



**HAL**  
open science

## **Evaluating self-reported pressure ulcer prevention measures in persons with spinal cord injury using the revised Skin Management Needs Assessment Checklist: reliability study.**

Anthony Gélis, Jean-Pierre Daures, Charles Benaim, Paul Kennedy, Thierry Albert, Denis Colin, Pierre-Alain Joseph, Jacques Pelissier, Charles Fattal

### ► To cite this version:

Anthony Gélis, Jean-Pierre Daures, Charles Benaim, Paul Kennedy, Thierry Albert, et al.. Evaluating self-reported pressure ulcer prevention measures in persons with spinal cord injury using the revised Skin Management Needs Assessment Checklist: reliability study.. Archives of Physical Medicine and Rehabilitation, 2011, 49 (5), pp.653-8. 10.1038/sc.2010.177 . hal-00702066v2

**HAL Id: hal-00702066**

**<https://hal-univ-bourgogne.archives-ouvertes.fr/hal-00702066v2>**

Submitted on 30 May 2012

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Table 1 : Back-translation Cycles. Values are mean scores. The item translation is validated if comparability of language mean score  $<3$  or similarity of interpretation mean score  $<2,5$ .

	Items	First back-translation Cycle		Second Back-translation Cycle	
		Comparability of language	Similarity of interpretation	Comparability of language	Similarity of interpretation
Skin Checks	1	1	1	-	-
	2	2	1	-	-
	3	1.66	1.83	-	-
	4	3.66	3.66	1.66	1
Preventing pressure ulcer	1	2.16	2.16	-	-
	2	2	1.83	-	-
	3	4.33	4.5	2.16	1.83
	4	4.16	4.16	2	1.66
Preventing wounds	1	1.66	1.5	-	-
	2	2	2	-	-
	3	3.83	4	2.16	1.66
	4	3.5	3.66	2.66	2.33

Table 2 : clinical and demographics characteristics of the persons with SCI included in the study (N=138)

Characteristics	Total (N=138)
<b>Demographics</b>	
Age (year)	45.9 ± 14.9 (E:19-82)
Sex	
Men	103 (75)
Women	35 (25)
Weight (kg)	70.4 ± 14 (E: 37-114)
Height (m)	1.73 ± 0.09 (E : 150-197)
BMI (kg.m <sup>-2</sup> )	23.9 ± 3,7
<b>Lesion characteristics</b>	
Age at the time of the injury (yrs)	38 ± 16 (E:10-82)
Age of the injury (month)	94 ± 127 (E : 1-696)
ASIA Score	
A	83 (60)
B	16 (11,5)
C	15 (11)
D	14 (10)
Lesion level	
Cervical	49 (36)
Upper and lower back	89 (64)
Etiology	
Traumatic	112 (81)
Medical	26 (19)
<b>Skin characteristics</b>	
Braden (6-23)	15.8 ± 3 (9-23)
Pressure Ulcer	
Number	
0	91(66)
1	35 (25)
2	7 (5)
3	4 (3)
Location	
Sacrum	23 (50)
Ischium	11 (24)
Heel	4 (9)
Trochanter	3(6)
Others	5 (10)
Stage (NPUAP)	
1	6 (13)
2	11 (24)
3	17 (37)
4	13 (28)

The results are presented in Mean ± Standard-deviation or N (%)

ASIA : American Spinal Injury Association

NPUAP : National Pressure Advisory Panel 2007

**Table 3** : Global reproducibility and reproducibility per Center for the revised SMnac and its subscores.

Reliability ICCI%)	N	Skin Checks	Preventing pressure ulcers	Preventing Skin insults	Total
Global	138	0.879 (0.836 ; 0.912)	0.872 (0.826 ; 0.907)	0.775 (0.699 ; 0.83)	0.899 (0.862 ; 0.927)
Per center					
Center 1	16	0.702 (0.351 ; 0.880)	0.801 (0.545 ; 0.92)	0.701 (0.348 ; 0.88)	0.857 (0.656 ; 0.945)
Center 2	24	0.896 (0.779 ; 0.953)	0.837 (0.665 ; 0.925)	0.677 (0.393 ; 0.843)	0.867 (0.722 ; 0.939)
Center 3	13	0.989 (0.966 ; 0.997)	0.984 (0.950 ; 0.995)	0.982 (0.949 ; 0.995)	0.989 (0.969 ; 0.996)
Center 4	25	0.936 (0.864 ; 0.971)	0.892 (0.775 ; 0.950)	0.626 (0.324 ; 0.813)	0.903 (0.797 ; 0.955)
Center 5	35	0.780 (0.611 ; 0.881)	0.848 (0.724 ; 0.919)	0.750 (0.563 ; 0.864)	0.864 (0.752 ; 0.928)
Center 6	25	0.882 (0.756 ; 0.945)	0.85 (0.704 ; 0.926)	0.806 (0.624 ; 0.905)	0.885 (0.768 ; 0.944)

ICC :Intraclass correlation coefficients, CI :confidence interval

Table 4 : test – retest reliability of the items for the revised SMnac (weighted kappa coefficient)

SMnac Categories	Items for each category										
	1	2	3	4	5	6	7	8	9	10	11
Skin	0.91	0.74	0.66	0.74	-	-	-	-	-	-	-
Checks											
Preventing Wounds	0.58	0.60	0.54	0.50	-	-	-	-	-	-	-
Preventing pressure ulcer	0.64	0.60	0.57	0.47	0.71	0.60	0.61	0.62	0.70	0.50	0.58