5-2013

Reliability and Validity of the NE1 Wound Assessment Tool (WAT)

Stephanie Coon
University of Nevada, Las Vegas

Faustina Tran
University of Nevada, Las Vegas

Melinda Vicencio
University of Nevada, Las Vegas

RELIABILITY AND VALIDITY OF THE NE1 WOUND ASSESSMENT TOOL (WAT)

By

Stephanie Coon

Faustina Tran

Melinda Vicencio

A doctoral project submitted in partial fulfillment

of the requirements for the

Doctor of Physical Therapy

Department of Physical Therapy

School of Allied Health Sciences

The Graduate College

University of Nevada, Las Vegas

May 2013

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

THE GRADUATE COLLEGE

We recommend the doctoral project prepared under our supervision by

Stephanie Coon
Faustina Tran
Melinda Vicencio

Entitled

Reliability and Validity of the NE1 Wound Assessment Tool (WAT)

be accepted in partial fulfillment of the requirements for the degree of

Doctor of Physical Therapy
Department of Physical Therapy

Robbin Hickman, D.Sc., Research Project Coordinator

Daniel Young , D.P.T., Research Project Advisor

Merrill Landers, Ph.D., Chair, Department of Physical Therapy

Thomas Piechota, Ph.D., Interim Vice President for Research &
Dean of the Graduate College

May 2013

Abstract

Background and Purpose: Current literature indicates a lack of reliability and validity of existing pressure ulcer (PrU) staging systems. This prompted the development of the N.E. One Can Stage (NEOCS). Recently this tool was modified and renamed, the NE1 Wound Assessment Tool (NE1 WAT). The purpose of this study is to test the reliability and validity of the NE1 WAT.

Subjects: A sample of convenience of nine physical therapists (PTs) and 11 nurses (RNs) with PrU staging as part of their routine work duties were included in this study.

Methods: A written exam was administered and consisted of assessment questions that the subjects were to answer by using color photographs of 10 wounds. Subjects first completed the exam without exposure to the NE1 WAT, then a second time after an instructional presentation on the tool and its use. Seven to 10 days later, the test was completed for a third time, again with use of the NE1 WAT, without further instruction on use of the tool. Test-retest reliability was analyzed using the intra-class correlation coefficient (ICC), and evidence for validity was assessed using a paired t-test to compare the 1^{st} and 2^{nd} test scores.

Results:

Reliability for all clinicians was ICC (2,1) = .670 (95% CI: .333 to .855). Comparisons for all clinicians between tests 1 (mean=73.05, SD= 9.66) and 2 (mean= 80.85, SD= 11.65) revealed a significant difference between the means, t(19) = -3.640, p=.002.

Discussion:

The NE1 WAT demonstrated moderate reliability and significantly improved the accuracy of PrU staging and wound assessment for subjects.

Conclusion: The NE1 WAT is a reliable and valid tool to improve healthcare clinicians' ability in staging PrUs.

Table of Contents

Introduction

The prevalence (14-17% per year) and incidence (7-9% per year) of pressure ulcers (PrU) in the U.S. between 1999 and 2004 has remained relatively constant among institutionalized individuals in healthcare facilities.[1] It has also been estimated that 1.7 million patients develop PrUs each year with annual treatment costs as high as $11 billion.[2] Additionally, more than 114,000 PrU related deaths were reported between 1990 and 2001.[3] This problem can be attributed to many factors, including improper staging.

A major factor affecting incorrect PrU staging is a lack of sufficient inter-rater reliability of existing PrU staging systems.[4] In a study by Healey[5], use of three classification systems, the Stirling, Torrance, and Surrey, were examined amongst 109 nurses. The study revealed that none of the systems demonstrated a high level of inter-rater reliability. In regards to patient care, a lack of consistency of existing PrU staging systems has been found to reduce the quality of wound care management.[4]

There is also a lack of adequate evidence to support the validity of certain characteristics of existing PrU staging systems in current literature. A study by Andersen and Karlsmark[6] discovered that there is no correlation between PrU staging descriptors such as skin temperature and the actual stage of the wound. The results of this study and of the two previously discussed indicate that a need to establish valid PrU staging tools still exists.

