



Correspondence

European Journal of Emergency Medicine 2012, 00:000–000

A 1-h simulation-based course on basic life support durably enhances confidence among medical students

Yonathan Freund^{c,c}, Anne-Laure Philippon^a, Jerome Bokobza^a, Serge Carreira^{b,c}, Bruno Riou^{a,b} and Alexandre Duguet^{b,c}, Departments of ^aEmergency, ^bPneumology and Intensive Care, Groupe hospitalier Pitie-Salpetriere and ^cUniversité Pierre et Marie Curie Paris 6 (Paris Sorbonne University), Paris France

Correspondence to Yonathan Freund, MD, Department of Emergency, Pitie-Salpetriere hospital, 47-83 boulevard de l'hôpital, 75013 Paris, France
Tel: +33 663 549 017; fax: +33 142 177 264;
e-mail: yonathanfreund@gmail.com

Received 27 August 2012 Accepted 1 November 2012

We believe that medical students, along with junior doctors, nurses and paramedics, should be willing and able to perform basic life support (BLS) of high quality.

However, numerous studies have shown that there is a lack of knowledge and skills among undergraduates and junior doctors [1,2]. Before implementing new simulation-based workshops on BLS in our faculty, we conducted a previously published survey of undergraduate students to evaluate their knowledge and confidence in terms of BLS [3]. It was found that less than a third (30%) of medical students felt sufficiently prepared to conduct BLS. We found an association between real-life experience and confidence, as students who have attended a real cardiac arrest situation during their hospital duty felt more confident than those who had not (59 vs. 10%; $P < 0.001$).

A year later, all third-year and fourth-year students had been trained in a new simulation-based BLS course: each session included a group of 12 students who attended a 1-h session of simulated cardiac arrest on a Resusci-Anne Manikin (Laerdal Medical, Stavanger, Norway) with a computerized feedback device. Debriefing and feedback focused on the quality of the call for an ambulance,

the rate and depth of chest compression, and the use of an automated external defibrillator.

Our hypothesis was that this workshop could improve confidence among students. We conducted a similar electronic survey to assess the benefit of this teaching: we recorded students' self-reported confidence to conduct BLS as described previously. Of 720 students, 310 (43%) responded, a rate similar to that in our previous study. Three students were excluded because of incomplete questionnaires, as were 27 students who did not attend the course. The rate of third-year and fourth-year students who felt confident to conduct BLS increased to 78% (Table 1), compared with 22% ($P < 0.001$) in the previous year for students in the same years of study (i.e. third and fourth).

Confidence is vital as anxiety can be associated with a reduced willingness to perform cardiopulmonary resuscitation [4]. Thus, trained individuals are more likely to perform bystander cardiopulmonary resuscitation [5]. A sole 1-h simulation-based session seems to have enhanced students' confidence considerably. Of note, this rate did not vary according to whether the course took place 3, 6, 9 or 12 months before the survey (respectively 77, 80, 76 and 83%; $P = 0.65$). Our results suggest that one simulation-based course could have the same positive effect on the confidence of medical students as real-life witnessing of cardiac arrests. Such high levels of confidence (78%) as shown by the students after training were only observed in the first survey among those students who had attended more than five cardiac arrests in medical settings (76%) [3]. The effects of this teaching seem substantial, even 1 year later, and these results advocate for a generalization of this simple standardized 1-h course. This simple course with a basic feedback device can easily and efficiently reach a wider audience in nontraditional first responders such as police, nonmedical students and other volunteers.

Table 1 Self reported confidence in medical students

	Before implementing BLS course (2011)	After implementing BLS course (2012)	Time from the course (months)			
			3	6	9	12
N	289	274	80	81	66	47
Confidence	64 (22%)	214 (78%) ^a	62 (77%)	65 (80%)	50 (76%)	40 (85%)

BLS, basic life support.

^a $P < 0.001$ vs. before implementing the BLS course.



Acknowledgements

Conflicts of interest

None declared.

References

- 1 Price CS, Bell SF, Janes SE, Ardagh M. Cardio-pulmonary resuscitation training, knowledge and attitudes of newly-qualified doctors in New Zealand in 2003. *Resuscitation* 2006; **68**:295–299.
- 2 Nicol P, Carr S, Cleary G, Celenza A. Retention into internship of resuscitation skills learned in a medical student resuscitation program incorporating an Immediate Life Support course. *Resuscitation* 2011; **82**:45–50.
- 3 Freund Y, Duchateau FX, Baker EC, Goulet H, Carreira S, Schmidt M, *et al.* Self-perception of knowledge and confidence in performing basic life support among medical students. *Eur J Emerg Med* 2012 [Epub ahead of print].
- 4 Hamasu S, Morimoto T, Kuramoto N, Horiguchi M, Iwami T, Nishiyama C, *et al.* Effects of BLS training on factors associated with attitude toward CPR in college students. *Resuscitation* 2009; **80**:359–364.
- 5 Tanigawa K, Iwami T, Nishiyama C, Nonogi H, Kawamura T. Are trained individuals more likely to perform bystander CPR? An observational study. *Resuscitation* 2011; **82**:523–528.