Biomedical Sciences and Clinical Medicine 2025;64(1):73-80.
doi: 10.12982/BSCM.2025.05
https://he01.tci-thaijo.org/index.php/CMMJ-MedCMJ/index

Original Article

Open Access

Validity and Internal Consistency of the Thai Version of a Revised Skin Management Needs Assessment Checklist in People with Spinal Cord Injury: Initial psychometric studies

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Received: April 25, 2024;
Revised: September 29, 2024;
Accepted: October 9, 2024

ABSTRACT

OBJECTIVE This study aims to cross-culturally translate the revised Skin Management Needs Assessment Checklist (revised SMnac) into Thai (revised SMnac-TH), to evaluate its content validity and internal consistency and to determine the relationship between the revised SMnac-TH score and the occurrence of pressure injuries.

METHODS The study design is a descriptive cross-sectional study. It was conducted at the Inpatient and Outpatient Rehabilitation Medicine Department of Maharaj Nakorn Chiang Mai Hospital, involving one hundred twenty-five Thai people age > 18 years old with spinal cord injury. The French version of the revised SMnac was translated into Thai following the standard guidelines for translation and cross-cultural adaptation. The content validity was evaluated by six experts in rehabilitation medicine. Each of the participants completed the revised SMnac-TH. The internal consistency was measured using Cronbach's alpha coefficient. Logistic regression analysis was used to evaluate the relationship between the revised SMnac-TH score and the occurrence of pressure injuries.

RESULTS The index of item-objective congruence (IOC) of each item ranged from 0.83-1.00. The Cronbach's alpha coefficient of the questionnaire was 0.923. The logistic regression analysis showed no correlation between the revised SMnac-TH score and the occurrence of pressure injuries.

CONCLUSIONS The revised SMnac-TH demonstrated high content validity and internal consistency. It proves to be a useful tool for evaluating pressure injury-related knowledge and skin protective behaviors among Thai individuals with spinal cord injury.

KEYWORDS pressure injury, spinal cord injury, patient education

INTRODUCTION

Pressure injuries represent a significant clinical challenge for individuals with spinal cord injury (SCI) globally (1). The prevalence of pressure injuries among Thai people with SCI is noteworthy. The cross-sectional survey conducted in Chiang Mai in 2003 by Wilekha et al. reported that 80% of 142 individuals with chronic SCI living in the community had experienced a pressure injury at least once (2). A 2015 cross-sectional study by Kovindha et al. in Chiang Mai, found that 26.4% of 129 Thai individuals with chronic SCI who used

wheelchairs had pressure injuries at the time of the study (3). Similarly, in a recent study by Poolpipat et al. conducted in Nakhon Ratchasima, a prevalence of pressure injuries of 29.3% was reported (4). Pressure injuries can lead to deteriorating health conditions, ultimately impacting quality of life and independence (5).

In addition to motor and sensory impairments, individuals with SCI are prone to several conditions that increase the risk of pressure injuries, e.g., prolonged immobility, malnutrition, autonomic dysreflexia, spasticity, incontinence, sarcopenia and skin changes (6, 7). The study by Poolpipat et al. which examined factors associated with pressure injuries in Thai individuals with SCI who use a wheelchair independently found that friction and shear forces from improper transferring and prolonged sitting are significant factors that increase the risk of pressure injuries (4). The study by Silva et al. on the risk factors for pressure injuries in adults with SCI undergoing neurological rehabilitation reported that while some risk factors are non-modifiable, e.g., advanced age, longer time since injury, and a complete lesion, are also modifiable risk factors. For example, smokers are three times more likely to develop pressure injuries compared to non-smokers. Additionally, nonadherence to preventive behaviors, such as pressure relief actions and prolonged wheelchair sitting, increases the risk of developing pressure injuries (8). The self-management and prevention strategies for pressure injuries in people with SCI primarily focus on avoiding or redistributing mechanical factors such as pressure, shear, and friction, using appropriate support surfaces such as seat cushions and mattresses, managing modifiable risk factors, maintaining proper nutrition, and adopting skin protective behaviors (9). These skin management and prevention strategies are integrated into patient education and training during rehabilitation programs.