Existing PrU staging methods also lead to low levels of efficiency in the management and care of PrUs. A study by Kottner et al[7] revealed that increasing the number of nurses when staging a PrU does not necessarily improve the quality of

subsequent PrU management. In fact, Kottner et al. discovered that this would actually increase the costs of PrU treatment since multiple nurses are assessing the same PrU.

Despite the many negative aspects associated with existing PrU assessment systems, some studies have discovered that different PrU assessment methods have promising features that may be incorporated into future tools to increase reliability and validity. Photographs of PrU wounds are a recurring characteristic found in many existing PrU tools that show promise in enhancing the quality of the development of prospective classification systems.[8] Clinicians have also reported the helpfulness of photographs of different PrUs at different stages accompanied by descriptors of the wound during the staging of a wound.[9]

As the incidence of PrUs and the subsequent need for accurate staging of PrUs continue to rise, several new systems have been developed to address the strengths and weaknesses of previous methods. Of these recent tools, the N.E. One Can Stage (NEOCS) has shown promising value in improving the accuracy of PrU staging.[10]

Although the NEOCS demonstrated promise in improving PrU staging accuracy, the tool underwent a refining process to improve its visual aesthetics. Following the original study on the reliability and validity of the NEOCS, the tool was modified and renamed the NE1 Wound Assessment Tool (NE1 WAT). As a result of the modifications, reliability and validity of the tool should be reassessed.

The purpose of the NE1 WAT is to improve accuracy of PrU staging, which may facilitate communication amongst healthcare practitioners of varied disciplines by promoting the use of consistent terminology. It may also improve the accuracy of reported data on PrU incidence and prevalence. Subsequently, this may improve care and

decrease healthcare costs. Thus, the purpose of this study is to test the reliability and validity of the NE1 WAT.

Methods

Sample

The subjects for this study were a convenience sample consisting of healthcare providers who have PrU staging as part of their routine work duties. Participants included nine physical therapists (PTs) and 11 nurses (RNs) for a total of 20 subjects. Subjects were recruited from a suburban, acute care hospital in the southwest U.S.

Demographics

Nine participants identified themselves as PTs. In regards to the number of years of clinical experience in assessing wounds, two participants stated having no experience, two with 1 to 3 years of experience, four with 4 to 10 years of experience, and one with 11 to 20 years of experience. One subject holds a Certified Wound Specialist (CWS) certification while seven stated they do not hold any wound care certifications, and one subject did not specify whether or not he/she holds a certification. As for self-assessed level of clinical skills in evaluating human skin integrity, two subjects considered themselves as "Experts." Three PTs rated their skills level as "Good," two as "Fair," and one each as "Poor" and "No skill."

The 11 remaining subjects of this study identified themselves as RNs. In regards to years of experience, three subjects were new graduates, one each having 1 to 3 years of experience and 4 to 10 years of experience, four with 11 to 20 years of experience, and one with 21 or more years of experience. One subject holds a Wound Care Certified (WCC) designation while seven stated they do not hold any wound care certifications, and three subjects did not specify whether or not they hold a certification. In terms of

self-assessed level of clinical skills, three subjects rated their abilities as “Good,” 7 as “Fair,” and 1 as “Poor” (Table 1).

Instrumentation

Several changes were made to the NEOCS to create the NE1 WAT to improve its visual aesthetics. First, the “Healed” classification on the NEOCS has been replaced with a “Closed” wound category accompanied by three different representative photographs, and a “Pre-Stage I” classification has been added to the “Superficial” skin damage area. Second, 6 of the 10 existing PrU photographs on the NEOCS have been updated with higher resolution and more representative photographs. Unlike the NEOCS, Roman numerals were used instead of Arabic numerals in the PrU categories on the NE1 WAT. Additionally, PrU stage criteria descriptors from the NEOCS were rotated clockwise 90° on the NE1 WAT along the vertical edge to make it easier for the clinician to read. Lastly, the background color of the text boxes of stages “Closed” through “Stage III or IV” were removed to allow the text to be more easily read. Of the changes made, only the replacement of Arabic numerals with Roman numerals made the NE1 WAT more harmonious with the staging criteria established by the National Pressure Ulcer Advisory Panel (NPUAP). It is important to note that the terminology used on the NE1 WAT is consistent with the NPUAP staging criteria with the exception of the term “Pre-Stage I.” See Figure 1 for an image of the NE1 WAT.

