of physiological status (idem, 2015). On a clinical perspective, patients with vestibular disorders – who depend more on visual and proprioceptive information – seem to be more susceptible to develop spatial and motion discomfort (Redfern & Yardley, 2001). Furthermore, several researchers suggest that inconsistencies between visual, proprioceptive and vestibular information may be responsible for experiences related to motion sickness (e.g. Warwick-Evans, Symons, Fitch & Burrows, 1998).

Even though cross-cultural research has demonstrated the universality of anxiety (Good & Kleinman, 1985), this experience occurs in the context of culture, which plays a relevant role in the specific shared meaning and importance of its symptoms. In the specific case of panic, culture seems to influence the sensations that become the focus of concern and the possible catastrophic biases that encompass panic symptoms (e.g. Hinton, Hofmann, Pitman, Pollack, & Barlow, 2008). Literature has also explored possible cross-cultural differences in motion sickness, with individuals from Asian countries presenting higher susceptibility, when compared to individuals from Western cultures (e.g. Coelho, under review; Klosterhalfen, Kellermann, Pan, Stockhorst, Hall, & Enck, 2005).

This exploratory study aimed to analyze cross-cultural differences between Portuguese and Thai young adults regarding motion sickness susceptibility and panic symptoms, as well as to examine the association between these dimensions.

Method

Participants

77 Thai (75.3% female) and 134 Portuguese (65.2% female) university students, aged between 18 and 34 years-old.

Measures

Motion Sickness Susceptibility Questionnaire (Golding, 1998): Thai version $\alpha = .80$ (child experiences) and $\alpha = .81$ (adult experiences); Portuguese version $\alpha = .91$ (child experiences) and $\alpha = .88$ (adult experiences)

Albany Panic and Phobia Questionnaire - Panic subscale (Rapee, Craske, & Barlow, 1994): Thai version $\alpha = .73$; Portuguese version $\alpha = .75$

Procedures

Data was collected in university settings, after informed consent from the participants.

Data analysis was performed in IBM SPSS 24.0, including descriptive statistics, Pearson correlations and independent-samples T-test.

Results

Cross-cultural differences

Panic

Country	n	M	SD	t	p
Thailand	77	14.01	8.67	6.293	.000
Portugal	134	6.57	7.51		

Motion sickness susceptibility – child experiences

Country	n	M	SD	t	p
Thailand	77	11.51	4.00	10.617	.000
Portugal	134	4.85	4.59		

Motion sickness susceptibility – adult experiences

Country	n	M	SD	t	p
Thailand	77	11.77	3.42	12.545	.000
Portugal	134	4.70	4.70		

Associations between motion sickness susceptibility and panic symptoms

Total sample (n=211)

	Motion sickness - child	Motion sickness – adult
Panic	.432**	.433**

** $p < .001$

Thailand (n=77)

	Motion sickness - child	Motion sickness – adult
Panic	.376**	.369**

** $p < .001$

Portugal (n=134)

	Motion sickness - child	Motion sickness – adult
Panic	.191*	.198*

* $p < .05$

Conclusions

- In line with previous studies suggesting higher levels of motion sickness susceptibility among Asian cultures, in our study Thai students presented higher motion sickness susceptibility, when compared to Portuguese students. To our knowledge, no previous studies were conducted comparing this susceptibility in Portuguese and Thai cultures.
- Barrera, Wilson, and Norton (2010) found that individuals from Asian cultures tend to report higher levels of specific panic symptoms, when compared to individuals from other cultural backgrounds. This was the case in our study, where Thai students presented higher panic symptoms than Portuguese students.
- Significant positive associations between motion sickness susceptibility in both childhood and adulthood and panic symptoms were found, with stronger associations in Thai students.
- Our data support the idea that motion sickness susceptibility may play a role in the presence of panic symptoms and that both dimensions tend to vary among eastern and western cultures.
- Future research is needed in order to both better understand the cross-cultural differences found in this study and the associations between motion sickness susceptibility and panic symptoms (namely identifying possible mediator or moderator variables) and to develop intervention strategies that take these differences/associations into account, in a cultural-based perspective.

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