The Spinal cord injury Research Evidence (SCIRE) Professional, which compiles current SCI evidence and resources, provides tools for assessing pressure injuries. Most of these tools are designed to assess the risk of pressure injury development, such as the Braden Scale, Spinal Cord Injury Pressure Ulcer Scale (SCIPUS) and the Waterlow Pressure Ulcer Scale (10). The Skin Management Needs Assessment Checklist (SMnac), derived from the Needs Assessment Checklist, was developed in 2004 by Paul Kennedy and colleagues (11). It has been reviewed as the only tool specifically for assessing knowledge and ability to perform skin checks, pressure relief, and prevention of skin breakdown (10). The SMnac has demonstrated high internal consistency and sensitivity to change (11).

In 2011, Anthony Gélis and colleagues translated and adapted the SMnac into French, resulting in a revised version (12). This self-administered questionnaire is comprised of a total of 20 questions, with the first question asking whether the individual has a mirror for skin inspection. The remaining 19 questions are divided into three domains: skin checks (4 items), preventing pressure injuries (11 items), and preventing wounds (4 items). Each item is scored from 0 to 3 (0 = completely dependent, never does; 3 = completely independent, always does or instructs someone to do). The total score is expressed as a percentage, with a higher score indicating better knowledge of pressure injuries and better adherence to skin protective behaviors. The revised SMnac has exhibited good internal consistency, validity, and reliability, making it a valuable tool for assessing knowledge and skin protective behaviors after individuals with SCI have been educated on skin management to prevent pressure injuries (9, 12). The revised SMnac has recently been translated into a Malay version (13), but no Thai translation of the revised SMnac has been reported.

The aims of this study are to translate and cross-culturally adapt the French version of the revised SMnac into the Thai language, to evaluate its content validity and internal consistency, and to determine the relationship between revised SMnac-TH scores and the occurrence of pressure injuries.

METHODS

This study protocol was approved by the institutional Ethics Committee of the Faculty of Medicine, Chiang Mai University, study code: REH-2564-08267.

Participants

The sample size was calculated using the Bonett method to assess internal consistency using Microsoft Excel, resulting in 125 subjects

(14). One hundred twenty-five Thai inpatients and outpatients with traumatic or non-traumatic SCI who visited Department of Rehabilitation Medicine at Maharaj Nakorn Chiang Mai Hospital between August 2021 and October 2022 were recruited. The inclusion criteria included age 18 or older, proficiency in the Thai language and the ability to read independently. Individuals with severe cognitive impairment or severe mental disorders were excluded.

Development of the revised SMnac-TH

Translation and cross-cultural adaptation process

Permission for translation was granted by Dr. Anthony Gélis via electronic mail. The translation process was conducted in accordance with the guidelines proposed by Beaton et al. (15).

Forward translation: The French version of the revised SMnac was independently translated into two draft versions of the revised SMnac-TH by two linguistic experts from the Humanities Academic Service Center, Chiang Mai University. Subsequently, the authors analyzed the items in each draft version and synthesized them into a single draft version of revised SMnac-TH.

Backward translation: Two back-translations were independently conducted by two native French speakers who were proficient in the Thai language. Neither of the translators were health professionals and they were unaware of the original version of the revised SMnac. These versions were sent to Dr. Anthony Gélis for review and feedback. After receiving feedback and suggestions, the initial draft of the SMnac-TH was modified into the prefinal version of the revised SMnac-TH.

Evaluation of content validity of the revised SMnac-TH

The pre-final version of the revised SMnac-TH was tested for content validity by six experts in rehabilitation medicine. Each expert rated each of the items on a scale of +1 for clearly measuring the objective, -1 for clearly not measuring the objective, or 0 for an unclear degree of congruence with the content area (16). The index of item-objective congruence (IOC) was calculated by dividing the total score for each item by 6. An IOC value of 0.7 or higher was considered acceptable (17).

Pilot study

Twenty Thai individuals with SCI completed the pre-final version of the revised SMnac-TH to identify any confusion or misunderstandings (18). Subsequently, adjustments were made to simplify the questionnaire's usage and to enhance understanding. The final versions of the SMnac-TH, in both Thai and English, are provided in the Supplementary appendix.

Data collection

After providing written informed consent, participants completed the revised SMnac-TH. If they encountered difficulties with writing, they were allowed to receive assistance. Demographic data, lesion characteristics, and information regarding pressure injuries were collected from medical records and interviews. The data were recorded using the International SCI Core Data Set version 3.0 (19).

Statistical analysis

All statistical analyses were preformed using SPSS version 22.0. Descriptive statistics were used to report the characteristics of the study population. Frequency and percentage were used to describe categorical variables, mean and standard deviation (SD) for normally distributed numerical variables, and median with interquartile range (IQR) for non-normally distributed numerical variables.