A 10-minute Microsoft PowerPoint presentation was used in this study to provide instructions to the participants on how to use the NE1 WAT.[10] Each PowerPoint slide was accompanied by a scripted explanation of that slide, including: purpose of the tool,

how the tool is used, and 13 case examples of the tool being applied on color photographs of PrUs and other wounds. See Table 4 for details of the 13 case examples.

A written exam was administered to assess the participants' accuracy of PrU staging before and after their introduction to the NE1 WAT. The exam consisted of 10 brief case studies and an accompanying color photograph of the wound.[10] The test format was multiple-choice and asked participants the same questions for each case regarding staging and assessment of the respective wound. See Figure 2 for details of the exam questions and format.

Of the 10 case studies, 6 depict PrUs and 4 are of other wound types. The photographs in the exam were presented as follows: 1. Right heel, unstageable; 2. Right plantar foot, full thickness; 3. Sacral/Coccyx area, stage II; 4. Right heel, suspected deep tissue injury (sDTI); 5. Perianal area, partial thickness; 6. Left sacral iliac joint area, unstageable; 7. Left lateral ankle, partial thickness; 8. Left heel, stage IV; 9. Left third toe, full thickness; 10. Right hip area, stage III.

Procedures

Procedures of this study were similar to those used in the pilot study on the NEOCS.[10] After IRB approval from the University of Nevada Las Vegas Office of Research Integrity Human Subjects[*], participants were recruited through a hospital administrator. Participant consent was obtained the day of testing prior to test administration and they were allowed to withdraw from the study at any time. Subjects also completed a survey prior to examination regarding the following: their area of discipline, the number of years of clinical experience they have in assessing wounds, if they hold any specialty wound care certifications, and their self-assessed level of their

*UNLV Biomedical IRB protocol #1110-3955

clinical skills in evaluating human skin integrity for pressure related and non-pressure related problems. Participants completed the same exam three different times. First, they completed the exam without any instructions on the NE1 WAT. Immediately following the first test the participants received a brief training presentation on the use of the NE1 WAT and completed the test a second time using the tool. Seven to 10 days after the first two tests, they returned to retake the same exam with the NE1 WAT without any further instructions or reminders on using the tool. Subjects were also instructed not to discuss the tool or test until completion of the final exam. Feedback was withheld from all participants regarding their performance on the exam until the completion of the third test.

Data Analysis Plan

Evidence for the reliability and validity of the NE1 WAT was analyzed using methods based on those used in the pilot study of the NEOCS.[10] Test-retest reliability was assessed using the intra-class correlation coefficient (ICC), comparing results of the second exam to the third exam. Evidence for validity was obtained using a paired t-test to compare scores of the first test to the second test. Reliability and validity was assessed for all PTs and RNs collectively, and for each respective discipline individually, creating two subgroups. Data was analyzed using IBM SPSS Statistics Software Version 19.

Results

Reliability

Test-retest reliability using ICC yielded the following results: PTs and RNs as a group ICC (2,1) = .670 (95% CI: .333 to .855); PTs only ICC (2,1) = .894 (95% CI: .603 to .975); and RNs only ICC (2,1) = .399 (95% CI: .-.229 to .793) (Table 2).

