G72 The Influence of the Meteorological Factors on Occurrence of the Suicide Cases

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The goal of this presentation is to demonstrate the correlation of the dependency between meteorological factors in defining the reasoning in suicides for forming training for prevention and alertness.

This presentation will impact the forensic science community by assisting in increasing the understanding of suicide.

During the investigation of suicide cases, the focus is ordinarily on the location of the event, the type of death, personal information and additional documents but it is also important to study other factors influencing the death, factors like meteorological conditions. Full– fledged suicide has many affects on society and many scientists pay very close attention to it, but most of the significance is that suicide is a social and medical problem.

Meteorological and heliophysics factors as well as socio–economic events have a great influence on the emotional state of an individual, and may also be factors in the occurrence of several diseases. Moreover, they may also increase the occurrence of suicide.

Factors such as atmospheric pressure, air temperature, humidity, and solar radiation have been fully analyzed with respect to the influence on suicide. Reports from suicide cases with conclusions of medical examiners for a five-year period were provided by the Main Bureau of Forensic Medicine in Tashkent, Uzbekistan. Information about temperature, humidity, atmospheric pressure, rain, and magnetic storm indices in Tashkent city were obtained from Uzhydromet, the Hydrometeorological Services Center in Tashkent.

Study results were analyzed for significance using the Student t-test method.

The results of the analysis of both suicide cases and meteorological factors have been combined and adequate statistics had been created. After certain procedures it had been highlighted that the correlation between two types of factors is indirect. This correlation was worked out by Health Institute of the Ministry of Health of the Republic of Uzbekistan for early prognosis of suicide occurrences affected by many factors.

This study of the effects of meteorological factors on suicide rates showed a strong correlation only with atmospheric pressure and air temperature. The method of direct correlative relationship (2, 3) worked out by the Republican Information Analytical Center was applied to this data to study the effect of many meteorological factors on suicide rates. The results of this study allowed for the creation of a formula for predicting the number of suicides cases as a function of air temperature

and atmospheric pressure: **$X = 0{,}014198 \{ T (^0C)\} - 0{,}0000708 \{ P (GPa)\} + 0{,}65990$;** where, X= number of expected suicides per day; T= expected air temperature; P= expected atmospheric pressure.

According to given equation, the average fluctuation of the number of expected occurrences is ± 0, 05, at a confidence of 95%.

The above study shows that there is a certain relationship between meteorological factors such as air temperature and atmospheric pressure with the occurrence of suicide cases. The developed formula based on the combination of meteorological factors makes it possible to predict the expected suicide states and take preventive measures.

Forensic Pathology, Suicide, Meteorological Factor

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