

Telemedicine Program for Chronic Wound Management



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BACKGROUND

- Chronic wounds are slow healing wounds, and require frequent monitoring of progress by clinicians during wound healing (Chittoria, 2012; Gray et al., 2010).
- Weekly assessment of chronic wounds is recommended by the Agency for Healthcare Research and Quality National Guidelines (Jones, Fennie, Lenihan, 2007).
- Telemedicine technology creates immediate access to wound images with direct interaction between nurses and clinicians and may improve patient care.
- Studies have evaluated the accuracy of digital images securely transmitted compared to face-to-face assessment but no studies to date have used a standardized wound assessment tool to make this comparison.



PURPOSE

The purpose of this study is to utilize a standardized tool to compare the results of the on-site and digital image wound assessments.

RESEARCH QUESTION

For patients 50 years and older with a chronic wound who reside in a nursing facility, how do the Bates-Jensen wound assessment scores assessed by an offsite clinician utilizing digital imaging compare with onsite assessments by an RN?

RESEARCH METHODOLOGY

Design: Prospective Case Series Method

Setting: Alpine Fireside Health Center in Rockford, Illinois

Sample: 7 wound cases

Inclusion Criteria:

- Adults age fifty years and above
- Males or Females with no specified ratio
- Resident of the nursing home facility
- Any type of wounds (i.e. pressure ulcers, diabetic, arterial, venous ulcers, skin tears, and surgical wounds)

Data Collection Tool: Bates-Jensen wound assessment tool

IRB Approval: March 9, 2015

The Facility RN:

- Identified patients who met inclusion criteria and obtained written informed consent
- Assigned identification numbers to the participants and performed the onsite assessment of the wounds
- Took a close-up picture of the wound and sent the image via a secured digital imaging text messaging technology to the principal investigator (PI) who performed the off-site assessment
- Both assessments utilized the Bates-Jensen wound assessment tool

Data Analysis: Statistical Package for the Social Sciences (SPSS Version 24.0) Inter-rater reliability using Spearman r (≥ 0.8 =Good agreement between raters; $0.7 - 0.79$ =Adequate agreement; ≤ 0.69 =Needs improvement in agreement)

Bates-Jensen Wound Assessment Tool

RESULTS

Bates-Jensen Categories	Inter-Rater Reliability	Recommendations
Size	.722 Adequate agreement	Digital wound picture should include a ruler to show length by width in both directions.
Depth	.686 Approaching adequate agreement	Onsite RN should visually communicate an estimate of the depth measurement.
Edges	.885 Good agreement	The Bates special instruction guide was very helpful in identifying the type of wound edge.
Undermining	Not present in these 7 cases	Onsite RN to highlight the area of undermining. Variation in wound sample.
Necrotic Tissue Type	.840 Good agreement	Onsite RN will have to communicate if the wound was clean or dirty to determine if necrotic tissue was adherent or loose.
Necrotic Tissue Amount	.683 Approaching adequate agreement	The tool recommends using a transparent metric measuring guide with concentric circles divided into 4 (25%) pie shaped quadrants to help determine the percent of necrotic tissue.
Exudate Type	.764 Adequate agreement	Digital wound photograph should include photo of bandage.
Exudate Amount	.817 Good agreement	Wound should be photographed before and after wound cleansing. Photo of bandage would help determine amount.
Skin Color Surrounding Wound	.342 Poor agreement	Close-up photograph should be captured at a predetermined distance.
Epithelialization and Granulation	.048/.522 Poor agreement	The tool does not have an option to choose either granulation or epithelialization for wounds without both tissue types present. Scoring of wound should address both options.

IMPLICATIONS FOR NURSING

IMPLICATIONS FOR PRACTICE

- Incorporate standardized wound care tools in chronic wound management
- Implement digital technology to improve wound care and meet the recommendation for timely management by wound clinicians.
- Specify photo angles, distances, and provide rulers.
- Provide instructions for photographing bandages, drainage, uncleaned and cleaned wounds.

IMPLICATIONS FOR EDUCATION

- Provide education for health care professionals on how to utilize standardized wound assessment tools and telemedicine technology for wound care.

IMPLICATIONS FOR RESEARCH

- Research to create an improved assessment tool that is specific for digital technology.

IMPLICATIONS FOR HEALTHCARE POLICY

- Evaluate cost effectiveness and reimbursement for telemedicine wound care programs under the Accountable Care Act and for other payers.



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