

# The immediate effects of foam roller with vibration on hamstring flexibility and jump performance in healthy adults

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Dear editor,

The authors would like to thank Jae-Heon Lim and Chi-Bok Park for their valuable work published in the *Journal of Exercise Rehabilitation* titled "The immediate effects of foam roller with vibration on hamstring flexibility and jump performance in healthy adults" (Lim and Park, 2019) on volume 15 and issue 1, 2019. We have read through the article with interest and gathered knowledge. However we believe this study is informative but we found some methodological issue to be considered.

Firstly, the authors used G-power program for sample size estimation using effect size 0.6, level of significance 0.05 and 70% power of the study and they calculated sample size 20. As we recalculate the sample size by using G-power program for comparison of two means using the same effect size, level of significance and power of the study and found minimum 72 sample was required for this study.

Secondly the subject selection criteria in this study was not appropriate, they mentioned inclusion criteria as no neurological or orthopaedic diseases that may affect intervention, not taking muscle relaxant drugs instead of that they can mentioned healthy individual and related to demographic characteristics such as age, body mass index (Patino and Ferreira, 2018) seated flexion test

< 33 cm.

Thirdly the ideal power of any study should be minimum 80% (Suresh and Chandrashekar, 2012) hence they use power as 70% that might be inappropriate.

Fourthly the author mentioned about the intervention that 1 min 5 times for a total of 10 min was confusing instead of that the author would have mentioned 1 min 5 times both legs for total 10 min.

Another consideration in the last line of the material and methods section "The duration of that was 32 Hz" is confusing as the duration cannot be expressed as Hz. Instead of duration frequency would be more appropriate.

Statistical errors are common in scientific literature; the parametric tests are based on the assumption that data followed normal distribution, it is quite impossible to draw accurate and reliable conclusion about reality without normality of the data, so normality test should be taken seriously. With large sample size (> 30 or 40) the violation of the normality should not cause the major problem (Ghasemi and Zahediasl, 2012) but in this study the sample size was 20 and there is no statement regarding normal distribution. We assume if the sample size is < 30 the data do not follow normal distribution. The authors used independent

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*t*-test and analysis of covariance those are parametric tests that are not appropriate for this statistical analysis.

Other than the aforesaid issue, this current study can help the fellow clinician, athletes and population who are used to foam roller. We congratulate the authors for their valuable research and we would recommend that the authors revise their methodology.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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