



**Title : Cross cultural comparison of morningness orientation:It's Application in Shift Work Tolerance in Indian Perspective.**

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**Keywords:** *Moringness orientation. Cross-country comparison, Chronotype, Shift work*

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### **Introduction:**

Circadian rhythmic expression differs among individuals and may be classified with morningness orientation or circadian typology. This difference is related to tolerance of night work. The reduced version of the Morningness-Eveningness Questionnaire (rMEQ) is widely used in different countries to assess the Morningness orientation. Present paper addressed two less studied aspects –first the cross national comparison of the prevalence of morningness-evening preference in population along with possible role played by environmental temperature and other factors and second possible role of morningness orientation in tolerance to shift work in Indian perspective.

### **Methods :**

In the first phase of international group study, the rMEQ was administered to a sample of University students (N=2660) of four different countries [Kalyani (India), Barcelona (Spain), Bologna (Italy) and Heidelberg (Germany)]. In second phase, the rMEQ also administered on 200 health care unit personnel to categorize them in to different chronotypes. Physiological and subjective responses along with performance were studied in subgroup of each category of chronotype (N=30).

### **Results:**

The nationality differences in chronotype, reliant on environmental temperature showed maximum rMEQ score and highest prevalence of morning types in Indian and lowest rMEQ scores and prevalence of morning types in Germany. But temperature cannot explain the all the variance in cross country comparison. In adaptation to rotating shift, it was observed that the quantities and quality of sleep were much better in evening chronotype compare to other two chronotypes when the engaged in afternoon or night shift. The acrophaseshift in evening chronotype in subsequent night shift is more prominent and this may be helpful for them to adapt slowly rotating shift. The responses like number of errors increases in morning chronotype when they engaged in night shift.

There are cross-country variations exists in morningness orientation due to various factors. So, the cut-off score of rMEQ should be redefining according to the county. Then it can be applied as potential tool in counseling shift workers and optimize their work schedule.