Self-perceived and true knowledge of cardiopulmonary resuscitation among the general public of the Crimea

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Background and Purpose of the Study: Little is known about the knowledge of cardiopulmonary resuscitation (CPR) among lay public in the post-Soviet area. As a case study, this survey was aimed *to determine self-appraised and true knowledge of basic CPR in the community of the Crimea*.

Materials and methods: In November 2017 - January 2018, the questionnaire was administered personally to the representative sample (n=384) of adult lay population of the Crimean peninsula, located on the northern coast of the Black Sea. General CPR knowledge was first self-rated by respondents on a 5-point scale (from 1 – no knowledge to 5 – very good knowledge). Further, two open-ended questions were asked to assess the participants' knowledge of CPR in terms of hand placement and rate for chest compressions. Data analysis comprised descriptive statistics and univariate analysis (chi-square test or Fisher's exact test).

Figure 1. Distribution of respondents by self-rated CPR knowledge.

Figure 2. Distribution of correct answering as of the proper site and rate of chest compressions.

Table. Respondents' characteristics associated with CPR knowledge.

Characteristics	Total, n (%)	Correct hand position, n (%)	Pearson's Chi-square/ Likelihood ratio/ Fisher's exact test	P-value	Phi/ Cramér's V	Correct compression rate, n (%)	Pearson's Chi-square/ Likelihood ratio/ Fisher's exact test	P-value	Phi/ Cramér's V
Previous CPR training			22.364	<0.001	0.241		—	0.002	0.155
Yes	204 (53.1)	116 (56.9)				13 (6.4)			
No	180 (46.9)	59 (32.8)				1 (0.6)			
Self-perceived CPR knowledge			22.796	<0.001	0.244		23.690	<0.001	0.331
Absent	68 (17.7)	16 (23.5)				0 (0.0)			
Poor	175 (45.6)	82 (46.9)				3 (1.7)			
Moderate	114 (29.7)	62 (54.4)				5 (4.4)			
Good	21 (5.5)	14 (66.7)				6 (28.6)			
Very good	6 (1.6)	1 (16.7)				0 (0.0)			
Medical education			4.809	0.028	-0.112		—	0.039	-0.131
Yes	22 (5.7)	15 (68.2)				3 (13.6)			
No	362 (94.3)	160 (44.2)				11 (3.0)			

Results: About 63% participants self-evaluated their CPR knowledge as “absent” or “poor” (Fig. 1). Strong relationship between the self-perceived knowledge level and previous CPR training was revealed: those who rated their knowledge as “moderate” and above were mostly previously trained ($p<0.001$; Cramér's $V=0.496$). With that, there was no association of self-perceived CPR knowledge level with the number of attended CPR courses, the time of last training or willingness to attend CPR training ($p>0.05$).

Distribution of correct answers regarding hand placement and rate for chest compressions among all respondents and healthcare professionals is shown on Fig. 2. Based on univariate analysis (Table), correct answering was associated with previous CPR training, higher level of self-perceived CPR knowledge (excepting “very good” knowledge group, where ≤ 1 of 6 answered correctly) and medical education, but independent from the number of attended courses or timing of last training ($p>0.05$).

Conclusions: Whereas the previously trained respondents showed better rates of correct answering and higher self-confidence, knowledge of CPR is generally poor among the Crimean general public. Healthcare professionals to a great extent showed lack of CPR knowledge alongside with lay people. Effective large-scale continued community training program with regular refresher courses is urgently needed to enhance the CPR knowledge and improve bystander CPR rates in the Crimea.