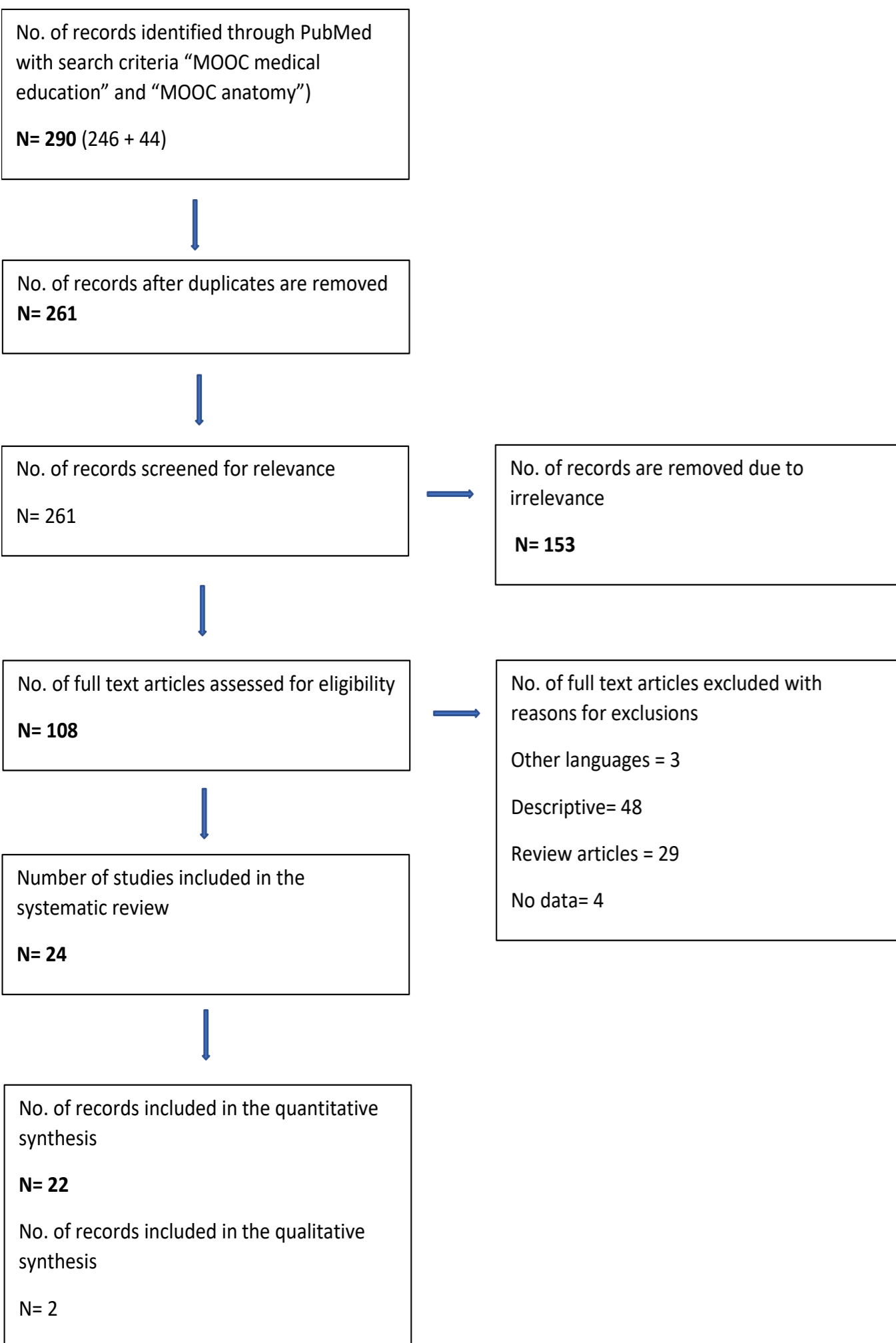


INTRODUCTION

MOOC (massive open online course) is a relatively new platform form for delivery of education materials.. There has been a wide interest in the use of MOOC, in-line with the rise of technology enhanced learning (TEL) which is slowly being incorporated into the medical curriculum. Hence, we aim to look at the effectiveness of MOOC on medical education based on the current literature, looking at the various factors including the pre and post test results, benefits and limitations. Hoping to shine some light how the MOOC can be a suitable addition to the medical curriculum

METHOD

The articles were searched using the terms MOOC, MOOC + medical education, MOOC+ anatomy in Cochrane and PubMed, up till 13/6/2019 with no base date. The articles were further narrowed down based on the following criteria. (1) Only those that have performed trials or interviews related to medical education. (2) the articles must be in English. (3) the articles must contain either qualitative or quantitative results from the use of MOOC in medical education.



