

00050 Bystander CPR in Out-of-hospital Cardiac Arrest in Singapore: Age and Other Predictive Factors

Jasmine Lim¹, Nurun Nisa Amatullah de Souza², Win Wah², Nur Shahidah², Susan Yap², Pek Pin Pin², Ng Yih Yng³, Benjamin Leong⁴, Gan Han Nee⁵, Desmond Mao⁶, Michael Chia⁷, Cheah Si Oon⁸, Tham Lai Peng⁹, Marcus Ong²

¹Duke-NUS Medical School, ²Singapore General Hospital, ³Singapore Civil Defence Force, ⁴National University Hospital, ⁵Changi General Hospital, ⁶Khoo Teck Puat Hospital, ⁷Tan Tock Seng Hospital, ⁸Ng Teng Fong General Hospital, ⁹KK Women's & Children's Hospital

Aims: Multiple studies affirm that Bystander CPR (BCPR) improves outcomes in Out-of-hospital Cardiac Arrest (OHCA). This study investigates age and other factors in affecting BCPR rates in Singapore.

Methodology: Data was extracted from the national cardiac arrest registry. OHCA cases in Singapore conveyed via emergency medical services from April 2010–December 2015 were included. Zipcodes of arrest location, census data from 2010-2015 and planning areas were used for geospatial analysis. Multivariate logistic regression was performed to investigate the association between patient demographics and prehospital data with BCPR.

Result: 8955 cases were split into 3 groups: Pediatric (Age 0-10years; n=107), Young (Age 11-65years; n=3979), Old (Age >65years; n=4869). Compared to the Old, Pediatric and Young patients had higher rates of BCPR (OR 3.997, 95%CI 2.567-6.224; OR 1.133, 95%CI 1.027-1.249). Non-traumatic arrest (OR 2.550, 95%CI 1.743-3.731) and Witnessed arrest (OR 1.267, 95%CI 1.157–1.387), positively associated with BCPR, while arrest in residential location (OR 0.655, 95%CI 0.441-0.973) negatively associated with BCPR. Of the OHCA in residential locations, patients in neighbourhoods with younger population were more likely to receive BCPR (OR 1.242, 95%CI 1.061-1.453) compared to older neighbourhoods.

There was no association with gender and major race groups, and univariate analysis showed no difference in BCPR rates between family bystanders and other layperson bystanders.

Conclusion: Older patients, residential arrests and older neighbourhoods were associated with lower rates of BCPR. Public education and training programs can be targeted to these populations to improve BCPR rates.