Accompanied driving in Denmark

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Abstract

In 2017, Denmark allowed post-license accompanied driving as a voluntary option to increase road safety among young novice drivers. To evaluate the use, experiences and possible safety effects of the Danish accompanied driving scheme, the Danish Technical University (DTU) conducted a research study financed by The Danish Road Traffic Authority. The results indicate a large and increasing interest in licensing at age 17, and thus a large potential of improving young driver safety through accompanied driving. However, results also indicate that introducing accompanied driving as a voluntary unguided option where the participants themselves make all decisions regarding the type and amount of engagement in accompanied driving may not ensure the intended safety effect partly due to a limited amount and variety in the driving situations included.

Keywords

Road safety; Young drivers; Driver education, Road user behaviour, Intervention.

Introduction

Young drivers is still a high-risk group. In Denmark in 2019, 22 % of police-registered road traffic crashes involved a person aged 15–24, although this age group only accounted for 13 % of the population (Vejdirektoratet, 2020). Further, the risk of being seriously injured or killed in a road traffic crash is 12 times higher for an 18-year-old driver compared to a driver aged 44 (Christiansen and Warnecke, 2018). It is well known that the high risk of young drivers results from a combination of age- and experience-related factors (OECD, 2006). Accompanied driving is a means to overcome the detrimental effects of limited driving experience and young age by increasing driving experience before access to solo driving. The increased driving experience is expected to lead to a safety effect by strengthening higher-order driving skills such as hazard perception (Vlakveld et al., 2011; Abele et al., 2019) and situation awareness (De Craen et al., 2008; Scott-Parker et al., 2020). However, the safety effect partly depends on the amount and type of driving experience obtained through accompanied driving.

The Danish accompanied driving scheme

In 2017, Denmark allowed post-license accompanied driving as a voluntary option to increase road safety among young novice drivers. It was introduced as a pilot scheme, and at the time of writing (September 2022), the pilot scheme is still running in its original form. The key principles of the pilot scheme are as follows: Until the age of 18, fully licensed 17-year-olds may drive if accompanied by an experienced driver who fulfils specific criteria. All pre-license training must be done at a driving school and can be initiated at the age of 16,5. At age 17, the young person can apply for the practical and theoretical test, and when fully licensed he/she is allowed to engage in accompanied driving. The accompanying person must be 30 years old, have held a (Danish) driver's license for 10 years with no disqualification, and be able to drive the car legally at any time if needed. Thus, the accompanying person is not allowed to be impaired in any way (drugs, alcohol, medication, fatigue etc.). It is the responsibility of the 17-year old driver to ensure that the accompanying person fulfills the requirements. No requirements regarding the amount or type of accompanied driving, number of

accompanying persons, registration or training for the accompanying person exist. Access to solo driving is provided automatically at the age of 18. Thus, it is possible to license shortly after turning 17 and to initiate solo driving at age 18 with no practice in between.

This study

To evaluate the use, experiences and possible safety effects of the Danish accompanied driving scheme, the Danish Technical University (DTU) conducted a research study financed by The Danish Road Traffic Authority. The evaluation covered the year 2017 – 2019 and included several sub studies and data types such as a national socio-demographic register data study (Møller & Jensen, 2022), a questionnaire study (Møller, Janstrup, Hjort, & Twisk, 2021), an interview study (Møller, Solgaard, Nielsen, & Twisk, 2022) and crash data analysis (Møller, Andersen, Bonde, Hjort, Janstrup, & Jensen, 2020). This summary presents selected results from the evaluation.

Results

This section presents the results related to four themes: 1) Influence on licensing age and socio demographic characteristics, 2) Amount and type of accompanied driving, 3) Illegal unaccompanied driving and crash involvement, and 4) User experiences. The section ends with a brief conclusion.