Validity

Exams were scored based upon the number of correct responses for each exam question and converted relative to a 100% score. Scores of the tested clinicians as a group revealed a statistically significant difference between the first test (mean=73.05, SD=9.66) and the second test (mean= 80.85, SD=11.65), t(19) = -3.640, p=.002. Similarly for the PT subgroup, there was a statistically significant difference between the overall scores of the first exam (mean=76.11, SD=11.27) and the second exam (mean=84.00, SD=14.04), t(8) = -2.842, p=.022. A statistically significant difference was also found with the overall scores of the RN subgroup between the first test (mean= 70.55, SD=7.76) and the second test (mean= 78.27, SD=9.12), t(10) = -2.349, p= .041. These findings revealed that when subjects used the NE1 WAT after 10 minutes of instruction, accuracy in PrU staging and wound assessment increased by 7.8%, 7.89%, and 7.72% for the group and subgroups, respectively (Table 3).

Discussion

It is important that the NE1 WAT is able to assist a clinician in accurately assessing a wound consistently. Although slightly lower than the findings of the previous NEOCS study, the NE1 WAT demonstrated moderate reliability for the tested clinicians as a group.[10] This suggests that healthcare clinicians across varied disciplines are still able to obtain results consistently when using the NE1 WAT in PrU staging and wound assessment.

The NE1 WAT also improved the accuracy of PrU staging and wound assessment of all tested clinicians providing evidence for its validity. All groups improved their accuracy in wound assessment when given the tool and instructed on its use for 10 minutes. Feedback on performance was withheld between all three testing conditions, preventing improvement due to performance feedback. Administering test one and two on the same day also controlled for maturation and learning effects that may have influenced the test results. These findings suggest that healthcare clinicians of varied disciplines can improve their clinical skills in PrU staging and wound assessment effectively and efficiently in a small period of time through use of the NE1 WAT and brief training.

Further effects of the validity of the NE1 WAT on healthcare costs should be investigated in the future. Currently, Medicare[11] provides increased payment to acute care facilities for the care of patients with NPUAP Stage III PrUs or greater. If a hospital charges Medicare for the care of a patient with a Stage IV PrU when it was not a Stage IV PrU, fiscal consequences can be significant, including repayment with penalty. Thus, it is critical that acute care facilities are able to evaluate wounds correctly.

In this study, it appears that the NE1 WAT increased PrU staging accuracy by serving as a quick, visual reference. With little time invested, clinicians were able to improve their ability in evaluating wounds correctly. These findings suggest that immediate and positive effects may be expected if facilities incorporate use of the tool. Increased accuracy of wound assessment facilitates proper billing and decreases unnecessary costs. While not tested in this study, increased accuracy with use of the NE1 WAT may guide appropriate treatment selection and thus, may improve care for patients with PrUs and other wounds. Additionally, facilities may also be able to develop more standardized and cost-efficient treatment protocols by using the NE1 WAT.

The two different disciplines of healthcare providers participating in this study allow for an interesting analysis. The NE1 WAT demonstrated high reliability for the tested PTs, and low reliability for the RNs. This was due to a greater variability in scores of the RN subgroup illustrated by the large confidence interval (95% CI: .-.229 to .793). Furthermore, the RN sample was small, consisting of only 11 subjects, which contributed to a large standard deviation for test 2 (SD=9.18) and test 3 (SD=12.04).

In regards to accuracy, the PT subgroup scored higher initially without the NE1 WAT than the RN subgroup. The tested PT subgroup also demonstrated a greater increase in accuracy with use of the tool compared to the RN subgroup. These findings are consistent to those found in the NEOCS study.[10] A possible explanation for these findings is years of clinical experience. In the PT subgroup, only two subjects listed zero years of experience in PrU staging and wound assessment whereas in the RN subgroup, three subjects fell into this group.

The confidence of the tested clinicians in their knowledge of PrU staging and wound assessment may have also contributed to the variability between the subgroups. When asked to self-assess their level of skill in PrU staging and wound assessment on a scale ranging from "Expert" to "No skill," the PT subgroup demonstrated higher levels of confidence in their abilities. Two PTs rated themselves as "Expert," two as "Good," two as "Fair," and only one each as "Poor" and "No skill." Contrastingly, none of the subjects in the RN subgroup rated themselves as "Expert." Four RNs rated their skills as "Good," seven as "Fair," and one as "Poor."

