

## Role of Imitomeasure in the Digital Assessment of Wound

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### Abstract

High definition digital cameras built into smartphones are now widely accessible and reasonably priced. Such gadgets' exceptional portability and mobility make them particularly appealing for use in therapeutic settings. For the purpose of simplifying and streamlining wound measurement and recording, smartphone specific applications like Imitomeasure have been developed. As a non contact digital planimetry application, the Imitomeasure app has an edge over other techniques. There are several ways to measure a wound, including using a photograph, a comparison, a ruler, or a graph.<sup>1</sup> When the Imitomeasure app's effectiveness in measuring wounds was examined, it was discovered to be a useful tool. In this study, the Imitomeasure app's goal was to measure the size of the wound and take action to reduce it.

**Keywords:** Imitomeasure; Digital assessment; Wound.

## INTRODUCTION

Smartphones incorporating high definition digital cameras are now widely available at a relatively low cost. The high portability and mobility provided by such devices are especially appealing for clinical application. Imitomeasure and other smartphone dedicated applications have emerged to make wound measurement and documentation

easier and simpler. The imitomeasure app is a non contact digital planimetry application, providing an advantage compared with other methods. There are various methods by which wound can be measured like photographic record, comparison, ruler method, graph method.<sup>1</sup> The efficacy of imitomeasure app in wound measurement was studied and it was found to be an effective tool. The objective of imitomeasure app in this study was to assess the wound size and implement steps to decrease the wound size.

## MATERIALS AND METHODS

This study was conducted in the department of plastic surgery in a tertiary care centre after obtaining the departmental ethical committee approval. The subject was a 31-year-old male with no known co-morbidities presenting with polytrauma including fracture of left femur and tibia. He underwent external fixation and was

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admitted in hospital for 5 months. He had an injury over the left knee leading to development of raw area in that region which was managed based on SWCR guidelines.<sup>2</sup> Serial assessment of the wound is done with Digital assessment app available in mobile phones named Imitomeasure.<sup>3</sup> This app is available freely in google play store and Apple store.

The following steps were followed to use the Imitomeasure application and get digital wound measurements after getting Informed written consent.

**Step 1:** Install the app in your phone

**Step 2:** The Imitomeasure app has two formats. One is Calibration mode and other one is manual mode.

**Step 3:** Calibration markers (fig. 1) are available in app and in websites which can be downloaded and taken printout. This calibration marker should be used while taking photo and in digital assessment of wound.

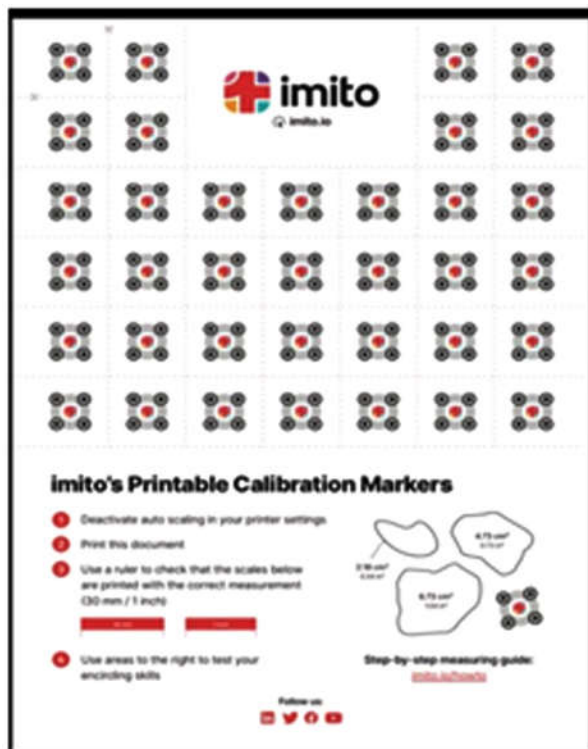


Fig. 1: Calibration marker

**Step 4:** In manual mode, the part to be taken photo in our body is selected and the photos are captured for the digital assessment.

**Step 5:** After taking photos in both modes, the wound margins are marked free hand in phone and

then clicked 'measure'.

Thus, the area of wound assessment is done digitally (fig. 2)



• A1

Area

9.33 cm<sup>2</sup>

## RESULTS

Imitomeasure helped in accurate measurement of wound size and guided in serial monitoring of wound and helps in assessment of wound response to treatment.

## DISCUSSION

Measurement of wounds is crucial to management. Any alteration in the wound region indirectly reveals information about the healing process or the effectiveness of the current therapy. Correctly tracking the wound can prevent the continuation of inadequate treatment, which would extend the patient's stay in the hospital. Therefore, the management of wounds requires an objective technique for precise measurement and recording. In the past, wounds were measured using a photograph, a comparison, a ruler, or a graph. The majority of plastic surgeons employ clinical photography as part of record keeping and tracking the development of the disease or wound.<sup>4,5</sup>

For measuring wounds, imitomeasure is a useful instrument. It aids the medical professional in comprehending the behaviour of the wound and in taking the appropriate steps to slow its progression and speed up healing. The effectiveness of the

current treatment can be determined and changed by measuring the wound using Imitomeasure. For precise wound measurement and documentation in wound treatment, it is an efficient procedure. Another free piece of software for the digital assessment of wounds is digital planimetry with image J.<sup>6</sup>

Imitomeasure is a quick, cost-effective, easily accessible tool for measuring wound surface area in clinical settings. It is a purely arbitrary tool for measuring wounds.<sup>7</sup> We were able to precisely measure the size of the wound with the aid of Imitomeasure. The usage of the Imitomeasure application as a useful tool for wound treatment is highlighted in this article. For more substantial results, a bigger sample size, controlled trial would be beneficial.

## CONCLUSION

This is a preliminary study to assess the role of Imitomeasure in digital assessment of wounds. A large multicentric, double blinded control study with statistical analysis is required to further substantiate the results.

**Conflicts of interest:** None

**Authors' contributions:** All authors made contributions to the research, is putatively expected to be useful article.

**Availability of data and materials:** Not applicable.

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## REFERENCES

1. Haghpanah S, Bogie K, Wang X, Banks PG, Ho CH. Reliability of electronic versus manual measurement techniques. Arch Phys Med Rehabil. 2006; 87: 1396-1402.
2. Chitoria RK, Kumar P, Baljaj SP, Singh AK, Gupta DK. General clinical guidelines for wound management: Redefining acronym SWCR. Journal of SWCR. 2014; 7(1): 2-7.
3. Shetty R, Sreekar H, Lamba S, Gupta AK. A novel and accurate technique of photographic wound measurement. Indian J Plast Surg. 2012; 45(2): 425-429.
4. Majeske C. Reliability of wound surface area measurement. PhyTher. 1992; 72: 138-141.
5. Mayrovitz HN, Soontupe LB. Wound area by computerized planimetry of digital images. Adv Skin Wound Care. 2009; 22: 222-229.
6. Pandey S, Chitoria RK, Mohapatra DP, et al. Application of digital planimetry: A novel technique of wound measurement in diabetic foot ulcer. Dermatology International. 2016; 21: 343-331.
7. Pires IM, Garcia NM. Wound area assessment using mobile application. Proceedings of the International Conference on Biomedical Electronics and Devices - Volume 1: SmartMedDev; International Conference on Biomedical Electronics and Devices; January 12-15; Lisbon, Portugal. 2015. pp. 271-282.

