

Profile to Assess Recurrence Phenomenon of Suicidal Incidents among Target  
Populations in Washington State

Vatsalya Vatsalya, MD  
American University  
McCabe Hall  
225 4400 Mass Ave. NW  
Washington, DC  
[vv4238a@american.edu](mailto:vv4238a@american.edu)

Dr. Robert Karch  
Health Promotion Management Program  
4400 Mass Ave NW  
Washington DC 20016  
[rkarch@american.edu](mailto:rkarch@american.edu)

Silvia M. Argueta, M.D.  
Evangelic University of El Salvador  
John Paul Avenue  
El Salvador, El Salvador  
[Silvia.arguet@gmail.com](mailto:Silvia.arguet@gmail.com)

**Introduction:** Washington State has the 16th highest suicide rate in the nation and suicide is the eleventh leading cause of death with 814 death reported in year 2005 with a rate of 13.1 incidents per 100,000 (age-adjusted) of population, compared to the national US rate of approximately 11.0 as per the reports by Department of Health, Washington State (DOH, WA) in year 2007. In 2004 it also reported that suicide was the second most leading cause of death and altogether 17% deaths in the 15 - 24 age group. Nearly two-thirds of teens with clinical depression may not get treated. Among these, males, 15 to 19 years old are five times more likely than females to commit suicide. In 2007 reports, Center for Health Statistics recommended promotion of preventive procedures that can reduce such incidents by precisely identifying target population. Development of a predicting instrument, which can provide appropriate behavioral evaluation, can be one of the choices to this requirement. Development of this instrument is based on set of primary repetitive characters, which can provide a predictable analysis of such behavior among the high-risk group individuals, who are susceptible to attempt suicide. The concept of predictor is to identify the patients with tendency to attempt suicide and inform the healthcare professionals and people in contact, to prepare and implement specific therapeutic plan to minimize such incidents further.

**Methodology:** Data source of a total of 15,826 patients (with single and/or more incidents of identified suicidal attempt history during the interval 2002-2006, between the age group of 15 and 75 + years) for the profile analysis has been collected from yearly published hospitalization reports of suicide incidents from Washington State public health statistical data bank, Washington State Injury and Violence Prevention Program. Significant cohort parameters have been included for the development of the instrument, namely gender, age groups, health condition, anthropological, biological and environmental factors (economic, academic, social, ethnic, cultural background, community). Statistical analysis utilizing SPSS 16.0 has been performed to identify yearly repetitive variables of the parameters with rate and frequency comparisons. Highly repetitive prevalent features observed in the evaluation have been consigned under high risk category, average repeating variables as intermediate and less frequently occurring variables as low risk category. These parameters were constructed in the form of an analog pathway with the prominent parameters evaluated initially in descending order of risk relevance and all the features of each parameter undergo comparison for profile matching. **Follow – up evaluations with parameters evaluated from various new case studies (a total of 627 case data) randomly, indicated results in compliance with accuracy of more than 90%, when the parameters are run through the analog model.**

**Results:** The parameters are assessed in relation to the numbers of attempts and actual suicide incidents reported between year 2002 and 2006. The age groups 15-24 and 35-44 yrs have the maximum incidents of attempted suicides. The largest conversion of the attempts into actual suicide is demonstrated by the age group 45 – 54 yrs and from 2002 year onwards, there is a steady increase in the rate of suicide and suicide attempts in this age group. Among adolescent and young age groups, approximately 25% of attempted suicide by youth male results in death; whereas only three to four percent deaths result in females. In the age group 15 to 19 year, males are five times more likely than females to commit suicides. Suicide comparison ratio among the adult male and female patient population rate has been measured as 7 : 2, which is evident from the finding that during 2003–2005 period, males in Washington accounted for 79% of total suicides; though majority of females have attempted suicides with a percentage of 62%. Caucasian and American Indians groups demonstrate largest proportion of actual number of suicidal attempts and incidents as 14 every 100,000 resident population each. Poisoning is identified as the most common means for attempted suicide cases among 15 -24 and 35 – 54 age group whereas firearms are as the most common means among the young and adult groups for committing suicide. Based on the results of statistical analysis and evaluations; gender, age group, ethnicity, health and social condition, education, and exposure and access to carry out self-fatality are the characteristics that have been identified and incorporated for the development of the instrument.

**Discussion:** Age groups 15 – 24 and 35 – 54 year demonstrate the majority of incidents of suicide and suicidal attempts. In year 2005, US CDC has identified parallel emergence of economic hardship as a primary reason for the growth of suicide rate among the 45 – 54 year age group. Higher suicide rate among is recorded among males, approximately 25% of attempted suicide by youth male results in death, whereas 3 - 4% death results in females, though higher attempt rate among females is observed. From 2002 onwards, there is a steady increase yearly, in the number and rate of suicide incidents in the 35 – 54 age groups, when rise in financial and family crisis and PTSD as a leading cause of depression have been identified with the patients as illustrated in the yearly report published by DOH, WA in 2007. Individuals with physical and sexual abuse have four times higher suicide attempt rate than non-abused. A predictor profile for the purpose of interpreting specific behavior would strengthen the intervention strategies, reduce the frequency of such incidents, and regularize involvement of health care and financial resources. Application of a predictor instrument can supplement identifying target population, assist categorizing adequate preventive health care services, which otherwise may not be identified in due course. Research has not yet evaluated the relative importance of race, ethnicity, poverty, and education in relation to rates of suicide, further scope of study may identify relative measurements. The events and features of suicidal behavior vary with area - specific factors for example a preliminary investigation as per world report on violence and health (WHO) in 1999 for an above-average suicide rate in the Kutznetzk Basin, Russian Federation, between 1980 and 1995 cited economic instability, the disintegration of the former Soviet Union and other. In the past 20 to 30 years, suicide rates have increased strikingly among indigenous peoples in both Australia and Canada. Depending upon the various factors and parameters in different locations, with specific standardization, an appropriate construction of the predictor instrument and evaluation may be utilized for similar diagnostic procedures.