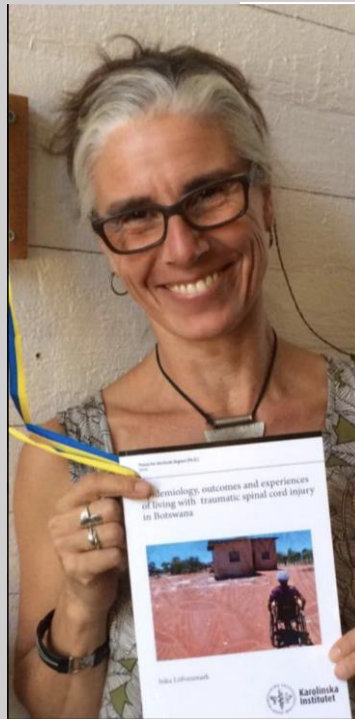


**Outcome evaluation of a  
community peer-based training program  
for people with spinal cord injury  
in Botswana**

Katarzyna Trok, MD, PhD

Anestis Divanoglou, PT, PhD

# Living with a Spinal Cord Injury in Botswana



## EPIDEMIOLOGY, OUTCOMES AND EXPERIENCES OF LIVING WITH TRAUMATIC SPINAL CORD INJURY IN BOTSWANA

Inka Löfvenmark



Karolinska  
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### RESEARCH PAPER

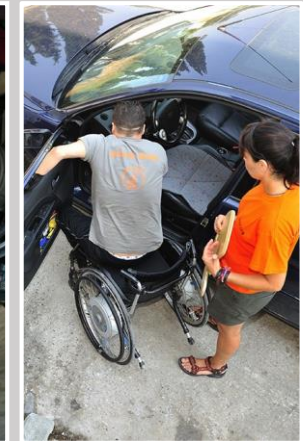
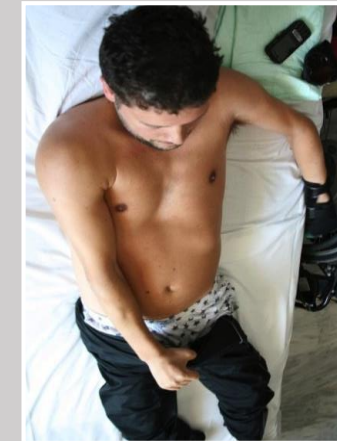
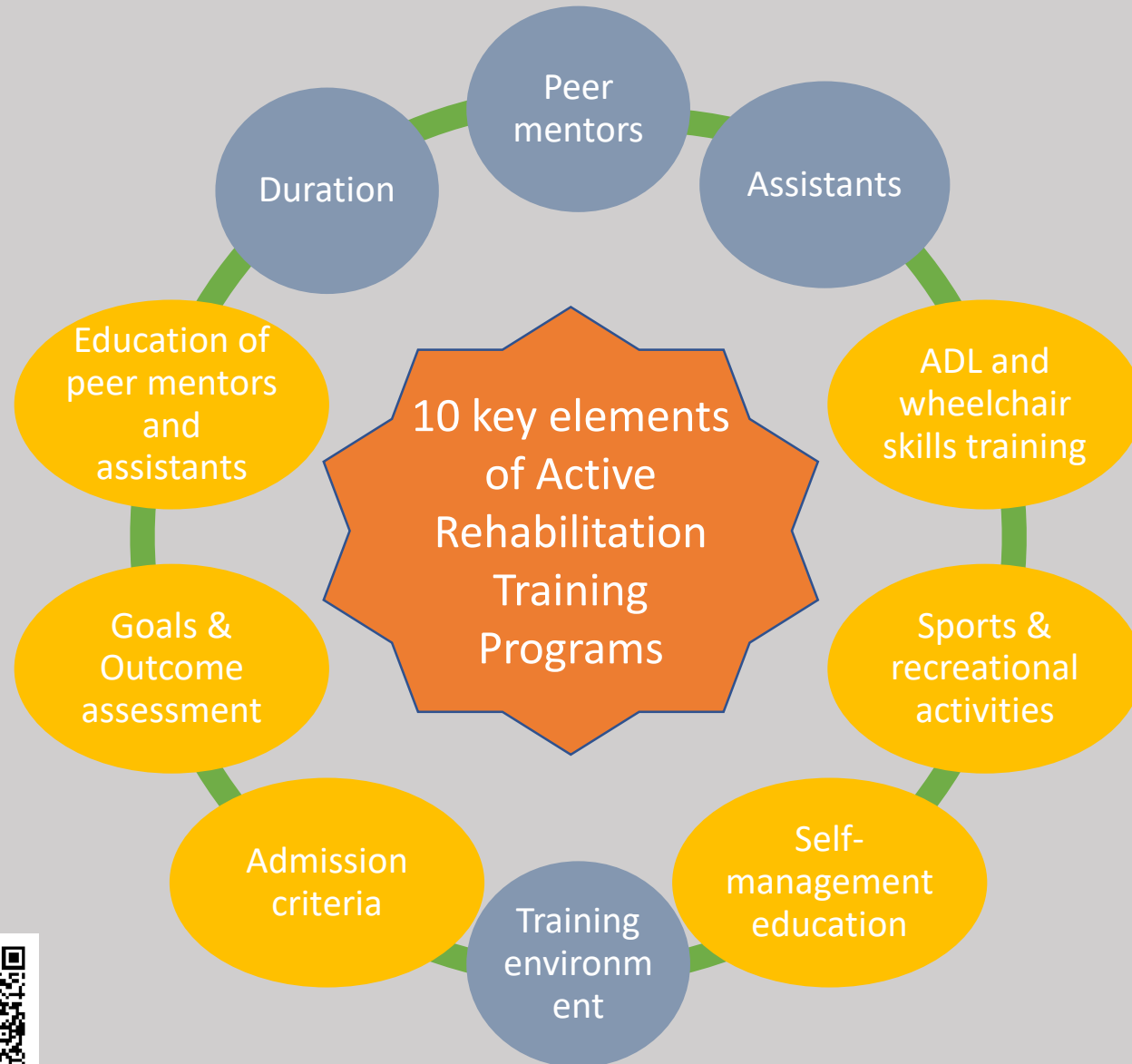
## 'The moment I leave my home – there will be massive challenges': experiences of living with a spinal cord injury in Botswana

