INPLASY PROTOCOL

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None declared.

3D photography versus digital planimetry in wound measurement: a systematic review protocol

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Review question / Objective: The aim of this study is to find whether there is concordance between two methods of wound area measurement: 3D photography and digital planimetry.

Condition being studied: One of the most important factors in all types of wound management is wound measurement and two new digital techniques are : digital planimetry and 3D-photography.

Eligibility criteria: the articles will be included only if the study cases would be measured by both methods of wound measurement including 3D photography and digital planimetry. patients with wound in any area of their body like diabetic ulcers, venous ulcers or burning. not models or animals. not bite or scar or bruising. without any restriction in age or gender.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 October 2021 and was last updated on 19 October 2021 (registration number INPLASY2021100069).

INTRODUCTION

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two new digital techniques are : digital planimetry and 3D-photography.

METHODS

Search strategy: PUBMED search strategy ("Wound scan*"[all fields] OR "wound camera*"[all fields] OR "3DWM"[all fields] OR "3D-WAM"[all fields] OR "MAVIS III"[all fields] OR "woundzoom"[all fields] OR " Silhouette camera"[all fields] OR "eKare InSight"[all fields] OR "Eykona camera"[all fields] OR "Artec MHT"[all fields] OR "lifeViz"[all fields] OR "woundvue*"[all fields] OR "NDKare"[all fields] OR "3-D"[all fields] OR "3D"[all fields] OR "three dimension*"[all fields] OR " three-dimension*"[all fields] OR "3 dimension*"[all fields] OR "3-dimension*"[all fields] OR "stereoscopic photo*"[all fields] OR "stereoscopic imag*"[all fields] OR "stereoscopic pictur*"[all fields] OR "stereoscopic graphic*"[all fields] OR "stereoscopic figure*"[all fields] OR "stereoscopic snapshot*"[all fields] OR "stereoscopic scan*"[all fields] OR "stereoscopic camera*"[all fields] OR "Stereophotogra*"[all fields] OR "stereo photo*"[all fields] OR "Structure from Motion"[all fields] OR "SFM"[all fields] OR "Photogrammetry"[Mesh]) ("planimet*"[all fields] OR "Visitrak"[all fields] OR "E-Zgraph"[all fields] OR "Universal desktop ruler"[all fields] OR "AVPsoft"[all fields] OR "imageJ"[all fields] OR "Transparent trac*"[all fields] OR "acetate trac*"[all fields] OR "woundvue*"[all fields] OR "NDKare"[all fields] OR "photogra*"[all fields] OR "Wound scan*"[all fields] OR "wound camera*"[all fields]) ("Wound*"[tiab] OR "injur*"[tiab] OR "lesion*"[tiab] OR "lacera*"[tiab] OR "burn*"[tiab] OR "TBSA"[tiab] OR "Wounds and Injuries"[Mesh] OR "Burns"[Mesh]).

Participant or population: In this review we will include patients with wound in any area of their body (not models or animals) like diabetic ulcers, venous ulcers or burning. not bite or scar or bruising. without any restriction in age or gender.

Intervention: In our study we will compare two diagnostic methods (two wound measurement methods), so we do not have intervention, but we put two measurement methods in intervention and comparator boxes. 3d photography from wound by using 3D cameras or by 2D cameras and using some methods and software to make 3D photos from them.it is not important the brand of camera or software.

Comparator: Digital planimetry which can be done by any of these two methods : -non touch : taking 2D digital photos from wound by digital camera or smartphone and measuring wound by software. -touch : using devices like Visitrack which put a disposable and transparent page on wound and mark the margins of wounds and then measuring marked area on the page by digital methods.

Study designs to be included: Cohort studies, interventional studies, diagnostic studies, Observational analytic studies.

Eligibility criteria: The articles will be included only if the study cases would be measured by both methods of wound measurement including 3D photography and digital planimetry. patients with wound in any area of their body like diabetic ulcers, venous ulcers or burning. not models or animals. not bite or scar or bruising. without any restriction in age or gender.

Information sources: Systematic literature search in digital databases : PubMed, Scopus, Web of Science core collection, Embase, CINAHL.

Main outcome(s): In all included studies wound area should be measured by both digital planimetry and 3D photography techniques.

Additional outcome(s): Wound area, length of wound, width of wound, positive and negative points of each wound measurement technique.

Data management: Study selection - Titles and abstracts of article which are found from databases will be exported to Endnote and then Rayyan . Duplicated

articles will be removed. Two independent team members will screen the papers to select most relevant articles by using inclusion and exclusion criteria. the full text of selected articles will be attached and will be reviewed separately by reviewers to select finally included papers. disagreements will be resolved by discussion with the third member of team. Data extraction: data extraction will be performed using a pre-designed data extraction form considering the following items of each included article: title , first author , year published , country , setting, ethical committee approval , informed concent , study type , number of raters, gender , age (mean/SD) , sample size (number of patients) , sample size (number of wounds), sample method, inclusion criteria, exclusion criteria , type of wound , place of wound , type of instrument for 3D photo , type of instrument for digital planimetry and software, data analysis methods, wound surface range size, correlation of two methods for area of wound , correlation of two methods for length and width of wound, level of agreement between two methods, difference in medians for area (Pvalue), difference in medians for length and width (Pvalue), intrarater ICC for area, length, width, level of reliability between a rater's different measurements, interrater ICC for area, length, width, level of agreement between the raters, positive and negative points for 3d photo and digital planimetry wound measurement two member of team will extract data in an excel sheet independently from finally included articles and the third member will check these data.

Quality assessment / Risk of bias analysis: The Joanna Briggs Institute Critical Appraisal tools for use in JBI Systematic Reviews.

Strategy of data synthesis: A systematic review synthesis will be conducted, which will use text and tables to explain findings for qualitative synthesis and if it will be possible to perform meta-analysis based on studies outcomes, we will do meta-analysis using CMA and STATA Softwares.

Subgroup analysis: No subgroup analysis.

Sensitivity analysis: Not applicable in this systematic review.

Country(ies) involved: Iran.

Keywords: 3D photography, 3D-photography, Digital planimetry, Wound measurement.

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