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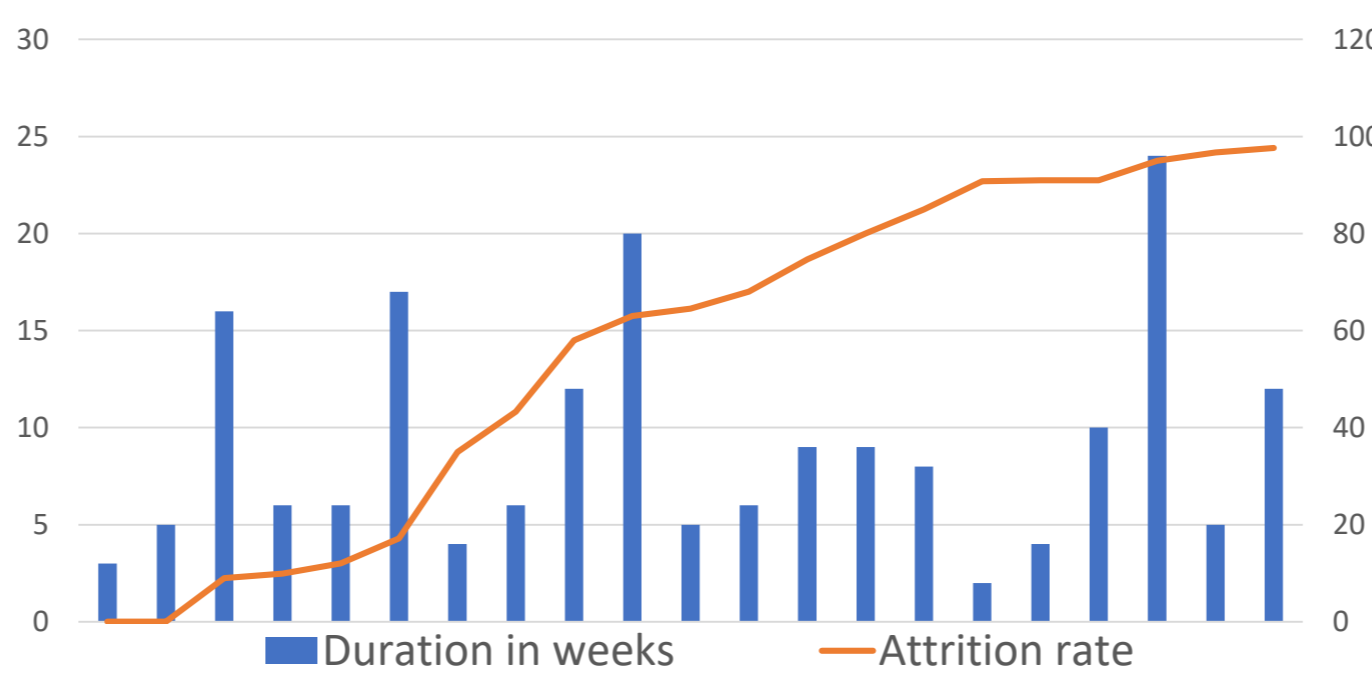
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RESULT

