

## Relationships between creativity and between sleep structure, patterns & quality, among visual arts students

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Sleep occurs spontaneously as one of the human circadian rhythms. It has a cyclical structure, and its processes have a crucial impact on waking functions, including creativity. This study explores the correlation between structure, pattern & quality of sleep, and creativity. The study examines a possible correlation between these variables based on the neurophysiologic, cognitive and behavioral approaches. Sleep stages are associated with creativity and REM sleep – the dream stage – is parallel to properties of creativity, amongst which spontaneity & intention, cognition & emotion are included. In addition, interpersonal properties in sleep timing and duration are associated with creativity. Disruption of the sleep cycle may lead to damaged sleep quality, as well as insomnia, which manifests itself in difficulties in falling asleep, poor sleep quality, and adverse effects on daily functioning. Personality factors that are characteristic of people with poor sleep quality also characterize creative individuals.

The purpose of this study is to examine relationships between sleep structure, pattern & quality, and creative ability in Visual Arts students. It is hypothesized that there are relationships between the expression of visual and verbal creativity and the practice of visual arts, and between sleep stages, particularly REM sleep, the duration and timing of sleep, and sleep quality. Instruments of measurement in this study include the Torrance Tests of Creative Thinking (TTCT), Polysomnography (PSG), Actigraph (AG), the Pittsburgh Sleep Quality Index (PSQI) and the Munich ChronoType Questionnaire (MCTQ).

This study's results show a correlation between high visual creativity, in particular in elaboration and originality, and poor sleep quality, in particular measures of sleep disturbances and loss of daily functioning. Also there are correlations between high verbal creativity & long sleep duration and late sleep timing. In addition this study shows that Visual Arts students have short Stage 3 in NREM sleep, long sleep duration, late timing of sleep and poor sleep quality compared to students in the social sciences who do not practice art work. Results indicate that verbal creativity is associated with the objective and subjective aspects of sleep duration and timing, while visual creativity is associated with the subjective aspect of sleep quality. This research establishes for the first time that visual creativity and the practice of Visual Arts, constitute predispositions of poor sleep quality among adults. Findings of this research may contribute to future investigations on the diagnosis and treatment of insomnia based on a cognitive approach.

**Keywords:** creativity, visual creativity, verbal creativity, sleep structure, sleep pattern, sleep quality, insomnia.

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