The IOC was used to evaluate the content validity of the questionnaire. An acceptable IOC value for each item was 0.7 or greater (17). The internal consistency was assessed using Cronbach's alpha coefficients. Values of 0.7 or higher were considered adequate (20). Logistic regression analysis was performed to assess the relationship between the revised SMnac-TH score and the occurrence of pressure injuries. This involved categorizing participants into one of two groups: those with pressure injury or history of pressure injury within the past 12 months, and those without any history of pressure injury. The odds ratio was determined using the Wald test. Odds ratios close to 1 or exactly 1 and a p-value greater than 0.05 suggested that the score was not statistically significantly related to the occurrence of pressure injuries.

RESULTS

Characteristic of the study population

One hundred twenty-five individuals with traumatic or non-traumatic SCI were enrolled. Most participants were male (86/ 125, 68.8%).

The majority were paraplegia with ASIA (American Spinal Injury Association) Impairment Scale (AIS) group A, B, or C (76/125, 60.8%). Eighteen participants (14.4%) had pressure injury at the time of the study, and 22 (17.6%) participants had had pressure injury within the past 12 months. The characteristics of the study population are presented in Table 1.

Table 1. Characteristics of the study population

Sociodemographic	n (%)
Gender	
Male	86 (68.8)
Female	39 (31.2)
Age group	
18-29 years	15 (12.0)
30-59 years	81 (64.8)
> 60 years	29 (23.2)
Education level	
Primary school or below	41 (32.8)
Secondary school	59 (47.2)
College or above	25 (20.0)
Lesion characteristics	
Time since injury (years)	
< 1	24 (19.2)
1–4	23 (18.4)
5–9	21 (16.8)
10–14	19 (15.2)
≥ 15	38 (30.4)
Etiology of SCI	
Traumatic	106 (84.8)
Non-traumatic	19 (15.2)
Severity of SCI	
C1–4 AIS A, B and C	4 (3.2)
C5–8 AIS A, B and C	26 (20.8)
T1–S3 AIS A, B, and C	76 (60.8)
AIS D at any NLI	19 (15.2)
Lesion	
Complete SCI	72 (57.6)
Incomplete SCI	53 (42.4)
Pressure injury	
Absence of pressure injury	107 (85.6)
Presence of pressure injury	18 (14.4)
History of pressure injury in the past 12 months	22 (17.6)
Absence of pressure injury	14 (63.6)
Presence of pressure injury	8 (36.4)
Site	
Sacral	11 (61.1)
Ischial tuberosity	5 (27.7)
Heel	1 (5.6)
Trochanter	1 (5.6)

SCI, spinal cord injury; ASIA, American Spinal Injury Association; AIS, ASIA Impairment Scale, NLI, neurological level of injury

Translation and cross-cultural adaptation into the revised SMnac-TH

The draft version of the revised SMnac-TH underwent three revisions, finally resulting in IOC values of 0.83-1.00 for each item, indicating acceptable content validity of the questionnaire. The IOC for each item is shown in Table 2. In the pilot study, participants reported that the revised SMnac-TH version was easy to understand for most items. However, there were some areas of confusion due to translation and cultural differences. Adjustments were made by altering the words used and subdividing items 3, 12, and 15 into two sub-items to simplify the revised SMnac-TH.

The revised SMnac-TH

The revised SMnac-TH comprised 20 main items, with items 3, 12, and 15 each containing 2 sub-items, resulting in a total of 23 items. Item 1 inquired whether the individual had a mirror for skin inspection, while the remaining 22 items were distributed across three domains:

1. Skin Checks (5 items, 15 points)
2. Preventing Pressure Injuries (13 items, 36 points)
3. Preventing Wounds (4 items, 12 points)

The total score ranged from 0 to 63, with a higher score indicating better knowledge of and skin management behaviors for preventing pressure injuries.

Psychometric properties of the revised SMnac-TH

In terms of internal consistency assessment, it was found that the Cronbach's alpha value was 0.923. For the logistic regression analysis, the participants were divided into two groups: those with pressure injury or a history of pressure injury within the past 12 months, and those without any history of pressure injury. A higher score on the revised SMnac-TH indicated a greater knowledge of pressure injury prevention and adherence to skin management behaviors. The study had an odds ratio of 0.99 (p = 0.80), suggesting that the scores were not significantly associated with the occurrence of pressure injuries. Additionally, there was no statistically significant difference in mean scores between the two groups of participants (p = 0.799) as shown in Table 3.