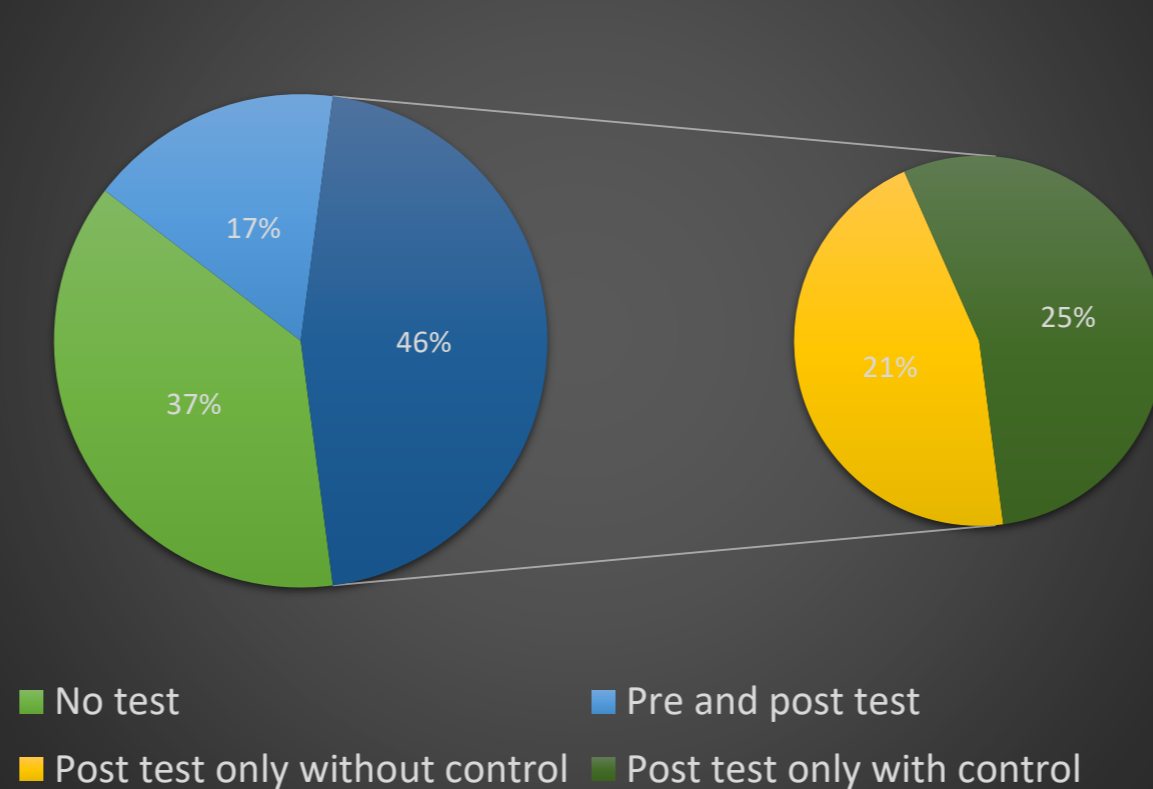
The participants' attrition rate have shown to be high in most studies. 60% of the studies have shown that the attrition rates are found within the range of 80% - 99%.

For studies with a control, 3 papers showed that there was a better post-test score or graduation result as compared to the traditional. On a scale of 0 to 20, Hossain et al., reported a 0.7 greater knowledge (95% CI, -1.3 to 2.6) and a 0.4 greater confidence in treatment (95%CI, -1.0 to 1.8) using MOOC rather than learning traditionally. According to Campbell et al., there was an improvement in the pre- and post- test scoring in the MOOC group (P<0.001, CI 95%), but no significant improvement in the control group using the pedagogical method. (P=0.708, CI 95%). Shang et al., reported a higher average score of 66.3 for the blended group compared to 59.2 for traditional group (P<0.05, CI 95%).

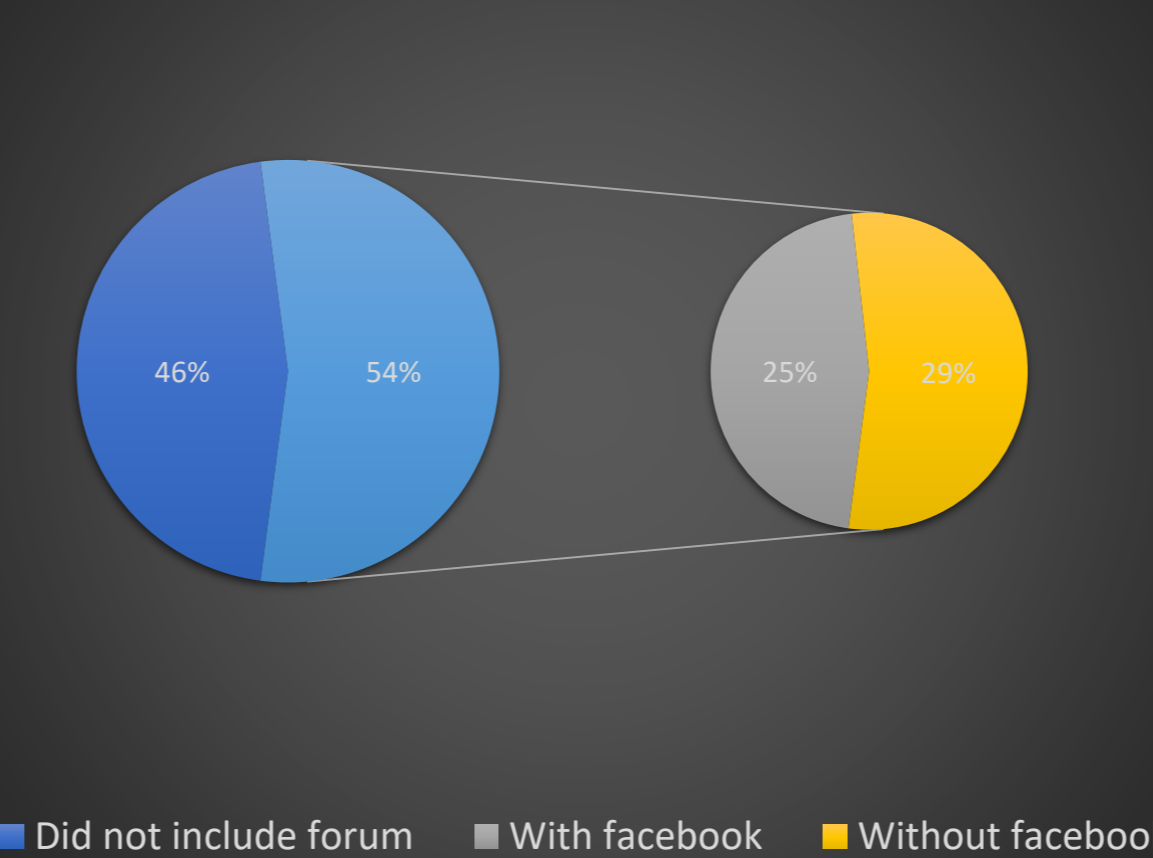
Relationship between Duration and Attrition