Wound specialty certifications did not appear to impact the subjects' accuracy. Each subgroup had one clinician who holds a wound care specialty certification. However, three RN subjects did not specify whether or not they hold a certification. Based on this data, there is not enough information to conclude that a wound specialty certification will influence a subject's accuracy when using the NE1 WAT.

While attempts were made to minimize limitations, this study was not without constraints. Although the sample size was sufficient to demonstrate power, it was small and all participants were recruited from the same hospital. They may not represent the larger community of PTs and RNs. Additionally, subjects were not randomly selected, as it was a sample of convenience. Furthermore, color photographs were used in this study in place of live patients. Live tissue can provide clues that photographs cannot, which may further guide wound assessment.[10] However, the use of patients with actual PrUs in a study such as this one would be challenging. Despite this limitation, studies have indicated the use of photographs as a useful and valid tool in assessing healthcare clinicians' ability in PrU staging and wound evaluation.[8-9] While being beneficial in

creating a standardized process for evaluating and identifying wound types, the NE1 WAT does not address issues associated with prevention or actual treatment selection of wounds. Future research should assess the effects of the NE1 WAT with a larger sample size on outcomes such as reimbursement and PrU healing as well as efficiency in staging PrU accurately and consistently amongst healthcare staff at different facilities.

Conclusion

The NE1 WAT is a reliable and valid tool to increase different healthcare providers' ability to accurately stage PrUs and distinguish between PrU and other wound types. Clinicians were able to use the tool to obtain results consistently and demonstrated improved accuracy with little time investment in learning how to use the tool. The NE1 WAT demonstrates potential in reducing unnecessary healthcare costs by facilitating proper billing as well as improving care for patients with PrUs and other wound types. Facilities that admit and care for patients with PrUs should consider implementing the use of the NE1 WAT.

Table 1. Demographics by discipline.

Discipline	**Number of years of clinical experience in wound assessment**					
	0	New graduate	1-3	4-10	11-20	≥ 21
PT (n)	2	0	2	4	1	0
RN (n)	0	3	1	1	4	2
	Possession of wound care specialty certification					
	CWS		WCC	None	Not specified	
PT (n)	1		0	7	1	
RN (n)	0		1	7	3	
	Self-assessed level of clinical skills in evaluating human skin integrity					
	Expert	Good	Fair	Poor	No skill	
PT (n)	2	3	2	1	1	
RN (n)	0	3	7	1	0	

Table 2. Test-retest by discipline.

Test-Retest for	n	ICC (2,1)	95% CI
All clinicians	20	0.670	0.333-0.855
PT	9	0.894	0.603-0.975
RN	11	0.399	-0.229-0.793

Table 3. Comparison of percentage correct from test 1 to test 2.

Comparison of percentage correct for	**n**	**Test 1 Mean (SD), %**	**Test 2 Mean (SD), %**	***t* Statistic**	***p***
All clinicians	20	73.05 (9.66)	80.85 (11.65)	$t_{19} = -3.640$	.002
PT	9	76.11 (11.27)	84.00 (14.04)	$t_{8} = -2.842$	.022
RN	11	70.55 (7.76)	78.27 (9.12)	$t_{10} = -2.349$	.041

Table 4. 13 case examples from NE1 WAT instructional presentation.

Case Number	Location	Wound Type	Wound Stage
1	Left heel	PrU	Unstageable
2	Sacrum	PrU	III
3	Right heel	PrU	sDTI*
4	Right heel	PrU	sDTI*
5	Sacrum	Other	Full thickness
6	Right hip	PrU	IV
7	Chest	Other	Full thickness
8	Right heel	PrU	II
9	Perineal	Other	Partial thickness
10	Right plantar foot	Other	Partial thickness
11	Right heel	PrU	Pre-Stage I
12	Left arm	Other	Closed
13	Left thigh	Other	Closed

*Suspected deep tissue injury (sDTI)

Figure 1. Image of NE1 WAT.

