



SUICIDE AND ACCIDENT CLASSIFICATION METHODOLOGY

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1. INTRODUCTION

Not all fatalities in road traffic are accidents, some are suicides. Since 2010 Sweden has been presenting statistics on suicides in road traffic separately from that on fatalities caused by accidents. To undertake this, a method has been developed for classification of road traffic fatalities in order to determine if the fatality was caused by an accident or by a suicide.

The work has been carried out in cooperation between The Swedish Transport Administration, The Swedish Transport Agency and The National Board of Forensic Medicine.

2. OBJECTIVE

The objective has been to develop and evaluate a method for suicide and accident classification of road traffic fatalities. Another objective has been to describe suicides in the Swedish road transport system.

3. METHOD AND MATERIAL

3.1. In-depth studies of fatal accidents

In Sweden all fatalities in road traffic undergo an in-depth study by accident investigators at The Swedish Transport Administration. During 2010-2014 a total of 1 528 persons were killed in Swedish road traffic, natural deaths excluded.

3.2. Classification scale

A five level classification scale has been developed. Fatalities in level 1 and 2 are classified as suicides in the official statistics.

Table 1: Classification scale for road traffic fatalities

Level	The result of the examination...
1	shows that the manner of death was suicide – requires a farewell letter or equivalent
2	strongly supports that the manner of death was suicide – an almost certain suicide but the intention is based primarily on the course of event and psychosocial information about the road user
3	cannot determine whether the manner of death was suicide or the result of an accident – the information has not been sufficient in order to determine whether the fatality was the result of a suicide or an accident
4	strongly supports that the manner of death was a result of an accident – an almost certain accident
5	shows that the manner of death was an accident

3.3. Criteria for selection of cases

Criteria for the selection of cases has been produced based on the traffic event, psychosocial backgrounds factors and knowledge of farewell message, table 2.

Table 2: Criteria for cases that are to undergo the classification process

1. Farewell message, oral or written, where suicidal intention is clearly communicated and where the traffic event supports a suicidal act
2. A traffic event that supports a suicidal act in combination with knowledge of <ul style="list-style-type: none"> a) previous known suicide attempts in the near past b) indirect suicidal communication in the near past c) communication about committing suicide or having no reason to live d) ongoing prolonged depression e) previous severe emotional stressful life event
3. A traffic event that strongly supports a suicidal act

3.4. Method for psychosocial examination

A method for psychosocial examination has been developed. An investigator conducted an expanded psychosocial data collection through contact with the police, relatives, health care institutions and others to get more data for the assessments. The psychosocial examination has been a part of the methodology since 2012. The method for psychosocial examination is described in paper no. 16 *Fatalities in road traffic; a result of accidents or suicides?*

3.5. Expert group for classification

The selected cases were classified by an expert group of five experienced professionals with knowledge in forensic medicine, psychology and traffic safety. Difficult cases were discussed in a reference group.

4. RESULTS

From 2010 to 2014 a total of 128 fatalities have been classified as suicides, 46 as level one and 82 as level two. From 2012 to 2014, when the psychosocial information was included in the analysis, 10 per cent of all fatalities were classified as suicides. In 2010 and 2011 when the extra psychosocial information was not available, 6 per cent of the fatalities were classified as suicides.

Table 3: Result of the suicide and accident classification of road fatalities in Sweden 2010 to 2014. Fatalities in level 1 and 2 were classified as suicides.

Level	2010	2011	2012	2013	2014
1. suicide	9	7	14	9	7
2. strongly supports... suicide	7	16	22	19	18
3. cannot determine	10	11	8	13	6
4. strongly supports... accident	13	9	5	7	10
5. accident	243	299	273	240	254
Sum	282	342	322	288	295
Percentage of suicides (level 1+2)	5,7 %	6,7 %	11,2 %	9,7 %	8,5 %

Half of the suicides (65 of 128) involved collisions with heavy goods vehicles or buses. The collision types in these cases were head-on collisions or pedestrians in conflict with the vehicles.

One fourth of the suicides (31 out of 128) occurred on motorways and 2+1 roads with median barrier. On these road types, suicides with pedestrians in conflict with motor vehicle was the most frequent collision type (25 out of 31).



Three collision types stand out when it comes to suicides in road traffic; single vehicle collisions, head on collisions and pedestrians in conflict with motor vehicle. These three collision types accounted for 96 per cent of all suicides (123 of 128). Also for fatalities due to accidents, these three collision types were most common and accounted for 68 per cent of the fatalities (956 of 1400).

When dividing the suicides into age groups with ten year intervals (0-9, 10-19 etc.) it was found that the largest number of suicides, 24 per cent (31 out of 128), occurred in the age group 30-39 years. This differed from fatalities due to accidents where 10 per cent (145 out of 1400) of the fatalities occurred in this group. The peak among fatalities due to accidents was in the age group 20-29 years old in which 17 per cent (241 out of 1400) of the fatalities occurred.

5. DISSCUSSION

A person who is depressed can be prone to take more risks which can lead to a traffic incident without any purpose of committing suicide. To determine if a fatality is caused by a suicidal act or an accident is a complex task and demands a well-structured and methodical approach. The basis for the assessment is to inquire and examine all available data regarding the accident, including the psychosocial status of the deceased, and then make the classification. A benefit of doubt principle should be applied, i.e. if there is a small possibility that a fatality is due to an accident, it should be classified as a level 3 case and be considered as an accident in the official statistics. For example if persons have a high level of alcohol in the blood, this makes it difficult to know the degree of intent in an act and most of these cases are classified as level 3.

If other countries are to implement the method there is a need for good cooperation between authorities. A factor that can make the assessment difficult is if important documents are missing. If for example an autopsy have not been carried out, it will be hard to determine if the fatality is due to a suicide or an accident since the autopsy report is an important document for the assessment. However, even if data are lacking countries can still benefit from implementing the methodology. When information is lacking many cases will be classified as level 3 (cannot determine) and this can be a trigger to improve the data collection.

6. CONCLUSION

The study can conclude that suicides account for a significant proportion (10 per cent) of road traffic fatalities. The distribution of suicides differs from that of fatalities due to accidents in a number of factors. This must be considered in the traffic safety work even though suicides are reported separately in the official statistics of road deaths. The Vision Zero includes fatalities caused by a deliberate act.

7. FUTURE

The suicide and accident classification methodology can also be used for other modes of transport. Work has started using the method for railway fatalities in Sweden where suicide is a major concern. A common method of suicide classification of fatalities for all transport modes will contribute to a more reliable basis for suicide prevention measures.

Other countries have shown interest in the method and for example Norway has advanced plans to use the method to classify road fatalities.

Also in other areas where there is a need to determine if a fatality is due to an accident or a suicide the method can be used. The Swedish Civil Contingencies Agency has used the method to classify fatalities in fires.



8. SUMMARY

In Sweden, statistics on suicides in road traffic are presented separately from accident fatalities since 2010. A suicide and accident classification methodology has been developed that includes:

- criteria for cases that are to undergo the classification process
- a classification scale
- psychosocial examination
- an expert group that carries out the classification

Analyses show that 10 per cent of the road traffic fatalities are suicides. The distribution of suicides differs from that of fatalities in accidents in a number of factors. This knowledge needs to be considered in the traffic safety work since the Vision Zero includes fatalities caused by a deliberate act.

REFERENCES

Swedish Transport Administration (2014). Vilka dödsfall i vägtrafiken är suicid? Metodbeskrivning samt analys av åren 2010-2013. Publication 2014:113.

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