Reviewer’s report

Title: Pharmacology and Therapeutics resource session attendance and academic performance of pre-clerkship medical students in problem-based learning curricula

Version: 0 Date: 06 May 2019

Reviewer: Francesca Quattri

Reviewer’s report:

This paper tries to investigate a) if there exists any correlation between session attendance and academic performance among pre-clerkship medical students in a PBL (problem-based learning) setting, in particular by focusing on students’ attendance of hybrid resource lectures. Furthermore, the investigation aims to understand b) what motivates (the trends) students' absenteeism in class and c) whether test performance is related to gender.

(Hybrid) resource lectures refer, in the text, to both non-compulsory and compulsory extensive group classroom sessions as well as other classroom activities specifically related to pharmacology and therapeutics during the pre-clerkship years (phase II; 3 years). The reviewer suggests to better specify/differentiate the compulsory / non-compulsory component of the activities and tutorials within the Methods and Results section.

The investigators correlated the students’ attendance to resource lectures with

- Test scores in pharmacology & therapeutics. As the authors stated, the "number of test items and weight for these two subjects in each end-unit exam (phase III, clerkship; 2 years) was proportional to the input [of the same subjects] in the curriculum", i.e., estimated around 15% of the total.

- Students' gender. Although significantly more female students attended the resource lectures than male ones, "no [other] significant gender-related differences were found concerning the mean score or top grades achieved." It also needs to be specified that the majority of participants (n=812 out of n=1,404) were female.

The cross-sectional study was carried out with n= 1,404 students over three years, following them from phase I (pre-medical) to phase II and III.

Results showed an overall consistent decrease of students' attendance to lectures over phase II and III (pre-clerkship and clerkship). The authors found "a significant but weakly positive correlation between class attendance and achievement in the pharmacology tests" (correlation coefficient value of r=0.280; p<0.0001).

Possible study limitations, besides the ones pointed out by the authors, include the time of the inception and conduct of the study (2013-14). The authors should at least clarify the delay in
submitting this research. Furthermore, considering the swift development of online medical tools and constant change in learning patterns among medical students, they shall be able to argue whether the four or five years since the end of this study may or may not have affected their results and, if so, in what way, and why readers might still be interested in reading them.

Moreover, authors tried to make sense of absenteeism in their medical institutions and among the studied population by suggesting possible motives. Their observations were based upon the obtained results. Nonetheless, the lack of qualitative investigation (e.g., interviews or surveys) made the discussion one-sided and somewhat speculative. It follows that parameters including motivation, learning style preferences and self-regulated learning behaviour in PBL curricula should be granted further attention, as also pointed out by the investigators.

Therefore, the reviewer suggests to delete objective b) from this research for the moment, as it does not appear to have been adequately/thoroughly investigated.

Finally, since the study seems to focus much on gender and alleged gender differences in the correlation between attendance and performance, further evaluation (both statistically and qualitatively) may also be needed to frame the topic fully. In fact, as the authors clearly state, the results collected so far do not offer a rational explanation for such a correlation.

Further notes: subject missing in line 28 page 5.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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