Inka Löfvenmark<sup>a,b</sup>, Cecilia Norrbrink<sup>a,c</sup>, Lena Nilsson Wikmar<sup>a</sup> and Monika Löfgren<sup>c</sup>

<sup>a</sup>Department of Neurobiology, Care Sciences and Society, NVS, Division of Physiotherapy, Karolinska Institutet, Huddinge, Sweden;

<sup>b</sup>Spinalis, Rehab Station Stockholm, Solna, Sweden; <sup>c</sup>Department of Clinical Sciences, Karolinska Institutet Danderyd Hospital (KI DS), Stockholm, Sweden





*Divanoglou et al (2018) Spinal Cord*



*Divanoglou & Georgiou  
(2017) Spinal Cord*



Improved skills

Pushing boundaries

Self-confidence

Positive attitude

Share knowledge

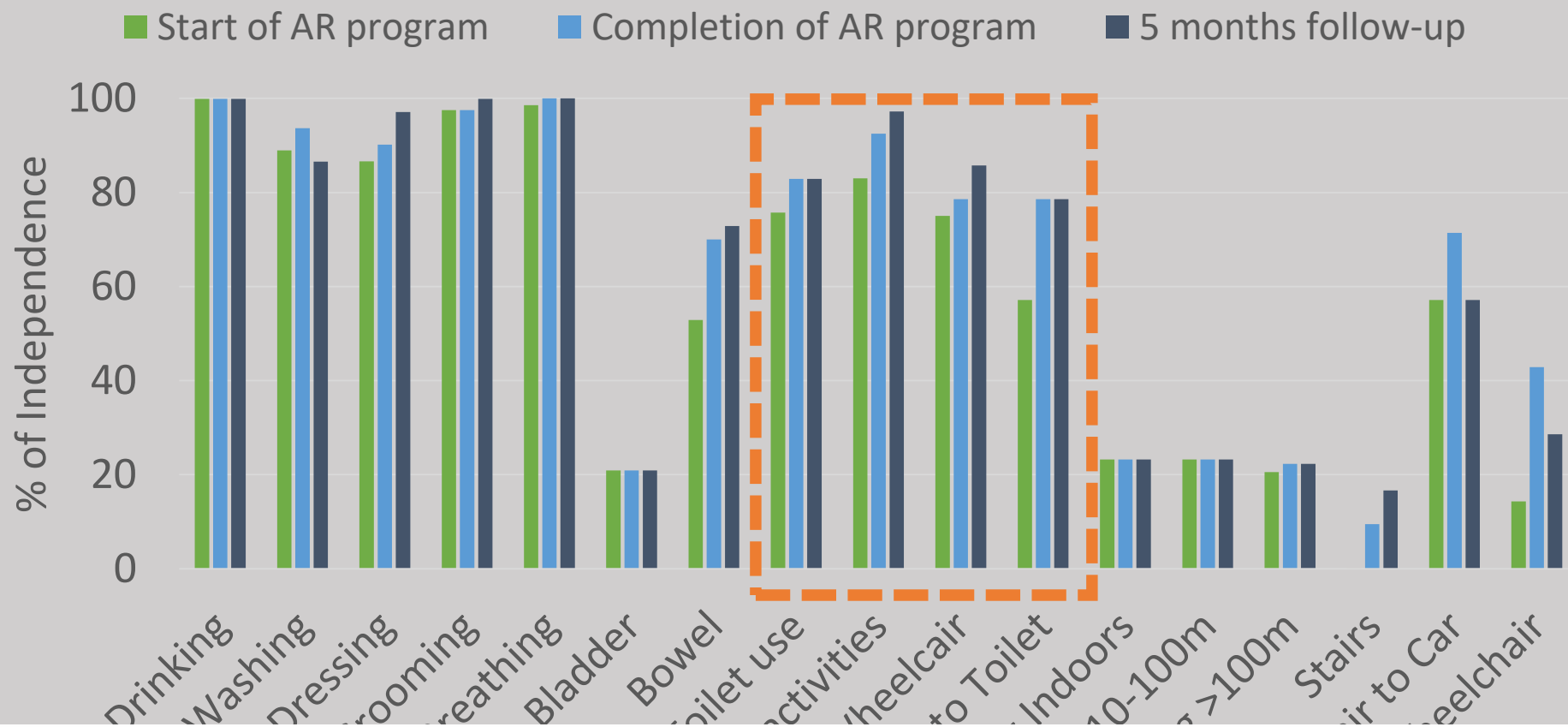
Problem-solving

# 1<sup>st</sup> Active Rehabilitation Training Program in Botswana



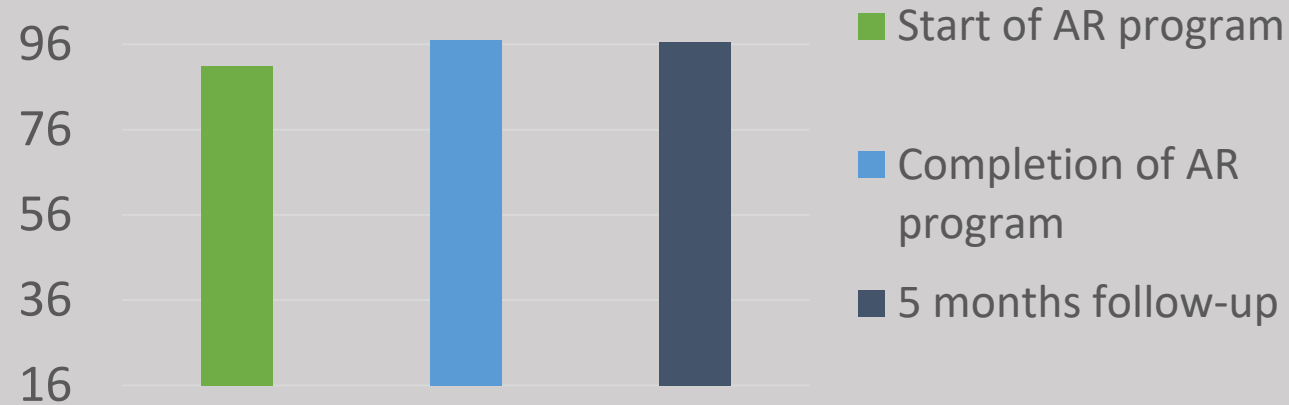
- 6-13 December 2017
- 20 participants with SCI (on average 4 year post injury); team (international and local) of peer mentors (8) and health professionals (6)
- Prospective cohort study
  - Outcomes: Physical independence; Wheelchair mobility; Self-efficacy; Leisure time physical activity; Life satisfaction; Community participation
  - Timepoints: start; completion; 5 month follow-up

