ISSN: 1676-4285

OBJN Online Brazilian Journal of Nursing
ENGLISH
Federal Fluminense University
AURORA DE AFONSO COSTA NURSING SCHOOL
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Preview Notes

Measurement of venous ulcers by means of software: assessment of test reproducibility

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ABSTRACT

Aim: To compare the measurement of the area of venous ulcers through AutoCAD® and Image Tool software. **Method:** This is a survey to assess the reproducibility of tests which used a quantitative approach. In the (judgment) sample, all patients with venous ulcers met in the data collection period (March-July 2015) will be included; patients under the age of 18 years, those with diminished cognitive ability or impaired verbal communication who are unaccompanied and those with ulcers that extend across more than one side of the leg, will be excluded. Data collection will be accomplished through photography and the filling in of forms. **Expected results:** This study intends to propose, together with the Group of Hospital Skin Injury Studies, the deployment and implementation of the evaluation method and the measurement of wounds. **Implications for Health:** to deepen and disseminate the theme, so that professionals begin using objective methods for measurement.

Descriptors: Nursing; Health Management; Varicose Ulcer; Weights and Measures; Software validation.

Eberhardt TD, Lima SBS, Lopes LFD, Soares RSA, Kessler M. Measurement of venous ulcers by means of software: assessment of test reproducibility. Online braz j nurs [internet] 2015 Mar [cited year month day]; 14 (suppl.):359-62. Available from: http://www.objnursing.uff.br/index.php/nursing/article/view/5183

PROBLEM SITUATION AND ITS SIGNIFICANCE

In the care management process for patients with lesions, the nurse has many responsibilities, especially the assessment of the evolution of the injury and the measurement of the wound[1].

To carry out measurements we can use digital photographs and specific software such as AutoCAD® and the Image Tool. AutoCAD® is commonly used by "…civil engineers in the physical area calculation in topography"[2:305]. Image Tool, which was developed by the University of Texas Health Sciences Center at San Antonio, is introduced as a practical tool, and it is capable of obtaining objective and reliable measures of the actual size of the lesion, providing security, speed and reliability to the measurement process[3]. In the literature review conducted for this project, we found a study comparing AutoCAD with other software[2]. However, no research has been found that evaluated the other program mentioned, or that has compared the two programs.

RESEARCH QUESTION

Is there a difference between the area of venous ulcers measured through AutoCAD® and Image Tool?

OBJECTIVES

The overall objective is to compare the measurement of areas of venous ulcers through the use of AutoCAD® and Image Tool software. The specific objectives are:

(a) to characterize patients with venous ulcers attending the outpatient clinic of a teaching hospital in terms of sociodemographic and clinical data;

(b) to check the reproducibility of the measurement of the venous ulcer area through the AutoCAD® software;

(c) to verify the reproducibility of measurement of the area of venous ulcers using the software Image Tool.

METHOD

This is an evaluative analysis of test reproducibility in which a quantitative approach was used. The research will be performed in the clinic of a teaching hospital, which is a reference in terms of healthcare for a region of the state of Rio Grande do Sul, consisting of 291 beds.

Among the medical specialties of this clinic, we can highlight angiology, with consultations available in the afternoon, Monday through Friday. In addition to medical care, patients receive nursing care, wound assessment and bandages.

The variables studied are the areas of venous ulcers measured by computational techniques of images taken by photo, and sociodemographic and clinical variables, collected through the filling in of forms.

The study population consists of all patients suffering from venous ulcers treated at the clinic. In the judgment sample, patients treated during the data collection period will be included (from March to July 2015). Those who are under the age of 18, who have reduced cognitive ability or impaired verbal communication and who are without a companion, and whose ulcer extends over more than one side of the lower limb will be excluded.

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For data collection, nurses of the Skin Injury Study Group (GELP) will be assessors of the research. Each patient will have his ulcer photographed by the researcher and by an assessor using a Fujufilm Finepix S 14 Mega pixels camera.

The photographs will be transferred to the researcher's personal notebook. Both the evaluator and the researcher will perform measurements of the two photographs with the aid of the two computer programs. This process will be carried out with all the assessors, always in pairs (researcher and assessor), until 10 photos are obtained by each assessor or until we reach the maximum number of individuals belonging to the population under study.

Database will be performed using Microsoft Office Excel® by double independent typing. Then it will be transported and analyzed using the Statistical Package for Social Sciences. The variables under study (areas of venous ulcers) are the continuous quantitative factors, therefore the mean and median will be calculated as central position measurements; variance, standard deviation and coefficient of variation are used as dispersion measures; and the intraclass correlation coefficient will be used to express the correlation between the events.

All measures will be carried out between the same patient's ulcers, measured using the same software and using different software. They will also be compared by testing hypotheses to be defined according to data normality. For statistical analysis, we adopt a significance level of 5%.

This study is based on ethical principles grounded in Resolution No. 466/2012. The project was approved by the Research Ethics Committee under the opinion 932,838.

EXPECTED RESULTS

This study intends to propose, in conjunction with the hospital GELP, the deployment and implementation of the method for the evaluation and measurement of wounds, as well as deepening and disseminating the theme, so that professionals begin using objective methods to undertake measurements.

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All authors participated in the phases of this publication in one or more of the following steps, in According to the recommendations of the International Committee of Medical Journal Editors (ICMJE, 2013): (a) substantial involvement in the planning or preparation of the manuscript or in the collection, analysis or interpretation of data; (b) preparation of the manuscript or conducting critical revision of intellectual content; (c) approval of the versión submitted of this manuscript. All authors declare for the appropriate purposes that the responsibilities related to all aspects of the manuscript submitted to OBJN are yours. They ensure that issues related to the accuracy or integrity of any part of the article were properly investigated and resolved. Therefore, they exempt the OBJN of any participation whatsoever in any imbroglios concerning the content under consideration. All authors declare that they have no conflict of interest of financial or personal nature concerning this manuscript which may influence the writing and/or interpretation of the findings. This statement has been digitally signed by all authors as recommended by the ICMJE, whose model is available in http://www.objnursing.uff.br/normas/DUDE_eng_13-06-2013.pdf

Received: 03/13/2015
Revised: 06/22/2015
Approved:06/22/2015