Cardiac arrest

302 COVERAGE OF AUTOMATED EXTERNAL DEFIBRILLATORS AND VOLUNTEER RESPONDERS ACCORDING TO GEOGRAPHICAL AND DEMOGRAPHIC CHARACTERISTICS IN DENMARK

11NB Christensen*, 2,3F Folke, 2,4LJ Jørgensen, 2,4JX Jacobsen, 2,4JS Kjølbye, 2,4MCT Gregers, 2K8 Ringgreen, 2L Andelius, 2,3C Torp-Pedersen, 2,3CM Hansen. 1University of Copenhagen, Faculty of Health and Medical Sciences; 2Copenhagen University Hospital – Copenhagen Emergency Medical Services, Denmark; 3Department of Cardiology, Copenhagen University Hospital – Herlev and Gentofte, Denmark; 4Department of Clinical Medicine, University of Copenhagen, Denmark; 5Department of Cardiology and Clinical Research, Copenhagen University Hospital – North Zealand, Denmark; 6Department of Cardiology, Aalborg University Hospital – Aalborg, Denmark; 7Department of Cardiology, The Heart Centre, Rigshospitalet, Denmark

10.1136/bmjopen-2022-EMS.29

Background To increase cardiopulmonary resuscitation and defibrillation, many countries have implemented volunteer responder programs to alarm voluntary laypersons in out-of-hospital cardiac arrest (OHCA). This study investigated whether demographic and geographical characteristics were associated with lack of AEDs and volunteer responders.

Method OHCA from the Danish Cardiac Arrest Registry (2016–2019) with a valid GPS-location were included. OHCA location was assigned to geographical and demographic characteristics defined by Urban Atlas (1) which currently covers 40% (17,347 km2/42,933 km2) of Denmark, corresponding to 66% (10,126/15,309) of OHCA from the registry. OHCA were geocoded into following subgroups: high density residential areas, low density residential areas, public and industrial sites, nature, sport and leisure facilities, transportation, and fast transit roads. OHCA with missing coverage were defined as OHCA with ≤ 3 volunteer responders or no AEDs within 1,800 meters.

Results We included 10,126 OHCA. In low density residential areas and nature, 5–10% of OHCA were not covered by AEDs, and 27–46% were not covered by volunteer responders. In contrast, 100% of OHCA in transportation sites, high density residential areas, and public and industrial sites were covered by AEDs, and 95–99% of OHCA were covered by volunteer responders.

Conclusion Most OHCA (95–100%) in transportation sites, high density residential areas, and public and industrial sites were covered by AEDs and volunteer responders. OHCA coverage varied according to geographical and demographic characteristics supporting continuous focus on tailored AED deployment and volunteer responder recruitment in low density residential areas.

REFERENCE

Conflict of interest Louise Kollander Jakobsen, Novo Nordisk Foundation, Research Grant.

Linn Andelius, TrygFonden, Research Grant.

Carolina Malta Hansen, Helsefonden, TrygFonden and Laerdal Foundation, Research Grants.

Mads Christian Tofte Gregers, TrygFonden, Resesarch Grant.

Nanna Bo Christensen, TrygFonden, Research Grant.

Julie Kjølbye, TrygFonden, Research Grant.

Christian Torp-Pedersen, Novo Nordisk Foundation, Bayer, Research Grants.

Fredrik Folke, Novo Nordisk Foundation, Laerdal Foundation, Research Grants.

Funding Primary investigator of this study, N. Christensen, was supported by research grants from Tryg-Fonden. TrygFonden did not have any influence on data management nor design of the study, and played no role in data collection, analysis, and interpretation of data performed.

Cardiac arrest

307 DISPATCHER-ASSISTED CARDIOPULMONARY RESUSCITATION IS AFFECTED BY A BYSTANDER’S EMOTIONAL STRESS STATE IN OUT-OF-HOSPITAL CARDIAC ARREST

1RT Tuffley*, 2F Folke, 3SB Lombreb, 4AErsbøll, 5FPott, 6GLinderoth. 1Copenhagen Emergency Medical Services, University of Copenhagen, Copenhagen, Denmark; 2Copenhagen Emergency Medical Services, University of Copenhagen, Copenhagen, Denmark; 3Department of Cardiology, Copenhagen University Hospital – Herlev and Gentofte, Herlev, Denmark; 4Copenhagen Emergency Medical Services, University of Copenhagen, Copenhagen, Denmark; 5National Institute of Public Health, Copenhagen, Denmark; 6Dept of Anesthesiology, Copenhagen University Hospital – Bispebjerg and Frederiksberg, Copenhagen, Denmark; 7Copenhagen Emergency Medical Services, University of Copenhagen, Copenhagen, Denmark; 8Dept of Anesthesiology, Copenhagen University Hospital – Bispebjerg and Frederiksberg, Copenhagen, Denmark

10.1136/bmjopen-2022-EMS.30

Background The study aimed to investigate whether a bystander’s emotional stress state affects DA-CPR in OHCA. The primary outcome was time from recognition of OHCA by the medical dispatcher until first chest compression delivered. Secondly, we investigated time from recognition of OHCA until initiation of CPR-instructions as well as quality of DA-CPR instructions according to the caller’s emotional stress state.

Method The study was a retrospective and observational study of OHCA emergency call recordings from the Capital Region of Denmark. Callers were evaluated by five raters using a simplified emotional content and cooperation score (ECCS).

Results 894 call were included of which 250 callers were registered as emotional stressed. We found a significantly longer time from recognition of OHCA until first chest compression delivered in the emotional stressed callers vs. the not emotional stressed callers (65 s vs. 38 s; P < 0.001). There was no significant difference in time from recognition of OHCA until initiation of CPR instructions (P = 0.12). Furthermore, there was a significant higher incidence of the medical dispatcher being assertive and encouraging when instructing, and of the medical dispatcher instructing on speed and depth of chest compressions in calls with an emotional stressed caller (P = 0.006, P < 0.001 and P < 0.001).

Conclusion The emotional stressed callers had a significantly longer time from recognition of OHCA by the medical dispatcher until first chest compression was delivered. In addition, the quality of DA-CPR instructions given was significantly higher in the emotional stressed group.

Conflict of interest None.

Funding None.