Papers that included an objective measure



Use of Discussion forum



Benefits	Limitations
41% reported increased networking	33% reported lack of social interactions and reduced communication between teachers and students
37.5% reported increased collaboration and support using discussion forum	71% of the papers reported unsuitable learning style
67% of the papers reported an increase in knowledge and relevant skills	25% of the papers reported usage of discussion forum was low with excessive irrelevant post
Able to teach a large number of audiences around the world and low barriers to access the materials.	12.5% of the papers reported problem with IT and older population had problem accessing them

DISCUSSION

Benefits

A large percentage of participants across all studies found MOOC to be more beneficial than traditional studying alone. However, using both MOOC and the traditional studying proved to be most beneficial which also allowed for reinforcement of previously learned content. The MOOC proved easy to use for most of the participants.

It provides opportunities for engagement and interaction at the different levels with its broad geographical reach. Enabling environment for participation and collaborative learning also helps in sharing of knowledge and increasing their network across a larger audience. Especially forums, where any doubts between peers can be easily answered due to a larger number of people with expertise present. This promotes a developing sense of community and engagement with those in the field. Discussions can be held through multiple platforms on a global scale, inclusive content that may not have been taught through traditional means are brought up.

Since most MOOCs are of free usage, it can benefit those in differing SES groups and, even for countries that are in various stages of development. Removal of educational barriers to entry. However, this is dependent on the platform that the MOOC stems from as several would require payment.

Limitations

It's difficult for MOOC to replace having an experienced, knowledgeable, and engaging teacher helming a small class. Obvious lack of instructor-learner interactions resulted in some feelings of isolation and disconnectedness. The course might not be tailored to an individual's base knowledge, and the large gaps in participants' knowledge make accommodation to the various levels challenging. The content could be too technical, proving to be too difficult, or too easy for advanced learners. (e.g. peer-reviewed word assignments with technical language were found not to be popular with some as the content was too difficult to grasp).

The MOOC have showed that there are poor completion rates with a high level of attrition rates. The most common reason was a lack of commitment from students since the course was free.. The duration of the MOOC is affective on the attrition rate if it is too long or short.

Evaluations are not supervised, and MOOCs rely on the individual's self-proclaimed affirmation of the honour code. The post test result might have been affected since the participants have access to other resources. Those lacking basic competencies (e.g. self-regulation, self-efficacy, communication skills) will probably drop out, even if the MOOC is well-designed. Therefore, self-assessment might not be the most objective measurement. Peer evaluation could face the issue of questionable quality control. Many of the studies did not include a control or a pre-test which can affect the reliability of the studies.

CONCLUSION

In conclusion, the MOOC has shown to be useful in supplementing the current medical education. However, there are many limitations such as the high attrition rate and not being able to fit the needs of all the participants. Based on this studies, the current literature is still lacking strong trials to prove that MOOC is better than the traditional method of learning and it has yet to be seen if it can replace the current teaching. However, it can be used to supplement the current teaching methods.