Table 2. Index of item-objective congruence (IOC)

Item number	First time	Second time	Third time
1	0.67	0.67	0.83
2	0.67	1.00	-
3	0.50	0.83	-
4	0.67	0.67	0.83
5	0.50	1.00	-
6	1.00	-	-
7	1.00	-	-
8	0.83	-	-
9	1.00	-	-
10	1.00	-	-
11	1.00	-	-
12	0.83	-	-
13	1.00	-	-
14	1.00	-	-
15	0.83	-	-
16	0.83	-	-
17	0.83	-	-
18	0.83	-	-
19	0.83	-	-
20	0.83	-	-

DISCUSSION

In the process of translation and cross-cultural adaptation, discrepancies were identified between the forward-translated and backward- translated versions. Most of the disparities were found to be in translations where linguistic experts adhered to the literal meaning of the words that did not convey the medical meanings. The language was adjusted to ensure appropriateness and accuracy in medical contexts, e.g., substituting the word "รูเปิด" (open hole) with "แผลเปิด" (open wound). the authors further adapted the questionnaire by adding sub-items to items 3, 12, and 15. The details and rationale for these modifications are presented in Table 4.

This study examined the content validity and internal consistency of the revised SMnac-TH questionnaire. Results revealed that each question demonstrated an IOC value of greater than 0.7, indicating good content validity. Additionally, Cronbach's alpha coefficient had a value of 0.923, which exceeds 0.7, suggesting high reliability in terms of the internal consistency of the questionnaire. This finding is comparable to the study of the French version of revised SMnac by Anthony Gélis, et al. which found a Cronbach's alpha coefficient of 0.907 (9) and the study of the Malay version of the revised SMnac which showed a Cronbach's alpha coefficient of 0.994 (13). Thus, it can be inferred that the revised SMnac questionnaire in both Thai and other languages demonstrated a high level of reliability.

The logistic regression analysis found that the total scores of the questionnaire were not associated with the occurrence of pressure injuries. Therefore, the total scores of the questionnaire cannot predict whether pressure injury will occur or not. This aligns with the study by Groah et al. which evaluated factors affecting pressure injury occurrence in spinal cord injury individuals and found that pressure injury occurrence was related to various factors, not solely based on knowledge of or adherence to skin management behaviors (21). Similarly, studies in Thailand found that prior knowledge about pressure injuries did not exhibit a statistically significant correlation with the presence or absence of pressure injuries (2, 4). However, patient education was shown to have a significant impact on skin management ability (7). High total scores of the revised SMnac indicates that individuals have knowledge of and adhere to pressure injury prevention protocols. Therefore, the revised SMnac is suitable for assessing an individual's knowledge of and adherence to preventive behaviors after receiving education about pressure injuries or before discharge from

Table 3. Average total scores between the group with pressure injury or a history of having pressure injury in the past twelve months and the group without pressure injury

	Group with pressure injury or a history of pressure injury (n)	Group without pressure injury (n)	*p*-value
Total Scores (mean ± 2SD)	33.53±12.994 (32)	34.23±13.376 (93)	0.799[t]

