Reporting quality of research on medical education performance among those abstracts that representing findings of narrative abstracts. Sampling methods were reported amongst 58.4% of abstracts.

Results: A stratified random sample of abstracts (n=188) were included in this study. The majority of abstracts were submitted to the 5th National E-Learning Conference in Mashad (2010) and Tabriz (2011), Iran.

Methods: A stratified random sample of abstracts (n=188) representing quantitative and qualitative studies were selected among a total of 236 accepted submissions. Their quality was assessed independently by authors based on the criteria explained by Reed et al and also the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline.

Conclusions: Validated reporting quality of submitted abstracts may reflect the gaps we suffer to have a more robust national research performance. Reporting quality of medical education performance among those abstracts that representing findings of narrative abstracts. Sampling methods were reported amongst 58.4% of abstracts. A stratified random sample of abstracts (n=188) were included in this study. The majority of abstracts were submitted to the 5th National E-Learning Conference in Mashad (2010) and Tabriz (2011), Iran.
INTRODUCTION

Reporting quality of research on medical education has come under scrutiny in recent years in wake of evidence obtained from relevant studies (1-4). Main concern has been raised is the insufficiency of provided details for unbiased judgment of the readers to critically appraise the scientific literature. Abstracts are windows into their corresponding scientific processes and must be written in ways that attract interested readers’ attention to learn more about the study and its results. But poor reporting quality of published abstracts may distract readers from careful reading of research evidence or in a worst case may mislead scientists. Despite development and administration of standard research reporting guidelines (5-7) we are still witnessing suboptimal research reports in our academia (8, 9) internationally. Main objective of this study was to evaluate the extent and quality of the submitted abstracts to the 3rd and 4th National Conference on Electronic Learning in Medical Education which were held on 17-18 February 2010 in Mashad and 15-17 February 2011 in Tabriz, Iran. Our special focus was on the accuracy of reporting quality as well as the validity of conclusions.

METHODS

A stratified random sample of abstracts (n= 188) representing quantitative and review (narrative and systematic) studies (excluding qualitative studies) were selected among a total of 366 accepted submissions to the 3rd (N= 181) and 4th (N= 185) National Conference on E-learning in Medical Education in Iran. We assessed the quality of the selected abstracts based on the criteria explained by Reed et al (9) to determine the quality of experimental, quasi-experimental, and observational studies. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (6) were also considered to assess abstracts from systematic review studies. External validity criteria were checked for abstracts from primary studies based on the reported sampling method, sample size and response rate to dispose probability of sampling bias and hence generalisability of a study finding to the wider population. Internal validity criteria were also verified based on the provided numeric results of the studied outcome variables with their precision to endorse reliability of the study results. Explanation of the main aim of study, name of databases searched, study selection criteria, quality assessment procedures in the retrieved studies, providing summary results and also giving conclusion were also criteria to assess the abstracts from review studies. Authors independently examined the abstracts for all these quality criteria and any disagreement was resolved by discussion until final consensus was reached.

RESULTS

A total of 113 (60.1%) abstracts described findings from primary studies, 74 (39.4%) summarised findings of narrative reviews and only one abstract (0.5%) stated to show results of a systematic review. Among the abstracts from primary studies (113) those which met the studied quality criteria were indicated in Table 1.

<table>
<thead>
<tr>
<th>Assessed quality criteria</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aim of the study</td>
<td>104</td>
<td>92.0</td>
</tr>
<tr>
<td>Sampling method</td>
<td>66</td>
<td>58.4</td>
</tr>
<tr>
<td>Sample size</td>
<td>83</td>
<td>73.5</td>
</tr>
<tr>
<td>Statistical analysis method</td>
<td>89</td>
<td>78.8</td>
</tr>
<tr>
<td>Outcome variable</td>
<td>72</td>
<td>63.7</td>
</tr>
<tr>
<td>Participation rate</td>
<td>29</td>
<td>25.7</td>
</tr>
<tr>
<td>Numeric description of outcome variables</td>
<td>63</td>
<td>55.8</td>
</tr>
<tr>
<td>Precision of outcome variables</td>
<td>12</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Table 1. Abstracts from primary studies that met quality criteria among submissions to the 3rd and 4th National Conference on E-learning in Medical Education, Iran (n= 113)

Name of the statistical software to analyse data was given in the 47 abstracts (42.0%) from primary studies but in 5 abstracts (20.8%) it was given without explaining the statistical analysis method. Amongst abstracts representing findings of narrative reviews (n=74) in 11 cases (14.9%) main aim of the review was not mentioned as indicated in Table 2.

<table>
<thead>
<tr>
<th>Assessed quality criteria</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aim of the study</td>
<td>63</td>
<td>85.1</td>
</tr>
<tr>
<td>Name of databases searched</td>
<td>12</td>
<td>16.2</td>
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<td>Search strategy</td>
<td>24</td>
<td>34.4</td>
</tr>
<tr>
<td>Study selection criteria</td>
<td>4</td>
<td>5.4</td>
</tr>
<tr>
<td>Quality assessment of retrieved studies</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Summary results</td>
<td>59</td>
<td>79.7</td>
</tr>
<tr>
<td>Conclusion</td>
<td>67</td>
<td>90.5</td>
</tr>
</tbody>
</table>

Table 2. Abstracts of narrative reviews that met quality criteria among submissions to the 3rd and 4th National Conference on E-learning in Medical Education, Iran (n=74)

Among the abstracts from narrative reviews 12 abstract (17.9%) provided conclusion without explaining the study results. In the only one abstract which summarised findings of a systematic review name of databases searched, search strategy, studies selection criteria and their quality assessment procedures were not mentioned.

DISCUSSION

This study results revealed that 74.3% of abstracts from primary studies and 99.0% of abstracts from review studies lack all essential elements for informative reporting. Amongst the reviewed abstracts important information necessary to make judgment about their accuracy were absent frequently and this severely limits referees to critically appraise the submitted abstracts. Our study indicated varied reporting quality of submitted abstracts and the gaps we suffer to have a more robust national research performance in the field of medical education. About 40%
improve our national research productivity we recommend working on infrastructural prerequisites needed for prevention of research misconducts in this field. Although we have selected a representative sample of abstracts submitted to only two national conferences and hence the findings may not be assumed to extend beyond these conferences and to all performed research in this field and also other medical fields, but these findings may reflect pitfalls in our research methodology educational efforts and embrace national level challenges we face to ensure evidence based research outcome. Such a conclusion is inline with the constraints were reported for countries across the whole Asian continent (29).

Due to the impact findings of a good quality research on different aspects of medical teaching-learning processes may have on the attainment of graduates from academic institutions and therefore on the enhancement of health care quality (30), our national research performance in the field of medical education merit further investigation and highly recommended.

Authors would like to thank Iranian researchers who submitted their works to the 3rd and 4th National Conference on E.learning in Medical Education.

Conflict of interest: There are not any conflicts of interest regarding the submission and publication of the article and its potential implications. The authors agree to transfer the copyright of this article to the Future of Medical Education Journal and not to publish the manuscript elsewhere in any other language without the consent of the Journal.

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