


Research letter

Feasibility of implementing a first aid training programme (COOPERA-UGR) for medical students who plan to volunteer: a pilot study

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Pre-travel advice for medical students studying international electives in low-income countries is essential.¹ However, many medical students are not well trained in first aid and emergencies in new scenarios,^{2,3} such as those found in resource-poor countries and volunteering environments. This may be due to the fact that there are few educational curricula that carry out such programmes and publish their results.⁴ This concern is echoed by the Association for Medical Education in Europe, which recognizes that prior preparation of students is necessary, albeit in relation to clinical electives.⁵ In addition, Schimpf *et al.*³ consider that ‘it is incumbent on the sending institution to ensure the trainee is prepared mentally and physically for the challenges faced when learning in a new environment’.

For the above reasons, the aim of this study was to establish a health training programme (the COOPERA-UGR project) for medical students who volunteer and to assess its viability by means of cross-sectional surveys. Questions were mostly measured quantitatively, but free text open-ended questions were also included to collect all relevant information.

The COOPERA-UGR project followed the ‘blended learning’ methodology, which combines an online theoretical session with a face-to-face practical session. In the former, lessons were given on emergency actions in common volunteer practice; physical, psychological and emotional first aid; cardiopulmonary resuscitation (CPR) and individual protection. In the face-to-face modality, the theoretical concepts were put into practice

in accordance with the principles of adapting teaching to the context of the COVID-19 pandemic, which were published by the University of Granada (UGR). This health training programme was conducted by physicians with competencies in life support and first aid, accredited by the European Resuscitation Council, and with experience in international missions. The course was specifically adapted to medical students embarking on volunteer medical travel.

Students from the Faculty of Medicine of the UGR who had volunteered or would like to volunteer were included. Socio-demographic data, type of volunteering and whether or not they had been trained in first aid were collected by means of a questionnaire performed in December 2020. In March 2021, the established training programme was delivered, together with the evaluation of the programme and a survey about the students’ perception of the programme. The online theoretical session lasted for 2 h. The importance of knowing first aid in a cooperative environment was presented and each of the manoeuvres were explained in detail in this lesson. The face-to-face practical session lasted 3.5 h and students were trained in the skills previously introduced online by using our centre’s simulation room. The principles of the Declaration of Helsinki were followed. A fully anonymized database was used with informed consent from all participants. The Research Ethics Committee of the UGR approved the study (registration number 1764/CEIH/2020).

Table 1. (A) Socio-demographic and volunteering activity variables collected in the forms given to students ($n=31$); (B) evaluation of the competences imparted in the training programme; in the second evaluation, 30 students attended (1 missing)

(A)		
Socio-demographic variables	Number of participants ($N=31$)	Frequency
Age		
18–25 years	28	90.3%
25–35 years	3	9.7%
Academic year		
1st	3	9.7%
2nd	1	3.2%
3rd	5	16.1%
4th	5	16.1%
5th	5	16.1%
6th	12	38.7%
Volunteering		
Previous experience		
Yes	22	71.0%
No, but interested in doing so	9	29.0%
Place		
National	21	67.7%
International	3	9.7%
Both	7	22.6%
Type		
Socio-educational	17	54.8%
Healthcare	5	16.1%
Environmental	1	3.2%
Other	8	25.8%
Preparatory training for volunteering		
Yes	11	35.5%
No	20	64.5%
Previous first aid training		
Yes	1	3.2%
No	30	96.8%
Training covered by the degree in medicine		
Yes	2	6.5%
Partially	19	61.3%
No	10	32.2%
(B)		
Assessed competence	Correct acquisition	
	Number of participants ($N=30$)	Frequency
Protocol to follow in an emergency	29	96.7%
CCC protocol	29	96.7%
CPR characteristics	30	100.0%
CPR practice	30	100.0%
How to deal with a wound	26	86.7%
Direct compression on wound	30	100.0%
How to deal with a fracture	24	80.0%
Basic first aid kit maintenance	30	100.0%
How to put on PPE	21	70.0%
What psychological first aid to offer	28	93.3%
Volunteer self-care	24	80.0%

CCC, 'check', 'call' and 'care'; CPR, cardiopulmonary resuscitation; PPE, personal protective equipment.

Only 31 students out of the nearly 1600 students enrolled at the Faculty of Medicine of the UGR were eligible for the study. As shown in Table 1(A), there was representation from all academic years and only 29.0% ($n=9$) of the participants had not volunteered so far but were interested in volunteering in the near future. The majority (67.7%, $n=21$) carried out their

volunteering within Spain and the volunteering was mainly of a socio-educational nature (54.8%, $n=17$). Regarding training prior to the start of volunteering, only 35.5% ($n=11$) of the participants had received any kind of training. However, only one participant (3.2%) had received first aid training in a previous programme. The students surveyed considered that first aid

training was either partially covered (61.3%, $n=19$) or not covered (32.2%, $n=10$) by the medical degree curriculum.

The evaluation of the skills taught (Table 1(B)) showed a high degree of acquisition of skills, such as correct performance of CPR, maintenance of a first aid kit, treatment of a wound, check, call and care (CCC) protocol, acting in emergencies and basic concepts of psychological first aid.

The satisfaction survey showed that 93.3% ($n=28$) of the participants felt that the basic first aid competencies necessary for volunteering had been covered. Of the respondents, 43.3% ($n=13$) would add practices for burns, treatment of anaphylactic shock, dealing with natural disasters, epileptic seizures, practical sutures and care of a drowning person. The majority of students (86.7%, $n=26$) considered that all the skills acquired in the training were essential for undertaking volunteering actions.

The educational approach using blended learning methodology facilitated the viability of the project. The online theoretical lessons allowed the training of each student based on their personal availability and respected the preventive measures of the COVID-19 pandemic. Furthermore, this educational modality has been shown to reduce the forgetting curve and to yield better educational results than the traditional modality,^{6,7} where limitations have been observed in terms of retention of health information prior to embarking on a trip.⁸ In addition, the programme enjoyed the support of the Faculty of Medicine of the UGR, which was one of the limitations proposed by some authors.^{3,4} However, these training programmes will require the collaboration of different non-governmental organizations to train development workers in cultural and local matters in host countries, which has been shown to be decisive for the correct integration of the development worker.⁹ In addition, the COOPERA-UGR project meets the current needs due to the COVID-19 pandemic, such as the correct use of personal protective equipment, as proposed by McMaster *et al.*¹⁰

The main limitation was convenience bias. The study participants were medical students who were knowledgeable about medical science and sufficiently motivated to volunteer. In addition, there may have been an institutional bias, although it can be mitigated in the main study yet to be conducted. The results of this pilot study will allow the development of a future multi-centre study among the various health faculties in Spain, which will include a larger sample size and will train students in first aid in volunteering scenarios.

In conclusion, the data provided by the present study support the viability of the project, and the current experience has made it possible to explore the field and integrate the students' proposals for improvement.

Authors' contributions

F.M.P.-R., M.M.-A.-G., M.R.-I. and A.C.-C. designed the study and wrote the first draft of the manuscript. F.M.P.-R., M.M.-A.-

G., P.R.-G., S.G.-C. and P.G.-M. carried out the research and critical analysis of the results. A.C.-C. and M.R.-I. mentored the work. All study authors read, made important intellectual contributions and approved the final version of the manuscript.

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