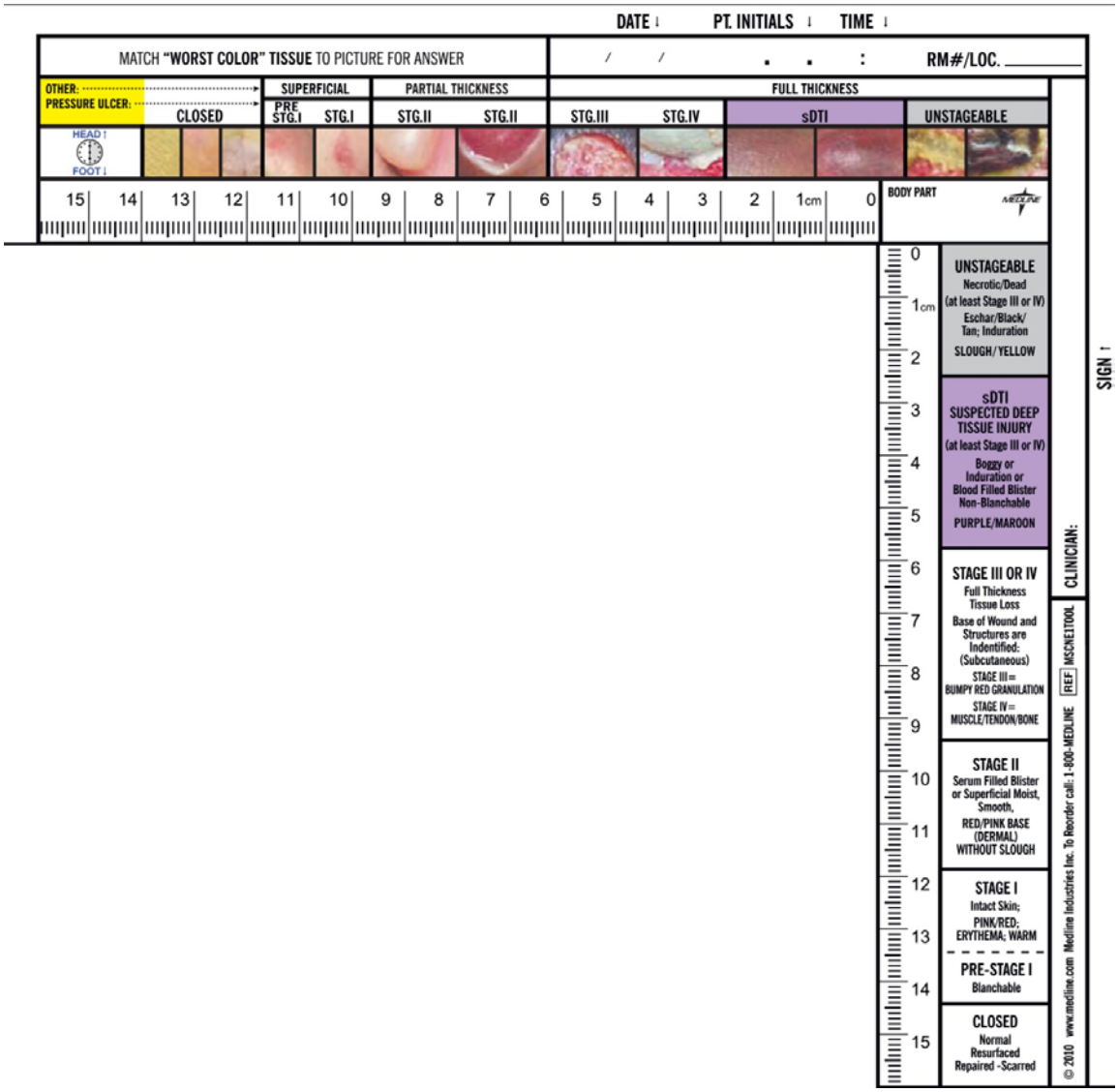

Figure 2. NE1 WAT exam questions and format.