[t], student t-test; SD, standard deviation

Table 4. Item adaptations and rationale

The French version revised SMnac	The Thai version revised SMnac	Rationale for adaptation
3. *Savez-vous quoi rechercher et où regarder*? (3. Do you know what to look for and where to look?)	3.1 ท่านรู้หรือไม่ว่าต้องดูผิวหนังบริเวณไหน (3.1 Do you know which areas of the skin to examine?) 3.2 ท่านรู้หรือไม่ว่าต้องมองหาความผิดปกติอะไร (3.2 Do you know what abnormalities to look for?)	The French version consisted of two questions in one item, which might cause confusion and lead to erroneous responses. Therefore, the authors divided these items into two sub-items (3.1, 3.2) to make it more convenient for individuals to choose their answers.
12. *Savez vous contrôler la qualité de gonflage de votre coussin*? (12. Do you know how to check the condition of your seat cushion?)	12.1 ท่านใช้เบาะรองนั่ง (เบาะลม เบาะโฟม หรือเบาะชนิดอื่น) หรือไม่ (12.1 Do you use a seat cushion (air cushion, foam cushion, or other types)?) 12.2 ท่านรู้วิธีตรวจสอบสภาพเบาะรองนั่งหรือไม่ (12.2 Do you know how to check the condition of the seat cushion?)	The authors added a sub-item to item 12 regarding the use of seat cushions, asking whether the respondent had used a seat cushion or not, without scoring the sub-item 12.1. If a seat cushion had been used, then the respondent proceeded to the next sub-item (12.2) which asked whether the individual knew how to check the cushion. In cases where the individual had not used a seat cushion, they might not be aware of how to assess its condition. The score for sub-item 12.2 for individuals without a seat cushion would be 0.
15. *Positionnez vous vos oreillers correctement dans votre lit (seul ou avec l'aide d'un tiers**)? (15. Do you position your pillows correctly in your bed (by yourself or with assistance*)?)	15.1 ท่านรู้วิธีจัดท่านอนบนเตียงโดยใช้หมอนวางตำแหน่งที่ถูกต้องเพื่อป้องกันแผลกดทับหรือไม่ (15.1 Do you know how to position yourself in bed using pillows correctly to prevent pressure injuries?) 15.2 ท่านได้จัดท่านอนดังข้อ 15.1 หรือไม่ (ทำเองหรือมีคนช่วย*) (15.2 Have you positioned yourself in bed as described in item 15.1 (by yourself or with assistance*)?)	The original version consisted of two questions in one item, which might cause confusion and lead to erroneous responses. Therefore, the authors divided these items into two sub-items (15.1, 15.2) to make it more convenient for individuals to choose their answers.

Revised SMnac, Revised Skin Management Needs Assessement Checklist

the hospital to review understanding and can also be used for long-term assessment of individuals with SCI.

Limitations

Limitations of this study include that, in the questionnaire when respondents were asked whether they knew something or not, their responses were not verified by medical personnel regarding the accuracy of their knowledge. Therefore, it would be beneficial if individuals could provide clearer and more detailed descriptions in their answers. Furthermore, this study did not assess the test-retest reliability due to time limitations in scheduling repeat questionnaire completions with the participants because of time constraints imposed by the COVID-19 situation. In the future, it may be necessary to assess reliability through test-retest methods and it may also be necessary study the responsiveness of the revised SMnac-TH questionnaire. Additionally, it may be useful to investigate the relationship between various factors of spinal cord injured individuals that could potentially affect the scores of the revised SMnac-TH for use in planning, education and monitoring of skin management and pressure injury prevention in each spinal cord injured individual appropriately.

CONCLUSIONS

The Thai version of revised Skin Management Needs Assessment Checklist (SMnac-TH) has high content validity and internal consistency. It is a useful tool for assessing pressure injury related knowledge and skin protective behaviors among Thai people with spinal cord injury.

ACKNOWLEDGEMENTS

The authors would like to acknowledge Assoc. Prof. Dr. Pacharee Sudasna, Assoc. Prof. Dr. Supaporn Apavacharut, Mr. Jean-Claude Neveu, and Mr. Rathisak Phansavath for translating the revised SMnac; Assoc. Prof. Jakkrit Klaphajone, MD, Assoc. Prof. Montana Buntragulpoontawee, MD, Assoc. Prof. Sintip Pattanakuhar, MD, PhD, Asst. Prof. Pratchayapon Kammuang-lue, MD, and Pimthong Jitsakulchaidej, MD for evaluating the content validity of the questionnaire; and Ms. Rodchana Phueakchantuek for providing statistical advice.

FUNDING

This study was funded by a grant from the Faculty of Medicine, Chiang Mai University (grant no. 045/2565)

CONFLICT OF INTEREST

The authors have no conflict of interest to report.

ADDITIONAL INFORMATION

Author contributions

C.S., P.P., and S.T.: designed the research questions and methodology; C.S. and P.P.: collected the data; C.S., P.P., and S.T.: analyzed the data and drafted the manuscript; C.S.: wrote the final version of the manuscript; S.T.: provided feedback on the final version.