Influence on licensing age and sociodemographic characteristics

Results showed that lowering the licensing age to allow accompanied driving for fully licensed drivers at age 17 increased early licensing. Based on data from the Danish Driving License register and Statistics Denmark, which include information about all persons in the Danish population, results showed that the possibility to license at age 17 did not increase the total share of young people licensing before the age of 19. Both before 2017, when licensing at 17 was allowed, and by the end of 2019 when the accompanied driving scheme had been running for three years, approximately 2/3 of Danish 19 year olds had a driver's license. However, the share of young people choosing to license already at age 17 increased. From 2017 to 2019, this proportion increased from 43 % to 61 % (Møller & Jensen, 2022).

With regard to the socio-demographic characteristics of young people licensing at age 17, results showed that the likelihood of licensing at age 17 compared to licensing at age 18 increased with family income and number of cars in the household. Parents' education was also found to play a significant role in the probability of licensing at 17. Compared to young people whose parents had a basic education, the likelihood of licensing at 17 increased by 36 % if the parents had a vocational education and by 26 % if the parents had a higher education. In addition, if the young person had been involved in non-traffic violations or accidents, the likelihood increased with 14 %. A few socio-demographic characteristics were found to reduce the likelihood of licensing at age 17. Thus, the likelihood decreased by 51 % if the young person was an immigrant compared to being a Dane but the likelihood of descendants did not differ significantly from that of young Danes. In addition, the likelihood decreased by 25 % for young people living with only one parent. Perhaps surprisingly, the analysis found no effect of gender on the likelihood of licensing at age 17 compared to licensing at age 18 (Møller and Jensen, 2022).

Amount and type of accompanied driving

The study showed that the majority (58%) of those who obtained a driver's license at age 17 obtained it six months or less before turning 18. On average, the 17-year-olds obtained their driver's license 5.3 months before turning 18 (Møller & Jensen, 2022). A survey among young drivers who had engaged in accompanied driving showed, that the majority (81 %) drove with an ACP at least once a week. 41% had engaged in accompanied driving for 3 months or less, 31 % for 4–6 months, and 28 % for 7 months or more. As part of the survey, participants were asked to self-report the average length of their accompanied driving trips. On this basis, an average trip length of 23 km was

identified. Further, it was estimated that 25 % had driven <400 km, 50% <1060 km and 75% <1680 km of accompanied driving (Møller et al., 2021). The majority (87 %) indicated to be satisfied with the amount of accompanied driving. For the majority of the young drivers (56 %) most accompanied driving trips occurred on familiar locations. Similarly, the majority (63 %) indicated that the trips were trips that were to be driven anyway such as daily commutes.

Illegal unaccompanied driving and crash involvement

Based on survey data (Møller et al., 2021) results indicated that the majority (83 %) of the young drivers had not engaged in illegal unaccompanied driving. 17 % self-reported to have engaged in illegal unaccompanied driving. A small majority (58 %) had friends who had done so. Interviews with accompanied driving participants (young drivers and accompanying people) showed that the temptation to engage in illegal unaccompanied driving increased with increasing driving experience, particularly after three months of accompanied driving. Both parents and young drivers justified illegal unaccompanied driving by the belief that the young driver's driving skills were sufficient for solo driving and indicted that current sanctions (a fee) did not have a deterring effect (Møller et al., 2022).

In the period 2017-2019, 88 (< 0,5%) 17-year-old fully licensed drivers were involved in a crash. The presence of an accompanying person at the time of the crash was unknown. Single vehicle crashes was the most frequently occurring crash situation. In the majority of the crashes, risk factors such as alcohol, drugs or speeding were not involved. This indicates that shortcomings in higher-order driving skills could be a contributing factor. Due to small numbers, the available data did not allow comparison of crash risk between people licensing at age 17 and at age 18 (Møller et al., 2020).

User experiences

An interview study including both young drivers and accompanying people identified factors affecting engagement in accompanied driving at different levels of the social environment such as friends and family, institutions, cultural influences and enforcement (Møller et al., 2022). Results identified a number of facilitators and constraints influencing the amount and type of accompanied driving. The facilitators and constraints operated at different levels of the social environment and the results thereby indicated that if policy measures are implemented without sufficient consideration of influences within the broader social environment intended safety effects may be compromised. A key result derived from the user experiences was that a structured and guided approach is needed to optimize the safety effect of accompanied driving and that leaving all decisions regarding the amount and type of accompanied driving to the participating young drivers and accompanying people may not ensure the intended safety benefit. Key aspects associated with this unintended effect include influence from unhelpful motivations and limited knowledge about the relevance and contribution of accompanied driving. Mismatched expectations regarding accompanied driving between the young drivers and the accompanying people was also identified as a key influence associated with a limited amount of accompanied driving as well as limited variation in the driving situations involved.

