

CASE REPORT

Wound Assessment using a Smartphone-based Application: Imitomeasure in Pressure Sore Injury

Nagarjun S. Ghatti¹, Ravi Kumar Chittoria², Kanav Gupta³**HOW TO CITE THIS ARTICLE:**

Nagarjun S. Ghatti, Ravi Kumar Chittoria, Kanav Gupta. Wound Assessment using a Smartphone-based Application: Imitomeasure in Pressure Sore Injury. *Jr. Med. & Health Sci.* 2026; 13(1): 45-47.

ABSTRACT

Introduction: Wound dimensions can be measured using various methods, including photographs, comparisons, rulers, or grids. Modern smartphones, equipped with high-quality cameras, are now more accessible and affordable, offering new opportunities in medical applications. Specialised smartphone apps have contributed numerous benefits in healthcare, particularly for wound measurement. One such app, Imitomeasure, has been developed specifically to measure wound dimensions without direct contact. This non-contact approach reduces the risk of infection compared to traditional methods using rulers or tape. Studies assessing the effectiveness of Imitomeasure have shown it to be highly effective for measuring wound dimensions.

Methods: In this research, the size of the Pressure sore was measured using the Imitomeasure app on a smartphone. Post debridement and regenerative therapy, and negative pressure wound therapy size of pressure sore was noted by a free of cost, easily accessible application on the mobile phone.

Results: The Imitomeasure application helped calculate wound size accurately at multiple time intervals and see progression of healing.

Conclusion: Imitomeasure smartphone application can be used efficiently for measuring the size and progression of wounds efficiently with a non-contact method.

KEYWORDS

• Imitomeasure application • Wound dimension • Measurement

AUTHOR'S AFFILIATION:

¹ Observer, Department of Plastic Surgery, JIPMER, Puducherry, India.

² Senior Professor and Associate Dean (Academic), Head of IT Wing and Telemedicine, Department of Plastic Surgery and Telemedicine, JIPMER, Puducherry, India.

³ Senior Resident, Department of Plastic Surgery, JIPMER, Puducherry, India.

CORRESPONDING AUTHOR:

Ravi Kumar Chittoria, Senior Professor and Associate Dean (Academic), Head of IT Wing and Telemedicine, Department of Plastic Surgery and Telemedicine, JIPMER, Puducherry, India.

E-mail: drchittoria@yahoo.com

➤ **Received:** 29-09-2025 ➤ **Accepted:** 01-12-2025



INTRODUCTION

Better quality cameras are available in smartphones in recent times, most of which are quite affordable. The benefits of implying smartphone-based phone-based applications in healthcare are that they can be easily carried to every place. Software such as Imitomeasure have been found to be very helpful in assessing wounds of patients. They have the advantage of being non-contact and decrease the chances of spreading the infections to the patients, which arises in physical methods like rulers or inch tapes. In this case report, grade 4 pressure injury over the sacral region of a patient has been assessed using the Imitomeasure application.^{1,2}

MATERIALS AND METHODS

Informed written consent was obtained from the patient and permission obtained from departmental ethical committee for performing this study. A 55-year-old female known diabetic uncontrolled and parotid carcinoma with an alleged history of lower limb weakness with incontinence of stools and urine. She developed ulcers in the sacral and greater trochanter regions. The sacral sores deepened and had foul smelling discharge and turned yellow in colour from red. The wound of the patient has been assessed using the Imitomeasure application. We have performed this study on One plus phone using Imitomeasure application downloaded for free from.

This study was conducted on n One plus phone with the free Imitomeasure app from the Google play Store. The app installation process involves the following steps:

Google Play store

1. To install the application the following steps are done:
2. To search for "Imitomeasure" on Google Play Store, and install the application.
3. Two modes are available - Calibration mode and manual mode.
4. There are certain markers for calibration which is available in the application, which has to be printed out. This print out has to be used while taking pictures for calibration mode.

5. If the assessment is being done in manual method, select the part where the wound is present. Then capture photos of the wound.
6. After taking a photo, draw the outline of the wound, and click measure, then the area of the wound will be measured.

RESULTS

ImitoMeasure enables contactless wound measurement using your smartphone, offering near-immediate and highly accurate results, ideal for tracking healing over time.



Figure 1: Figure showing measurement of area and circumference of a bedsore wound over sacral region using Imitomeasure software

DISCUSSION

Assessing wound parameters, such as wound dimensions, is essential for tracking wound healing progress. Various dressing materials and techniques are used to enhance healing, and the effectiveness of these methods can be evaluated by observing changes in wound size. Regularly measuring wound dimensions provides insight into whether the wound is healing (seen as a decrease in size) or worsening (seen as an increase in size).

Traditionally, clinician's measure wound dimensions with rulers or measuring tapes, but these methods risk contaminating the wound. A non-contact method for measuring wound dimensions would thus be advantageous. Imitomeasure, an affordable and highly effective mobile application, uses smartphone cameras to accurately measure wound dimensions without direct contact.

In this study, one wound of patients pressure injury over the sacral region was assessed once using imitomeasure application, and the results were found to be accurate. The accuracy of this application can be confirmed by performing a large scale study, which may allow the usage of this application universally, and it shall indeed be a very useful tool for monitoring wound status.

CONCLUSION

In this study, the wound of a patient with pressure injury on the sacral region was assessed using the Imitomeasure application. Larger studies using this application are required to further validate its benefits and reliability, establishing it as a valuable tool for wound monitoring.

Significance of the study:

Digital assessment of the pressure sore images help in easier assessment of wound status and its treatment.

Recommendations

It is recommended that digital devices provide easy and non-contact assessment of the wound but are not very useful in circumferential wound assessment.

Conflicts of interest: None

Declarations: Authors' contributions

All authors made contributions to the article

Availability of data and materials: Not applicable

Financial support and sponsorship: None

Consent for publication: Not applicable

AI usage declaration: We did not use artificial intelligence in writing this research in any way

REFERENCES

1. Haghpanah S., Bogie K., Wang X., Banks P.G., Ho C.H. Reliability of electronic versus manual measurement techniques. *Arch Phys Med Rehabil.* 2006; 87: 1396-1402.
2. Chittoria R.K., Kumar P., Baljaj S.P., Singh A.K., Gupta D.K. 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 A.K. 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 H.N., Soontupe L.B. Wound area by computerized planimetry of digital images. *Adv Skin Wound Care.* 2009; 22: 222-229.
6. Pandey S., Chittoria R.K., Mohapatra D.P., *et al.* Application of digital planimetry: A novel technique of wound measurement in diabetic foot ulcer. *Dermatology International.* 2016; 21: 343-331.
7. Pires I.M., Garcia N.M. 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. 271-2.*