

Letter to Editor

Work related injuries; impact of circadian rhythm

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Dear Editor:

Work related injuries make up a major part of traumatic injuries, which inflict a financial burden and huge costs on the family and society (1, 2). Work related injuries result in loss of a work force of a country on one hand and cause the family to lose its financial support on the other (2). Therefore, this type of injury has attracted much attention.

Although numerous variables play a role in occurrence of these accidents, the effect of physiologic factors cannot be overlooked in this regard. For example interference of night working shifts with the natural circadian rhythm of the body is among these factors. Age, decreased physical strength, tiredness and extent of light are among other factors that affect the level of consciousness in an individual and may lead to work related traumas (3).

In recent years, the role of circadian rhythm in occurrence of work related traumas has been widely considered (4). Circadian rhythm is formed as a result of a number of clock genes in suprachiasmatic nucleus and other organs of the body. Circadian rhythm is associated with significant changes in hormone secretion and level of consciousness in an individual (5). Rhythms desynchrony is a phenomenon seen in those that work during the night and sleep during the day and is accompanied by increased risk of work related accidents. For example in a systematic review assessing 13 studies, it was revealed that working night shifts is associated with increased risk of work related accidents (6).

However, there is still controversy regarding the net effect of night shifts in incidence of work related accidents. One question that has not been answered yet is that if an individual works night shifts for a long time, is their circadian rhythm affected or not? On the other hand, can using strategies that improve level of consciousness (such as using blue light in the work place) decrease the incidence of these accidents? Are changes in sleep and wake conditions alone able to alter the expression of clock genes in body and suprachiasmatic nucleus or not? Therefore, there is still room for research

in this field and further studies are needed in this regard.

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2. Conflict of interest

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3. Funding

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4. Reference

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