Supplementary materials

The following supporting information can be downloaded at: Supplementary appendix

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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แบบสอบถามเกี่ยวกับการดูแลผิวหนังของผู้ป่วยบาดเจ็บไขสันหลังฉบับปรับปรุง ฉบับภาษาไทย

โปรดทำเครื่องหมาย ✓ ตามความเห็นของท่าน

การดูแลผิวหนัง

1 **ท่านมีกระจกเงาบานเล็กสำหรับสำรวจผิวหนังหรือไม่** ☐ ไม่มี ☐ มี

การตรวจสอบสภาพผิวหนัง

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2 **ท่านรู้วิธีสำรวจผิวหนังของท่านโดยใช้กระจกเงาหรือไม่**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

3.1 **ท่านรู้หรือไม่ว่าต้องดูผิวหนังบริเวณไหน**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

3.2 **ท่านรู้หรือไม่ว่าต้องมองหาความผิดปกติอะไร**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

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4 **ท่านรู้วิธีคลำผิวหนังเพื่อตรวจหาแผลกดทับชนิดที่ไม่เป็นแผลเปิดหรือไม่**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

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5 **ท่านตรวจสอบสภาพผิวหนัง ตามที่ได้สอนดังข้อ 2, 3.1, 3.2 และ 4 หรือไม่ (ทำเองหรือมีคนช่วย*)**

☐ 0: ไม่เคยทำ ☐ 1: ทำบางครั้ง ☐ 2: ทำบ่อยครั้ง ☐ 3: ทำเป็นประจำ

การป้องกันการเกิดแผลกดทับ

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6 **ท่านรู้วิธีการลดแรงกดทับ เช่น การยกตัว หรือ ก้มตัวไปข้างหน้า หรือไม่**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

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7 **ท่านรู้หรือไม่ว่าควรลดแรงกดทับบ่อยเพียงใดและแต่ละครั้งใช้เวลานานเท่าไร**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

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8 **ท่านรู้หรือไม่ว่าการสูบบุหรี่จะเพิ่มความเสี่ยงต่อการเกิดแผลกดทับและทำให้แผลหายช้า**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

9 **ท่านรู้หรือไม่ว่าการนั่งบนเก้าอี้นานเกินไปจะเพิ่มความเสี่ยงต่อการเกิดแผลกดทับ**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

10 **ท่านรู้หรือไม่ว่าการรับประทานอาหารที่มีสารอาหารครบถ้วนจะช่วยลดความเสี่ยงของการเกิดแผลกดทับได้**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

11 **ท่านรู้หรือไม่ว่าควรทำอย่างไรหากรอยแดงที่เกิดขึ้นบนผิวหนังหลังถูกกดทับไม่จางหายไป**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

12.1 **ท่านใช้เบาะรองนั่ง (เบาะลม เบาะโฟม หรือเบาะชนิดอื่น) หรือไม่**

☐ ไม่ใช้ ☐ ใช้ (ถ้าใช้ตอบข้อ 12.2)

12.2 **ท่านรู้วิธีตรวจสอบสภาพของเบาะรองนั่งหรือไม่**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

13 **ท่านรู้หรือไม่ว่าการทำกิจกรรมยามว่างหรือกีฬาบางประเภทอาจเพิ่มความเสี่ยงต่อการเกิดแผลกดทับ**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

14 **ท่านเปลี่ยนท่าขณะนอนบนเตียงบ้างหรือไม่ (ทำเองหรือมีคนช่วย*)**

☐ 0: ไม่เคยทำ ☐ 1: ทำบางครั้ง ☐ 2: ทำบ่อยครั้ง ☐ 3: ทำเป็นประจำ

15.1 **ท่านรู้วิธีจัดท่านอนบนเตียงโดยใช้หมอนวางในตำแหน่งที่ถูกต้องเพื่อป้องกันแผลกดทับหรือไม่**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

15.2 **ท่านได้จัดท่านอนดังข้อ 15.1 หรือไม่ (ทำเองหรือมีคนช่วย*)**

☐ 0: ไม่เคยทำ ☐ 1: ทำบางครั้ง ☐ 2: ทำบ่อยครั้ง ☐ 3: ทำเป็นประจำ

16 **ท่านรู้หรือไม่ว่าสถานการณ์ใดบ้างจะเพิ่มความเสี่ยงต่อการเกิดแผลกดทับ (เช่น มีไข้ กระดูกหัก การอยู่ท่าเดิมนาน ๆ)**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

การป้องกันการเกิดบาดแผล

17 **ท่านรู้หรือไม่ว่าซิป ตะเข็บนูน อุปกรณ์พยุง รองเท้าหรือเสื้อผ้าที่รัดแน่น... เป็นอันตรายได้**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

