Abstract

Background & Objective: Cardiopulmonary resuscitation is a key skill of physicians, and it is a clinical skill taught early on in the undergraduate curriculum. There is however extensive evidence showing that medical students and junior doctors alike struggle with their confidence when providing such interventions. Given this, there have been moderate curriculum developments over time, but there is little in the way of data to track students self-perceived confidence to assess, in one respect, the effectiveness of these interventions. Given this, the primary objective was to assess whether medical student confidence has improved since previous studies given a lack of existing research. A secondary objective was to assess whether exposure to cardiac arrests correlated with trends in confidence.

Methods: An online survey was sent to 134 final year medical students at a UK medical school. Questions were focused around exposure to cardiac arrests, self-reported confidence and whether students felt there was sufficient inclusion of resuscitation training in the undergraduate curriculum.

Results: 101 responses were collected. Results showed only 12% (n=12) had seen a cardiac arrest in their medical training, and that 18% felt “not at all confident” to initially manage a cardiac arrest alone. 2% (n=2) however felt “extremely confident”. The mean confidence score was 2.38 using a Likert Scale ranging from 1 to 5 representing “not at all confident” to “extremely confident” respectively. 100% (n=101) of students felt the undergraduate curricula required more incorporation of resuscitation training.

Conclusion: Medical student confidence has not risen markedly since initial studies looking at this topic despite advances in training. There are however indicators that curricular development has become more standardised resulting in less disparity between students self-reported confidence levels. There still remains however a lack of firm research looking at underlying reasons for perceived low confidence, but a reduction in exposure is one such possible reason. Further research is required to identify and confirm such reasons.

Keywords: Resuscitation; CPR; Undergraduate; Medical student; Cardiac arrest; Confidence

Table 1: Questions asked in the survey and their associated response measures.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>“In hospital, how confident do you feel in being the first person to initially manage a cardiac arrest”</td>
<td>1-5 Point Likert Scale</td>
</tr>
<tr>
<td>“Have you ever seen a cardiac arrest during your undergraduate training?”</td>
<td>Yes / No</td>
</tr>
<tr>
<td>“Do you feel undergraduate medical curricula requires greater exposure to cardiac arrests &amp; medical emergencies”</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>
Table 2: Responses to the question “In hospital, how confident do you feel in being the first person to initially manage a cardiac arrest”.

<table>
<thead>
<tr>
<th>Score</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>101</td>
</tr>
</tbody>
</table>

Discussion

This study shows that students still lack the confidence to manage a cardiac arrest initially by themselves. Whilst this is perhaps unsurprising to some degree given the severity and time-critical nature of the situation, it is disappointing to see that confidence has done little to improve over the years with changes to training. This said however, it should be noted that when compared to similar studies undertaken, the data from this survey shows a clustering of responses around the scores of 2-3 (70% of students, n=70). When compared to Graham et al., the most directly comparable previous study (1994), the proportion of students self-assessing as “confident” was less in this study (2% vs. 38%), however, the proportion saying they were “not at all confident” was less here (18% vs. 58%) [3]. This can perhaps provide some reassurance that despite students not feeling confident, current training is becoming more standardised. It should be noted however that this study was looking at final year medical students as supposed to third years, which provides multiple confounding variables which reduces the ability to make direct comparisons or firm conclusions. The reality of students ranking themselves as “extremely confident” in great number also has to be questioned.

This study still supports however an underlying hypothesis that lack of exposure is one of many reasons underlying this lack of confidence, and indeed, if anything this survey strengthens this. Again, Graham et al. report 43% of students questioned had seen a cardiac arrest in the preceding year, whilst this survey shows only 12% had ever seen a cardiac arrest in the preceding 5 years [3]. This fits with current trends in healthcare to encourage both patients and clinicians to participate in do not resuscitate discussions and decreasing numbers of in-hospital cardiac arrests [10,11]. In light of this reduced exposure, it is perhaps unsurprising therefore that confidence has fallen overall, especially in view of the growing evidence base reinforcing the view that there is no substitute for real world “hands-on” learning [12]. It is important to note as well that students still put a strong emphasis on resuscitation teaching as evidenced by the fact 100% of students feel more is warranted.

It is undeniable that undergraduate curricula and resuscitation has come on since the first studies assessing confidence, but it is clear from this survey that there is still a lot scope for improvement and that further studies are warranted to assess if there are any other issues underlying this sub-optimal rise in confidence.

Limitations

This survey has several limitations most of which are attributable to the fact the data was collected under a larger project. As a result, the data is not directly comparable to previous studies due to differing years of student, differing question design with a different focus. The data also uses self-reported confidence which is known to correlate poorly with competence [13]. This being said however, the data does add to existing literature and does allow some indirect comparisons to be made about medical student confidence over time which allows , to some extent, assessment of curricula development and changing themes. This survey was also not aimed at assessing individual competence, or indeed changing competencies over time.

Conclusion

Medical student confidence has not risen markedly since initial studies looking at this topic despite advances in training. There are however indicators that curricular development has become more standardised resulting in less disparity between students self-reported confidence levels. There still remains however a lack of firm research looking at underlying reasons for perceived low confidence, but a reduction in exposure is one such possible reason. Further research is required to identify and confirm such reasons.

Acknowledgments

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References

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