

LETTER TO THE EDITOR**Relation of the Lunar Cycle and Trauma Deaths in Tehran over 10 Years****Dear Editor**

The association between the full moon and health problems has been discussed since the old days, and some studies have pointed to the positive relationship of the full moon with the severity of health conditions, some human behaviors, and the incidence of diseases meanwhile. Some others have pointed to a negative correlation. This controversy has also been reported for trauma deaths.¹⁻⁴ the relationship between moon cycle and Trauma deaths in Tehran has been investigated for a 10-year period (21 March 1992 to 20 March 2002).

For this purpose, traumatic death cases occurred during the holidays, and the single working day between two holidays was excluded to control variation in traumatic deaths due to increased traveling and recreational activities during vacations. Consequently, the cases that occurred during the 30th day of the lunar calendar were excluded since some lunar months are 29 days only. The lunar days were extracted from official calendars published during the study period. The mean number of death per lunar day was calculated and plotted. Lunar month was categorized into three periods: days 1-5 and 26-30, days 6-10 and 21-25, and days 11-20. The mean number of deaths and the mean age of victims in the mentioned three periods were compared using a one-way analysis of variances (ANOVA).

Our results demonstrated that during the study period, 28,208 traumatic deaths were registered; nonetheless 5,380 (19.1%) cases did not meet the inclusion criteria. Among the remaining, there were 17,056 (74.7%) males and 5,772 (25.3%) females, with the age range of 1-97 years (= 32.4 + 20, median=27) and 32.2% of them were less than 20 years of age. Comparing age groups, cases with an age range of 21-30 (24.2%) had the highest frequency. The mean number of deceased cases registered per lunar calendar day was 11.1 (SD: 1.84; range: 8.4-15.6). The mean number of registered traumatic deaths was 11.55 on days 11-20 of the lunar month and 12.32 in days 6-10 and 21-25. The difference was statistically significant. As indicated, there was no increase in trauma deaths during a full moon and new moon days; meanwhile, there are two

peaks in the first and second quarters.

As observed, our results did not support a positive correlation between the frequency of trauma deaths and full moon days. We do not have any explanation for this; however, it can be explained by the following reasons: the majority of trauma deaths in our country (i.e., Iran) and this study were due to Road Traffic Crashes (RTCs). The literature review displayed that many factors are involved in the occurrence of trauma, such as age, gender, the presence of diseases and medical disease, as well as the absence of health performance (e.g., cardiovascular disease, diabetes, and anxiety or depression); nonetheless, for any type of trauma, special factors are relevant.⁵

Furthermore, many studies indicated that a full moon resulted in increasing illumination and better visibility than other moon days; therefore, it could reduce RTCs and their related deaths, subsequently.⁶ The comparison of gender distribution demonstrated that the pattern for deceased male cases was similar to the overall pattern; however, for females, there was only an increase in the second quarter [Figure 1]. Traditionally, there is a belief among some health providers that women are affected more than men by moon gravity; therefore, it is possible that some events that are associated with emotions and affections are observed more frequently among women. It has been reported that crisis-call frequency increases in the full moon.² Moreover, there is less probability of a reduction of total sleep time, stage 4 sleep, and REM sleep for women in near full moon in contrast to men.⁷ Nevertheless, for trauma admission, crime battery, and attempted suicides referring to a hospital emergency room, the relationship was negative.^{4,8,9}

The mean age of victims deceased during the middle third of the lunar month tended to be more than on other days in the lunar month ($P < 0.05$). It is similar to the report of Onozuka et al.,¹⁰ who stated that the frequency of traffic accidents resulting in emergency ambulance transport for patients aged > 40 years was significantly increased by full moon days. Intentional deaths comprised 8.3% of our cases (1,885 out of 22,828). The fluctuation of intentional deaths was less than unintentional ones during the lunar month

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and had fewer rises during new moon days; however, this increase was not statistically significant. The overall pattern for unintentional deaths was similar to trauma deaths [Figure 2].

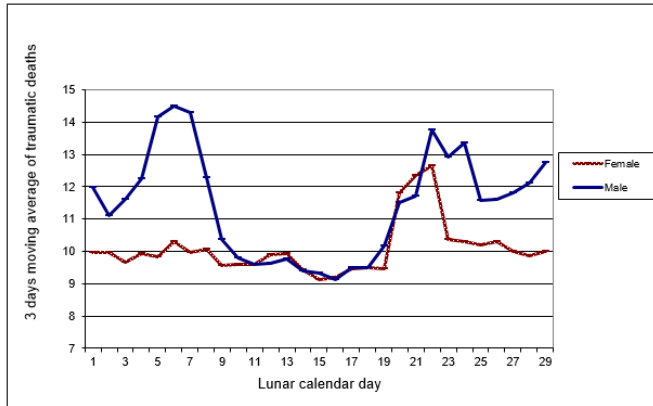


Figure 1. Pattern of trauma deaths in the lunar cycle by gender (1992-2002)

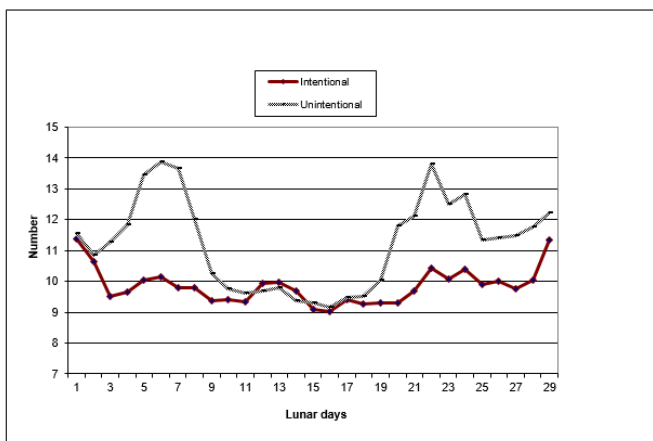


Figure 2. Pattern of trauma deaths in the lunar month due to the intention of deaths (1992-2002)

It was not possible to separate death from other causes of trauma. For example, we do not know how much occupational trauma is. It is possible that the separation of other trauma deaths and their comparison bring other kinds of knowledge for us and change our results.

As evidenced by the obtained results, the moon had no effect on the frequency of trauma deaths. Various factors may contribute to the occurrence of trauma deaths, and if the moon cycle has any influence, it seems that its effect is not such powerful that it could be detected or distinguished from other factors.

Acknowledgement

The authors would like to thank Somayeh Bahrami for her help in the preparation of the article.

Declaration of conflict of interest: The author(s) do NOT have any potential conflicts of interest for this manuscript.

Declaration of Funding: This research has been performed with a grant from Trauma and Surgery Research Center, Sina General Hospital, Tehran University of Medical Sciences (Grant Number: No.61).

Declaration of informed consent: there is no information (names, initials, hospital identification numbers, or photographs) in the submitted manuscript that can be used to identify patients.

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