For each picture, please choose the **worst** tissue color, define the wound type, and stage or describe the wound.

Picture 1

Worst tissue color: □ Black (worst) □ Yellow □ Purple □ Red □ Pink □ Normal (best)

Wound type: □ **Pressure Ulcer** □ **Other**

If **pressure ulcer**, stage:

□ Healed □ Stage 1 □ Stage 2 □ Stage 3 □ Stage 4 □ Deep tissue injury □ Unstageable

OR

If **other,** describe: □ Superficial □ Partial thickness □ Full thickness

References

1. Whittington KT, Briones R. National prevalence and incidence study: 6-year sequential acute care data. *Adv Skin Wound Care*. 2004;17:490-4.
2. Kuhn B, Coulter S. Balancing the pressure ulcer cost and quality equation. *Nursing Economics*. 1992;10:353-359.
3. Redelings M, Lee N, Sorvillo F. Pressure ulcers: more lethal than we thought? *Adv Skin Wound Care*. 2005;18:367-72.
4. Dealey C, Lindholm C. Pressure ulcer classification. In: Romanelli M ed. *Science and Practice of Pressure Ulcer Management*. London: Springer; 2006:37-41.
5. Healey F. The reliability and utility of pressure sore grading scales. *J Tissue iability*. 1995;5:111-114.
6. Andersen ES, Karlsmark T. Evaluation of four non-invasive methods for examination and characterization of pressure ulcers. *Skin Research and Technology*. 2008;14:270-276.
7. Kottner J, Tannen A, Dassen T. Hospital pressure ulcer prevalence and number of raters. *J Clin Nurs*. 2009;18:1550-1556.
8. Defloor T, Schoonhoven L. Inter-rater reliability of the EPUAP pressure ulcer classification system using photographs. *J Clin Nurs*. 2004;13:952-959.
9. Bergquist-Beringer S, Davidson J, Agosto C, et al. Evaluation of the National Database of Nursing Quality Indicators (NDNQI) training program on pressure ulcers. *J of Cont Ed in Nurs*. 2009;40:252-60,279.
10. Young D, Estocado N, Landers M, Black J. A pilot study providing evidence for the validity of a new tool to improve assignment of national pressure ulcer advisory panel stage to pressure ulcers. *Adv Skin Wound Care*. 2011;24:168-175.
11. Overview hospital-acquired conditions (present on admission indicator). http://www.cms.hhs.gov/HospitalAcqCond/01_Overview.asp. Last accessed January 10, 2013.

Stephanie Coon
1163 Lake Berryessa Street, Henderson, NV 89002
(702) 325-9286 ● s.mcgovern86@gmail.com

Licensure:
Nevada State Board of Physical Therapy Examiners

- License pending exam April 2013

Education:
University of Nevada, Las Vegas (June 2010-May 2013)

- Doctor of Physical Therapy (DPT)

University of Nevada, Las Vegas (Sept 2005-Dec 2009)

- Bachelor of Science, Kinesiological Sciences, 2009

University of Nevada, Reno (Sept 2004- May 2005)

- Health Ecology

Professional Experience:
Physical therapist technician, TRU Physical Therapy, Henderson, NV (May 2008-Jun 2010)

Physical therapist technician, Keith Kleven Institute, Las Vegas, NV (June 2006-Dec 2007)

Clinical Internships:
Boulder City Hospital Outpatient/Inpatient/SNF, Boulder City, NV (Feb-April 2013)

Tim Soder Physical Therapy and Sports Rehabilitation, Henderson, NV (Jan 2012-Feb 2013)

Mountain View Hospital Acute Inpatient, Las Vegas, NV (Sep-Dec 2012)

St. Rose De Lima Acute Rehabilitation, Henderson, NV (July-Sep 2012)

Concentra Physical Therapy, Las Vegas, NV (June-Aug 2011)

Research Experience
UNLV DPT Mentored Group Research Project, Student Investigator

- Testing the validity and reliability of a wound care assessment tool that stages pressure ulcers