18 **ท่านรู้หรือไม่ว่าความร้อน (ถ้วยกาแฟร้อน เครื่องทำความร้อน แสงอาทิตย์) และความเย็น (ถุงน้ำแข็ง) เป็นอันตรายต่อผิวหนัง**

☐ 0: ไม่รู้ ☐ 1: พอรู้ ☐ 2: รู้ดี ☐ 3: รู้ดีมาก

19 **ท่านสามารถหลีกเลี่ยงการเกิดแผลถลอกหรือการกระแทกระหว่างที่ท่านเคลื่อนย้ายตัวได้หรือไม่ (ทำเองหรือมีคนช่วย*)**

☐ 0: ไม่เคยทำ ☐ 1: ทำบางครั้ง ☐ 2: ทำบ่อยครั้ง ☐ 3: ทำเป็นประจำ

20 **ท่านตัดเล็บเพื่อป้องกันการเกิดเล็บขบ โดยตัดเล็บตรง ๆ เสมอปลายนิ้ว ไม่ตัดเล็บโค้งเข้าจมูกเล็บหรือตัดลึกเกินไป ตามที่ได้สอนหรือไม่ (ทำเองหรือมีคนช่วย*)**

☐ 0: ไม่เคยทำ ☐ 1: ทำบางครั้ง ☐ 2: ทำบ่อยครั้ง ☐ 3: ทำเป็นประจำ

The revised Skin Management Needs Assessment Checklist

Please mark ✓ next to the most relevant option

Skin Management

1	Do you have a small mirror to inspect your skin?	☐ No	☐ Yes	

Skin Checks

2	Do you know how to inspect your skin using a mirror?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
3.1	Do you know which areas of the skin to inspect?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
3.2	Do you know what abnormalities to look for?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
4	Do you know how to palpate your skin to check for pressure injuries that are not open wounds?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
5	Do you inspect your skin as instructed in items 2, 3.1, 3.2, and 4 (either by yourself or with assistance*)?			
	☐ 0: Never	☐ 1: Sometimes	☐ 2: Often	☐ 3: Regularly

Preventing Pressure Injuries

6	Do you know how to relieve pressure, such as lifting yourself or leaning your body forward?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
7	Do you know how often you should relieve pressure and how long each time should last?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
8	Do you know that smoking increases the risk of developing pressure injuries and delays wound healing?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well

9	Do you know that sitting on a chair for too long increases the risk of developing pressure injuries? ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well
10	Do you know that eating a well-balanced diet helps reduce the risk of developing pressure injuries? ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well
11	Do you know what to do if redness caused by pressure does not go away? ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well
12.1	Do you use a seat cushion (air cushion, foam cushion, or other)? ☐ No ☐ Yes (If yes, please answer item 12.2)
12.2	Do you know how to check the condition of the seat cushion? ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well
13	Do you know that some leisure activities or sports might increase the risk of developing pressure injuries? ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well
14	Do you change positions while lying in bed (either by yourself or with assistance*)? ☐ 0: Never ☐ 1: Sometimes ☐ 2: Often ☐ 3: Regularly
15.1	Do you know how to position yourself in bed using pillows correctly to prevent pressure injuries? ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well
15.2	Have you positioned yourself in bed as described in item 15.1 (by yourself or with assistance*) ☐ 0: Never ☐ 1: Sometimes ☐ 2: Often ☐ 3: Regularly
16	Do you know what conditions can increase the risk of developing pressure injuries? (such as fever, bone fractures, or prolonged immobility) ☐ 0: I don't know ☐ 1: I know a little ☐ 2: I know well ☐ 3: I know very well

	Preventing Wounds			
17	Do you know that zippers, seams, assistive devices, tight shoes, or tight clothing can harm your skin?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
18	Do you know that heat (e.g., hot coffee, heating devices, sunlight) and cold (e.g., ice packs) can harm your skin?			
	☐ 0: I don't know	☐ 1: I know a little	☐ 2: I know well	☐ 3: I know very well
19	Can you avoid causing abrasions or bumps while moving your body? (either by yourself or with assistance)			
	☐ 0: Never	☐ 1: Sometimes	☐ 2: Often	☐ 3: Regularly
20	Do you cut your nails to prevent ingrown nails by trimming them straight across, not too deeply, as instructed? (either by yourself or with assistance*)			
	☐ 0: Never	☐ 1: Sometimes	☐ 2: Often	☐ 3: Regularly

**** Please note that this English version was not cross-culturally translated but was only provided to enhance the reader's understanding.**