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An online intervention against speed offending: Largescale randomized controlled trial in Denmark (preliminary outcomes)

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Abstrakt på dansk

For høj hastighed er fortsat en stor udfordring for trafiksikkerheden. Formålet med dette studie var at (1) udvikle en e-læringsintervention om trafiksikkerhed til privatbilister, der lige har fået en fartbøde, og (2) evaluere effekten i et lodtrækningsforsøg i hele Danmark af denne intervention på hyppigheden af nye bøder. Dataindsamlingen i studiet er endnu ikke afsluttet, men der er primo marts rekrutteret knap 9.400 deltagere. Vores præsentation vil redegøre for, hvordan selve interventionen er skruet sammen, samt give foreløbige resultater fra bl.a. e-læringsinterventionens opdeling i bilister som henholdsvis røde (høj risiko for ny bøde), gule (middel risiko) og grønne bilister (lav risiko). Studiet indsamler også data vedr. bilisternes holdninger til hastighed, aktuel adfærd og generel risikopfattelse, og på baggrund af disse vil vi segmentere studiedeltagerne i grupper, som formentlig kan prædikere hvem der er i højst risiko for en ny bøde. Vi præsenterer denne segmentering og fortæller ydermere om udfordringer i studier af denne størrelse med følsomme data fra Rigspolitiet.

Background

Speeding is still a key challenge for road safety. The Danish Road Directorate estimates that in about half of all road fatalities excessive speed is a factor. This calls for interventions against speeding.

The understanding of what is on the car driver's mind when speeding is crucial for the prevention of crashes. Large scale, high-quality experiments challenging the mind set of speeding car drivers are however lacking.

Our aim was (1) to develop an online intervention teaching car drivers, having experienced a recent speeding ticket, about road safety and (2) evaluate the effect of this intervention on future speeding

offences in a randomized nationwide controlled trial approaching all private car speed offenders in Denmark.

Methods

We developed an online intervention based on so-called *priming* of the mind set of speed offenders, hypothesizing that better knowledge about implications of speeding, consciousness about own behavior, attitude of own behavior and help to development new strategies in trigger situations will prevent the offenders of recurrent tickets. A clear conceptual choice was made of not “scaring off” the offenders but rather encourage the avoidance of a new ticket through positive change. A change in risk perception and insight into own behavior and attitudes along with new acting strategies is supposed to affect the drivers’ future speed ticket recidivism propensity. The online intervention was built as a 24-question test on relevant and contemporary road safety issues. Based on the participants’ responses to the questions they were divided into three groups of drivers (green=low risk of a new ticket, yellow=middle risk, and red=high risk) and received feedback accordingly. The intervention was pre-tested in a group of 100 drivers who had recently received a speed ticket.

Figure 1 depicts the study flow. The study was initiated through distribution of invitation by digital mail to all private car speed offenders in Denmark during a study period of approximately ten months (fall 2021 to fall 2022). The study period was designed to obtain enough participants to obtain statistical power and thus clear results (20,000-25,000 participants). Contact information of speeding ticket car owners were transferred from the Danish National Police to Aalborg University. Car owners who had not personally been driving the car while speeding were excluded from the study. Participation was voluntary.

Firstly, all participants filled out a questionnaire asking for background information e. g. on their risk perception, attitudes towards speeding and history of speeding tickets. Then, the participants were randomly distributed into a test or control group. Eventually, the test group was exposed to the online intervention while the control group was not approached further until after one year when all participants in both groups received a follow-up questionnaire. The effect outcome was defined as time to a recurrent speed ticket within the follow-up period of one year after randomization. but we cannot give preliminary results on the effect within the time frame of the conference.

We will present the study population at baseline through use of descriptive statistics and latent class analysis segmentation of the participants into homogeneous groups regarding knowledge of, attitudes towards and insight into road safety and the risk of speeding. We will also develop profiles of the green-yellow-red drivers and give an overview of the opinions of the intervention and chosen strategies in the test group through descriptive statistics.

