Understanding traffic crash under-reporting: Linking police and medical records to individual and crash characteristics

Objective: This study aligns to the body of research dedicated to estimating the underreporting of road crash injuries and adds the perspective of understanding individual and crash factors contributing to the decision to report a crash to the police, the hospital, or both. Method: This study focuses on road crash injuries that occurred in the province of Funen, Denmark, between 2003 and 2007 and were registered in the police, the hospital, or both authorities. Underreporting rates are computed with the capture–recapture method, and the probability for road crash injuries in police records to appear in hospital records (and vice versa) is estimated with joint binary logit models. Results: The capture–recapture analysis shows high underreporting rates of road crash injuries in Denmark and the growth of underreporting not only with the decrease in injury severity but also with the involvement of cyclists (reporting rates of about 14% for serious injuries and 7% for slight injuries) and motorcyclists (reporting rates of about 35% for serious injuries and 10% for slight injuries). Model estimates show that the likelihood of appearing in both data sets is positively related to helmet and seat belt use, number of motor vehicles involved, alcohol involvement, higher speed limit, and females being injured. Conclusions: This study adds significantly to the literature about underreporting by recognizing that understanding the heterogeneity in the reporting rate of road crashes may lead to devising policy measures aimed at increasing the reporting rate by targeting specific road user groups (e.g., males, young road users) or specific situational factors (e.g., slight injuries, arm injuries, leg injuries, weekend).

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