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### PHYSICAL & MENTAL ALTERATION WITH EXTERNAL CAUSES OF DEATHS: APPROACH VIA NESTED LAYERED LOGISTIC REGRESSION ANALYSIS FOR TRAFFIC ACCIDENTAL DEATHS IN 2011

**Aim:** To re-considerate the possibility to understand the physical and mental alteration via support project by the Japanese Cabinet Office.

**Materials & Methods:** The subject of this study is the results of WEB questionnaire for the support of the children with the death of families after traffic accidents in 2011 carried out by the Japanese Cabinet Office. The 4 items on the physical difficulty after traffic accidents, the 13th items on the change of behaviors after traffic accidents, the 10<sup>th</sup> items on mental alteration after traffic accidents were extracted and scaled each by 6 semi-ordered scale. Nested logistic regression analysis was performed using SAS EG7.1. Cumulative logit model with Newton-Raphson with Ridging and Stepwise selection was performed. Nested structures were constituted by upper level structure including 3 items such as physical difficulties+behavioral changes+mental alteration), by middle level structure including plural items those made each 3 items in the upper level and by lower level structure including 6 scales of each item in the middle level. The percent value by 6 scales was used as quantitative variables and superior 3 items were used as group variables. Nested treatments were carried out plural items in the middle level structure to the quantitative variables those are the percent value by 6 scales.

**Results & Conclusion:** Judged as the criterion of model convergence, score test, statistic of goodness, arranged R<sup>2</sup> etc., the model of physical difficulty was best for goodness and insomnia(13.2644:95%CI 0.402-0.2094), energy loss(9.3626:95%CI 0.0373-0.2125), and under the weather(6.5611:95%CI 0.0311-0.2063) were most contributable factors for physical and mental alteration after traffic accident families. This result could give the different impression from the results by the Japanese Cabinet Office.

### Biography

Toshiko Sawaguchi has been acting as an originally pediatric forensic pathologist and moved to the epidemiology and public health field since 1<sup>st</sup> April 2015 as the research managing director.

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