Conclusion

Overall, the results of the study indicated that accompanied driving was well received in the Danish population. Results indicated a large and increasing interest in licensing at age 17, and that socio-demographic characteristics influenced the likelihood of licensing at age 17. Thus, the results indicated a large potential for increasing young driver safety through accompanied driving in Denmark. However, results also indicated that introducing accompanied driving as a voluntary and unguided option where participants make all decisions regarding the type and amount of accompanied driving may not ensure the intended safety effect partly due to a limited amount and variety in the driving situations included. In addition, results indicated that factors operating at different levels of the social environment

influenced engagement in accompanied driving, and that addressing such influences when designing policy measures are important to optimize the effect of implemented measures such as accompanied driving.

References

Abele, L., Haustein, S., Martinussen, L.M., Møller, M., 2019. Improving drivers' hazard perception in pedestrian-related situations based on a short simulator-based intervention. Transport. Res. Part F: Traffic Psychol. Behav. 62, 1–10. https://doi-org.proxy.findit.dtu.dk/10.1016/j.trf.2018.12.013.

Christiansen, H., Warnecke, M.L., 2018. Risiko i trafikken 2007–2016 (in Danish). Available at: https://orbit.dtu.dk/en/publications/risiko-i-trafikken-2007-2016.

De Craen, S., Twisk, D.A.M., Hagenzieker, M.P., Elffers, H., Brookhuis, K.A., 2008. The development of a method to measure speed adaptation to traffic complexity: Identifying novice, unsafe, and overconfident drivers. Accid. Anal. Prev. 40, 1524–1530. https://doi-org.proxy.findit.dtu.dk/10.1016/j.aap.2008.03.018.

Møller, M., Andersen, S.K., Bonde, N., Hjort, K., Janstrup, K.H., Jensen, T.C., 2020. Evaluering af forsøgsordning med kørekort til 17-årige. Hovedrapport. DTU, September 2020.

Møller, M., Jensen, T.C., 2022. Socioeconomic status and licensing trends in the context of supervised driving in Denmark. Journal of Safety Research, 81, 110-115. https://doi.org/10.1016/j.jsr.2022.02.002

Møller, M., Janstrup, K.H., Hjort, K., Twisk, D., 2021. Introducing accompanied driving in Denmark. Safety-related differences between youth licensing with immediate or delayed access to solo driving. Accident Analysis and Prevention, 162, 106394. https://doi.org/10.1016/j.aap.2021.106394

Møller, M., Solgaard, K. J., Nielsen, I.H., Twisk, D.A.M., 2022. A qualitative investigation of the experiences of young drivers and accompanying persons with accompanied driving in Denmark. Safety Science, 153, 105823 https://doi.org/10.1016/j.ssci.2022.105823

Møller, M., Janstrup, K.H., 2021. Has crash involvement among 17-year-old unlicensed drivers changed after post-licence accompanied driving from the age of 17 was allowed in Denmark? Accident Analysis and Prevention, 156, 106109. https://doi.org/10.1016/j.aap.2021.106109

OECD, 2006. Young Drivers. OECD Publishing, Paris, France, The Road to Safety.

Vejdirektoratet, 2020. Trafikulykker for året 2019. https://www.vejdirektoratet.dk/api/drupal/sites/default/files/2020-08/Trafikulykker%202019.pdf.

Vlakveld, W., Romoser, M.R.W., Mehranian, H., Diete, F., Pollatsek, A., Fisher, D.L., 2011. Do crashes and near crashes in simulator-based training enhance novice drivers' visual search for latent hazard? Transport. Res. Rec.: J. Transport. Res. Board 2265, 153–160.