

# Concordance to ‘pressure relief’ regimen for pressure ulcer prevention in spinal cord injury -- A new measurement tool

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# Background

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- ❖ In the UK, a total of 40,000 people living with a SCI and over 1,000 new cases each year; (<https://www.backuptrust.org.uk>)
- ❖ 80% SCI experience at least one pressure ulcer (pressure injury) in their life time (SIA 2015);
- ❖ 36%-50% pressure ulcer incidence results from sitting in a wheelchair (*Mawson et al 1993*);
- ❖ 7-8% of those who develop pressure ulcer will die from related complications (*Richards et al 2004*).

# Background

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## *Impact of pressure ulcer*

### ➤ ***Detrimental personal effects:***

- Longer hospitalisation
- Delay rehabilitation
- Anxiety and depression
- Fatal infection

### ➤ ***Economic impact:***

- Treating a pressure ulcer varies from £1,214 to £14,108 with a total annual cost £1.4–£2.1 billion (*Dealey C 2012*);
- Pressure ulcer accounts for approximately 25% of overall treatment costs for people with SCI (*Zakrasek 2015*)



# Background

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❖ The best way to prevent is to avoid prolonged pressure loaded on the bony area;

❖ People with SCI are advised to do 'pressure relief' activities regularly

- *Pushing-ups*
- *Leaning side-side*
- *Leaning forward*

❖ Poor concordance may contribute to the risk of pressure ulcer



# Rationale

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- ❖ There is no published tool to measure concordance to 'pressure-relief' regimen in SCI.
- ❖ Moreover, identifying barriers can provide a target for interventions according to individual needs

# Aim

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- ❖ To develop a tool to evaluate the concordance to 'pressure relief' for pressure ulcer prevention in seated SCI.
- ❖ To assess the reliability and validity of the newly developed concordance questionnaire.

# Method

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- ❖ University ethical approval was obtained;
- ❖ Wheelchair-users with SCI from SIA and ASPIRE;
- ❖ Concordance items
  - comprehensive literature review
- ❖ Perceptions of pressure ulcer
  - Modified Brief Illness Perception Questionnaire (BIPQ)

# Method

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- ❖ Face validity and content validity;
- ❖ Internal consistency reliability;
  - 38 completed questionnaires
  - *Cronbach's  $\alpha$*  (0-1; >0.65)
- ❖ Test-retest reliability
  - 10 participants in 2 weeks intervals
  - *Pearson correlation coefficient* (>0.70)
- ❖ Acceptability



# Results

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- ❖ 29 items -- concordance:
  - Compliance (7 items),
  - Perceived necessity (9 items),
  - Concerns (4 items),
  - Practical barriers (9 items)
  
- ❖ 8 items -- perception of pressure ulcer

# Concordance measurement

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## ❖ 7 Compliance items:

5= Never, 4 = rarely, 3 = Sometimes, 2 = Often, 1= Always  
***Higher scores indicate higher levels of concordance.***

- *I forget to do my 'pressure relief' exercises*
- *I decide not to do my pressure relief exercises*
- *I do my pressure relief exercises for a shorter time*
- *I do my pressure relief exercises less frequently than instructed*

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# Concordance measurement: cont.

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- ❖ *Perceived necessity (9- item):*
  - *Doing ‘pressure relief’ regularly prevents pressure sores .....*
- ❖ *Concerns (4-item):*
  - *I sometimes worry that doing ‘pressure relief’ activities regularly will cause injuries .....*
- ❖ *Practical issues (9-item ):*
  - *When I’m busy it is more difficult to do ‘pressure relief’ regularly .....*

5=Strongly agree, 4= Agree, 3=Uncertain, 2=Disagree, 1=Strongly disagree

# **Perception of Pressure Ulcer:**

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## **8-items (score 0-10)**

- *How much would a pressure ulcer affect your life?*  
0=Not affect at all, 10= severely affect
- *How concerned are you about pressure ulcer?*  
0=Not concerned at all, 10=extremely concerned
- *How much would pressure ulcer affect you emotionally?*  
0=Not affect at all, 10= extremely emotional

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**A higher score reflects a more threatening view of the pressure ulcer**

# Internal consistency (N=38)

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- ❖ As a whole, internal consistency was very good (*Cronbach's  $\alpha = .78$* )
- ❖ Internal consistency for 4 domains:
  - Concordance (*Cronbach's  $\alpha = .76$* );
  - Necessity (*Cronbach's  $\alpha = .89$* );
  - Concern (*Cronbach's  $\alpha = .87$* );
  - Practical issue (*Cronbach's  $\alpha = .75$* )
- ❖ Perception of pressure injury  
*Cronbach's  $\alpha = .85$*

# Acceptability (N=38)

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- ❖ Completed within 10 minutes;
- ❖ 36/38 participants (95%) completed all items;
- ❖ 2/38 participants (2.6%) missed 1 item;
- ❖ None missing 2 or more items

# Test-retest reliability (N=10)

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## *Pearson correlation coefficient:*

- Concordance  $r = .91, p = .005$
- Necessity  $r = .71, p = .04$
- Concern  $r = .98, p < .00001$
- Practical issue  $r = .93, p = .002$
- Perceptions of pressure injury  $r = .85, p = .02$

# Conclusion

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- ❖ The 37-item questionnaire demonstrated very good reliability and validity;
- ❖ An interventional study to evaluate changes with education is currently ongoing;
- ❖ Future multicentre large sample of survey is warranted;
- ❖ This questionnaire could be a promising assessment tool to promote concordance to 'pressure relief' regimen in people living with SCI.



# Acknowledgement



THANK YOU

*THANKS FOR YOUR ATTENTION!*

*ANY COMMENTS & QUESTIONS?*