Results

The status on this ongoing large-scale study is that by March 6, 2022, 108,764 Danish speed offenders have received an invitation, of whom 13,916 have responded. Approximately 20% were subsequently excluded because they did not drive the care when the ticket was given and additionally 14% did not complete the baseline questionnaire. In total, 9,375 participants were included in the study and subsequently randomized.

Preliminary results suggest that the participants are indeed representative of the total population of private car speed offenders in Denmark with regard to gender, penalty size, and speeding location. The average age of the participants (54 years) is slightly higher than that of the total population (49 years). Results are limited but suggest that 78% of the test group find the advice that they receive in the online intervention relevant, while 63% find that the program has made them change their opinion about speeding. 51% report to have acquired new knowledge about speeding and road safety, and 74% feel motivated to comply with the speed limit in the future.

Our presentation will explain the intervention and address more about the background e. g. risk perception of the participants at baseline. Furthermore, we will present the test group answers of the intervention quiz including the distribution of red-yellow-green drivers, who are characterized regarding their attitudes and insight into own behavior. We will also present an overview of the new strategies against speeding which are developed by the study participants.

Preliminary results suggest that 45 % of the test group are green drivers, 44 % become yellow drivers whereas 11 % are red drivers with an expected high risk of a new ticket. The red drivers are characterized e. g. by male gender, younger age, many recent speed tickets, self-reports of not being affected by tickets – however oppositely – many of them aware that friends and relatives want them to drive properly.

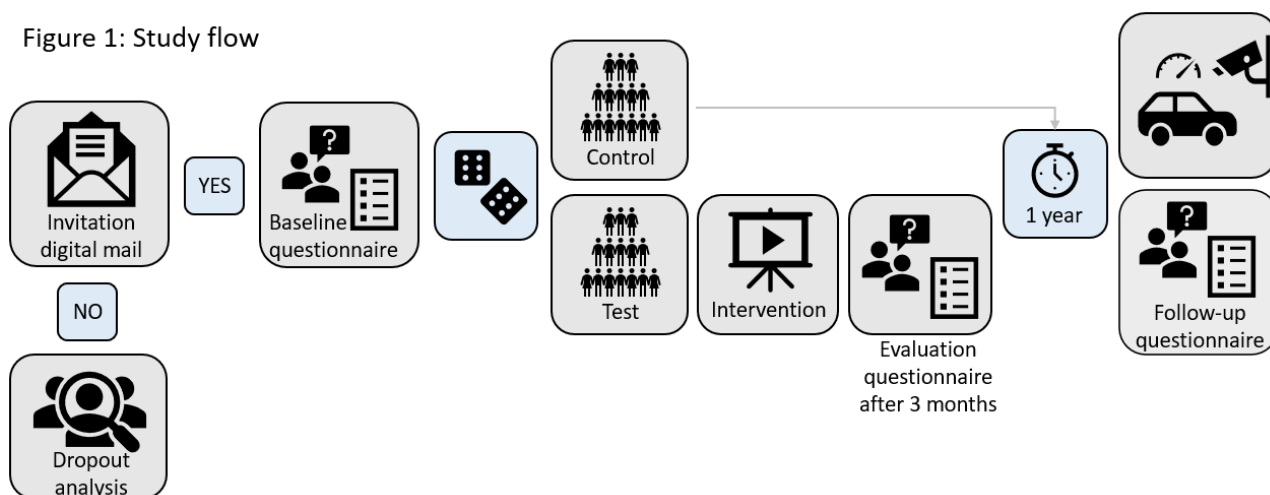
We will furthermore touch upon the challenges of the study: the relatively low participation rate and speed offenders being intimidated by receiving the invitation unexpectedly.

Conclusions

We expect an effect of the online intervention on the frequency of new speeding tickets within one year after randomization. Our future work will characterize driver subgroups and describe how to build effective online interventions in future prevention of speeding and thus prevention of crashes and fatal and serious injuries on our roads.

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Figure 1: Study flow



Præsentationen vil blive holdt på dansk og hører naturligt hjemme i en trafikikkerhedssession.