D14   The Influence That Personal Attributes of Elderly Drivers Contribute to Driving Ability and Its Secular Change: An Analysis of Physical and Mental Functions, Living Conditions, and the Effects of Diseases and Medication

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Learning Overview: After attending this presentation, attendees will understand there are items that are not present in accident statistics and accident databases, such as health condition, medication state, life attitude, etc., in the micro data, such as a written expert opinion of the accident case being caused by health conditions, etc.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by showing that the health conditions of the elderly, the number of years of education, the history of falls, and living conditions all affect driving ability.

Today, Japan has a high proportion (26.7%) of people over 65 years of age in the total population and faces a super-aging society. Accordingly, accidents caused by elderly drivers have increased and become a social problem. The Cabinet Office predicts that the elderly population will continue to increase in the future. On the other hand, movement by car is an important means to support the autonomous living of the elderly, and those who do not drive or who quit driving are more likely to be at risk of developing dementia than those who are still driving. Since it has been reported that this doubles the dementia risk, it is undesirable to easily take driving away from the elderly.

Therefore, since 2008, in a senior driver support project of Fujikawaguchiko-machi, the relationship between the physical function, brain function, lifestyle, etc. of the elderly and driving ability and its secular change have been investigated. Regarding the relationship between personal attributes and driving ability in elderly people, a significant positive correlation was found between the number of years of education and driving ability. Since the number of years of schooling is thought to affect occupation and life thereafter, it suggests that the living conditions of the elderly affect driving ability. From the influence of secular change, it became clear that most elderly people improved or maintained their driving ability. However, as a result of analyzing personal attributes of elderly people whose driving ability has declined, it turned out there were accident records and fall experiences that did not occur in the past. In addition, due to the effects of accidents and falls, opportunities for regular exercise were also decreasing. From this, it became clear that the health condition of the elderly, the number of years of education, the history of falls, and the living conditions affect driving ability. If it is possible to investigate health and living conditions from a detailed analysis of actual traffic accidents, it is considered that there is a possibility that the correlation with the accident becomes clear.

Currently, there are several detailed traffic accident databases, including the National Automotive Sampling System (NASS/CDS). However, they do not contain data on health and living conditions.

Therefore, it became apparent there are items that are not present in the accident statistics and databases, such as health condition, medication, life attitude, etc., or in the micro data, such as written expert opinions of accident cases caused by health problems, etc. This study proposes adding this information to traffic accident databases, such as NASS-CDS. This would enable safe driving of elderly drivers for a long period of time by using the databases and including the attributes and characteristics that affect driving ability that are revealed from analyses of accidents caused by health conditions, etc. and would be useful for research to prevent accidents beforehand.

Health-Related Vehicle Collisions, Attributes of Elderly Drivers, Field Experiment