An evaluation of radiographers knowledge on adult basic life support guidelines

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Aims and objectives

When there is indication for cardiopulmonary resuscitation (CPR) any risk of complication is secondary, since the consequences that can result from CPR are no more serious than biological death, which is inevitable without the attempt of resuscitation. Thus, the first and most important rule in resuscitation is to recognize the seriousness of the problem by acting promptly on the spot without seeking help or special equipment (1).

The first action is to ensure that all safety conditions are met regarding the rescuer, scenario, victim and third parties that may be involved. Next, should be evaluated the victim's state of consciousness where the victim should maintain the same position (if there is no increased risk), try to understand what happened and if the victim does not respond should initiating the first request for help in the Basic Life Support (BLS) algorithm and then making the airway permeable (2).

The loss of time in initiating effective BLS may result in poor patient outcomes and this is more likely to survive if the CPR is started by well trained staff within a 2-minute interval.

So, in a radiology department, it is vital that radiographers immediately recognise the symptoms of sudden cardiopulmonary arrest and start the chain of survival promptly through the CPR (3). Although it is a very important issue, there is still poor attention in the scope of training programs for radiographers.

In order to assess this serious issue, the aim of this study was to evaluate the knowledge of radiographers regarding adult basic life support guidelines.
Methods and materials

A cross-sectional, non-experimental research design was adopted, involving an accidental sample of 39 qualified radiographers from two different public hospitals (Hospital A and Hospital B).

Data were collected using a self-applied paper-based questionnaire to evaluate the knowledge of radiographers in relation to adult basic life support guidelines. This questionnaire was an adaptation of the original questionnaire applied by Neves et al (2010) in the study "Physycal therapists knowledge on basic life support" and contains 2 main parts: 1) demographic details, and 2) multiple choise questions regarding recent training and knowledge of adult BLS (4).

Quantitative data was statistically analysed through descriptive statistics, Mann-Whitney and Spearman tests.
Results

From the 39 radiographers who participated in this study, 19 of them work in the Hospital A (48.7%) and 20 in the Hospital B (51.3%).

Radiographers were asked about how many courses or training courses of BLS had participated as professionals and it was observed that 6 of them never attended any course/training related to BLS (Fig. 1 on page 6). 20 radiographers do not have the BLS course validated. So, only 13 radiographers are qualified to perform BLS (Fig. 2 on page 6).

Concerning the questions related to Basic Life Support (questions 1 to 8), it was observed that none of the radiographers correctly answered to all this questions. 6 radiographers correctly answered to a total of six questions, 7 answered correctly to five questions and 15 answered correctly to four questions. So, only 38.5% (13 radiographers) answered correctly more than four questions (Table 1 on page 7).

Observing each question of the questionnaire, it can be observed that only 3 of the 8 SBL-related questions were incorrectly answered by the majority of the radiographers. All the other questions were correctly answered by the majority of them as the following: Q1 = 76.9%, Q3 = 56.5%, Q4 = 56.4%, Q6 = 97.4% and Q7 = 64.1%.

So, 56.5% of the radiographers know how to check for pulse timing and 56.4% know the most appropriate rate of CPR for an adult (chest compressions and breaths). 97.4% correctly indicated the maneuver that can be used to open the airway.

Through the Mann-Whitney test, no significant statistically differences were observed between Hospital A and B regarding all the questions under study. Through the Spearman rho correlation test, it was verified that the professional experience have a very high positive correlation with the fact that radiographers has attended some discipline/subjet related to BLS (rho = 0.473, p = 0.002) and low positive correlation with the question about the most appropriate rate of CPR for an adult (rho = 0.419, p = 0.008) and the question about know how to check for pulse timing (rho = 0.473, p = 0.002).

At the end of the questionnaire, radiographers were asked if they felt confident to perform BLS if necessary, and 22 of them (56.4%) responded that they felt confident. When correlating this question with the question "recommended sequence in case of PCR", only 5 of these 22 (22.7%) correctly answered to this question.
The obtained results in this study are in line with those obtained by Alam et al (2014) in which Radiographers and Radiologists in Pakistan do not have sufficient knowledge about BLS and are unable to act in the presence of a cardiorespiratory arrest, and suggests practical and refresher courses, which should be compulsory in the workplace, in order to obtain the desired level of patient safety (3).
Fig. 1: Bar chart about if radiographers had or not any BLS course as a professional

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Fig. 2: Bar chart representing the date (year) of the last BLS course conducted by the radiographers

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<table>
<thead>
<tr>
<th>Nº of questions correctly answered</th>
<th>FA</th>
<th>FR</th>
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<tbody>
<tr>
<td>5</td>
<td>9</td>
<td>23,1</td>
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<td>2,6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>39</td>
<td>100,0</td>
</tr>
</tbody>
</table>

**Table 1:** Number of questions correctly answered by radiographers regarding BLS (FA - Absolute Frequency; FR - Relative frequency).

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Conclusion

This research highlights a critical problem where the radiographers who participated in this study have a lack of knowledge to properly apply the BLS guidelines. Therefore, continuing professional education and hands-on training are highly recommended for radiographers of both institutions (Hospital A and B) to enhance their current level of knowledge of adult BLS in order to make high quality resuscitation available to all patients in case of cardiopulmonary arrest and acute anaphylaxis reaction.
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Fig. 3

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References