Professional Achievement/ Certifications:

- **APTA and NPTA chapter member since 2010**
- **Cardiopulmonary Resuscitation 2007- expires 2014**

FAUSTINA TRAN
4481 Wisconsin Avenue
Las Vegas, NV 89104
(702) 588-3818
faustina.tran@gmail.com

EDUCATION

University of Nevada, Las Vegas
Doctor of Physical Therapy ♦ May 2013

University of Nevada, Las Vegas
Bachelor of Science Kinesiological Sciences ♦ May 2010
Magna Cum Laude ♦ University Honors ♦ Phi Kappa Phi Scholar

CLINICAL EXPERIENCE

SPT, Physiotherapy Associates, Children's Therapy Center
Henderson, NV
Feb 2013-April 2013 ♦ Outpatient Pediatric Rehabilitation

SPT, Summerlin Hospital Medical Center
Las Vegas, NV
Jan 2013-Feb 2013 ♦ Outpatient Pediatric Rehabilitation

SPT, HealthSouth Desert Canyon Rehabilitation Hospital
Las Vegas, NV
Oct 2012-Dec 2012 ♦ Inpatient Rehabilitation

SPT, Mountain View Hospital
Las Vegas, NV
July 2012-Sept 2012 ♦ Inpatient Acute Care ♦ Wound Care

SPT, Mike O'Callaghan Federal Medical Center
Nellis Air Force Base, NV
June 2011-July 2011 ♦ Outpatient Rehabilitation

RESEARCH EXPERIENCE

Student Co-Investigator, Mentored Group Research
Reliability and validity of the NE1 Wound Assessment Tool

LEADERSHIP EXPERIENCE

UNLV Doctor of Physical Therapy Program Class of 2013
Class President (2010-2013)

Lambda Kappa Delta the Pre-PT Honor Society
Mentor (Present) ♦ President (2010) ♦ Founder (2009)

PROFESSIONAL MEMBERSHIP

American Physical Therapy Association (APTA)
Member since 2010 ♦ Research Section

Nevada Physical Therapy Association (NPTA)
Member since 2010

CONTINUING EDUCATION

Explain Pain, UNLV Department of PT, Las Vegas, Nevada
Feb 2012 ♦ By Adriaan Louw, PT, M.App.Sc, GCRM

Combined Sections Meeting, APTA, New Orleans, Louisiana
Feb 2011 ♦ Student Assembly

Melinda L Vicencio

Contact Information

Address: 38 Reno, Rd
Ely, NV 89301

Email: melinda13579@yahoo.com

Phone: (775) 781-0820

Relevant Experience

Clinical Rotations

Summit Physical Therapy, Ely, NV
Jan-April 2013

Dallas Children's Medical Center, Dallas, TX
Oct.-Dec 2012

Olsson Physical Therapy, Grand Junction, CO
July-Oct. 2012

Island Hospital, Anacortes, WA
June-July 2011

Physical Therapy Tech. *Jan. 2010-May 2010*

Rehab Services of Northern Nevada, Winnemucca, NV

Private Aide *Feb. 2009- May 2009*

Helen Turman, Reno, NV

Private Aide *Aug. 2008-Jan. 2009*

Bill and Gloria Walker, Reno, NV

Rehab Therapy Aide *Nov. 2005-May 2009*

Saint Mary's Regional Medical Center, Reno, NV

Education

Doctor of Physical Therapy *May 2010-(May 2013)*

- University of Nevada, Las Vegas

B.S. in Health Ecology *Aug. 2004-May 2009*

- University of Nevada, Reno

Professional Memberships

American Physical Therapy Association

- Research Section
- Pediatrics Section
- Private Practice
- Student Special Interest Group

Nevada Physical Therapy Association

Licensure

- Nevada State Board of Physical Therapy Examiners
  Pending Exam July 2013

Research Experience

- ***University of Nevada, Las Vegas***
  Reliability and Validity of NE1 Wound Assessment Tool (WAT)
  Student Co-Investigator, Mentored Research Project