

Why smartphone is a low-cost alternative in whole slide imaging?

Dear Editor,

Patil *et al.* contributed an interesting article in May 2020.^[1] They compared the whole slide images prepared from photomicrographs captured by a laboratory-grade microscope camera and a consumer-grade smartphone camera.

As the authors suggested, a microscope equipped with Whole Slide Imaging (WSI) is still a high-cost instrument and majority of the centers cannot afford it. Hence, a low-cost alternative is being tried with a simple light microscope, smartphone, and an image editing software.^[2,3] In this low-cost model of WSI, the smartphones can serve as the “camera” to capture images from any microscope. The generous use of the smartphone by healthcare professionals makes it a readily available source of a camera for educational and diagnostic purposes. Microscopes with the WSI technology have built-in software for stitching multiple images. It is an automated process. In contrast, in the low-cost model, the stitching is handled by the operators manually with an image editing software. This innovative approach of using the already available resources (i.e., microscope, smartphone camera, and image editing software) for WSI would enable remote and resource-limited settings to scan the whole slide for either diagnostic or academic purposes.

In the study,^[1] the authors used an iPhone that is considered one of the high-cost smartphones in India. Besides, the image editing software that they used (Photoshop CS6) is high-cost software used by professionals. They could test the system with an average low-cost smartphone with open-source image editing software to make the technology a truly low-cost one. In the study, the authors used 20 slides and the quality was rated by 2 observers. However, how they rated the clarity, reproducibility, ease of operation, and sharing is not available in the manuscript. The authors used the Chi-square test and Analysis of variance (ANOVA) for statistically testing their findings. However, which parameters they used in the Chi-square test and which were used in ANOVA was not mentioned. Furthermore, the result section could be presented with the outcome of the statistical analysis. At least the *P* value could be presented without which the conclusion becomes invalid. A so-called “graph” with incomprehensible bar height could be avoided as the percentages are already mentioned in the text.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Patil SK, Nair MR, Manjunath AB, Mujib BR. Evaluation and comparison between smartphone and photomicrography based whole slide imaging. *J Family Med Prim Care* 2020;9:2319-23.
2. Mulay HD, Reddy AK, Yelikar BR. Mobile whole slide imaging with Indian twist. *Indian J Pathol Microbiol* 2018;61:153-4.
3. Huang YN, Peng XC, Ma S, Yu H, Jin YB, Zheng J, *et al.* Development of whole slide imaging on smartphones and evaluation with ThinPrep cytology test samples: Follow-up study. *JMIR Mhealth Uhealth* 2018;6:e82.

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