Methods: The~~is~~ population of the current~~was a~~ cross-sectional study included ~~of~~ all the OHCA patients~~cases across EMS of Hamadan province. The research population comprised all patients~~ who ~~had~~ underwent~~gone~~ Cardiopulmonary Resuscitation (CPR) in EMS of Hamadan province~~by EMS over a year (from~~ during 2016~~ to~~ 2017~~)~~. All the relevant data were retrieved from three sources, according to Utstein~~'~~s style. In addition, ~~U~~univariate and multivariate logistic regressions were employed~~used~~ to identify predictive factors of the success rate of ROSC and SHD using the SPSS software, version 20.

Results: Among~~Of~~ the 3214 eligible collected data ~~eligible~~, most OHCA patients were female~~s~~ (59.7%) with the ~~a~~ mean age of 58 years. Further, ~~T~~the majority of OHCAs (77.8%) occurred at home ~~(77.8%)~~ during 8pm-8am (65.1%)~~.~~ and about 26.3% of OHCAs were~~was~~ witnessed with only 5.1% bystander-initiated CPR. Furthermore, ~~T~~the median ambulance response time and CPR duration were 6.0 and 20 minutes, respectively. Overall, the ~~success rate of~~ ROSC and SHD success rate was 8.3~~%~~ and 4.1%, respectively. ~~After adjusting for Utstein variables, including patients' age, gender, cardiac disease history, time of arrest, CPR duration, response time, witnessed, bystander CPR and ETI placement,~~ The bystander CPR was found to be the most effective predicting factor for the success rate of ROSC (AOR=3.26, P<0.001) and SHD (AOR=3.04, P<0.001) after adjusting for the Utstein variables including the patients' age, gender, cardiac disease history, arrest time, CPR duration, response time, witnessed, bystander CPR, and endotracheal intubation placement.

Conclusion: In general, ~~T~~the success rate of CPR and SHD in the EMS of Hamadan province was~~is~~ highly~~very~~ low. Accordingly, the two above-mentioned outcomes can be expected to enhance ~~B~~by improving the important predictable factors~~, can be expected to improve two mentioned outcomes~~.

The current~~is was a~~ multicenter cross-sectional study~~. The study setting~~ was conducted in the emergency medical service~~EMS~~ center of Hamadan province (located in~~on~~ the west of Iran)~~,~~ which included ~~comprises~~ 20 urban ~~bases~~ and 30 road bases with the ~~and (serves~~ing a population of about two million people~~)~~. In this setting, all of the steps of cardiopulmonary resuscitation (CPR) were~~are~~ performed based on the American Heart Association ~~(AHA)~~ Guidelines for CPR (2015), which ~~and it~~ required~~s~~ any deployed technician ~~who deployed~~ in OHCA~~ ~~-related missions to provide basic~~BLS~~ and advanced life support~~ALS~~ care according to the guidelines.

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The present research was approved by Ethics Committee of ~~the~~ Hamadan University of Medical Sciences ~~approved this research Science~~ (No: IR.UMSHA.REC.1396.808).

Table 2 represents the detailed results related to~~of~~ the univariate and multivariate logistic regression of ROSC and SHD ~~are shown in Table 2~~. Based on u~~U~~nadjusted regression, ~~demonstratesshowed that~~ bystander CPR and initial shockable rhythm are the most important factors influencing ~~on~~ ROSC and SHD ~~were bystander CPR and initiate shockable rhythm~~, respectively. It is worth noting that ~~Notably,~~ bystander CPR is still considered as one of the most effective predicting factors for ROSC (AOR:3.26, P<0.001) and SHD (AOR:3.04, P<0.001) in OHCA patients~~Notably,~~ after adjusting for nine Utstein variables~~,~~ including the patients' age, gender, cardiac disease history, the time of arrest, CPR duration, response time, witnessed, bystander CPR, and endotracheal intubation (ETI) placement~~, among these covariates, bystander CPR was still one of the most effective predicting factors for ROSC (AOR: 3.26, P<0.001) and SHD (AOR: 3.04, P<0.001) in OHCA patients~~. Furthermore, ~~A~~a receiver operating characteristic ~~(ROC)~~ curve (with SD and CI 95%) for adjusting the final model is illustrated~~for adjusting the final model showed~~ in ~~f~~Figures 1 and 2.

Discussion~~:~~

The current~~We conducted this~~ retrospective analysis of registry data~~,~~ was performed including 3214 Out of Hospital Cardiac Arrest (OHCA) patients with attempted cardiopulmonary resuscitation (CPR) by EMTs in the prehospital setting where~~that~~ the outcome of Return of Spontaneous Circulation (ROSC) and Survival to Hospital Discharge (SHD) has not previously been reported. Based on the results of~~In~~ the present~~this~~ study, the~~we found that~~ age, ambulance response time, CPR duration, and cardiac disease history were negatively associated with the outcomes of ROSC and SHD~~,~~ while~~whereas~~ bystander witnessed, bystander CPR, ETI placement, and initial shockable rhythm were positively related to~~associated with~~ both of the~~two~~ above-mentioned outcomes (~~t~~Tables 2~~,~~ and 3). Additionally~~In our study~~, ~~among the patients who underwent CPR by EMTs,~~ the overall success rate of ROSC and SHD~~, from 1 April 2016 and 31 February 2017,~~ was~~ere~~ 8.3% and 4.1%, respectively, among the patients who underwent CPR by EMTs during (April) 2016-(February) 2017. The~~is~~ rate ~~compared to other studies in this area~~ is low compared to that of the other studies in this area. Based on the reports, the ~~R~~results of

OHCA registries regarding the ~~have reported~~ SHD rate ~~in the United States, and Europe~~ differeds~~s~~ from 7.5~~%~~ to 10.8% in the United States and Europe [13, 14]. ConverselyAlso~~,~~ this rate ~~in the PAROS registry has~~was found to be ~~observed of~~ only 5.4% of OHCA patients in the Pan-Asian Resuscitation Outcomes Study registry [15]~~.~~ andHowever~~,~~ a meta-analysis achieved a pooled SHD rate of 7.6% [10].

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