# Spinal Cord Independence Measure – Self Report



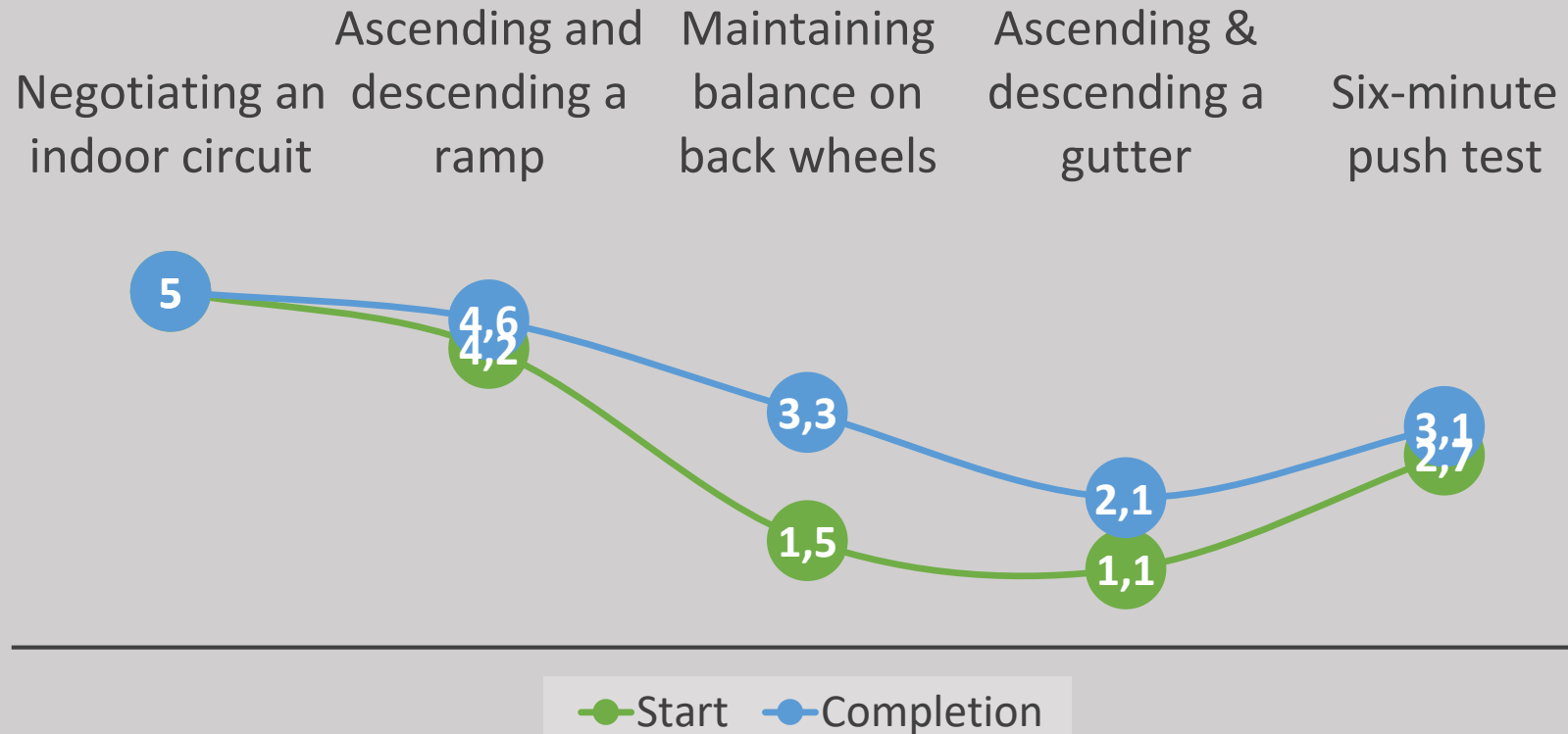
| Persons with SCI<br>(n = 14)             | <i>Baseline</i>      |                                     | <i>Difference<br/>Completion - Baseline</i> |                            |                                     | <i>Difference<br/>5 months follow-up - Baseline</i> |                            |  |
|--|----------------------|-------------------------------------|---|----------------------------|-------------------------------------|---|----------------------------|--|
|  | <i>Mean (95% CI)</i> | <i>Mean difference<br/>(95% CI)</i> | <i>P-value</i>                              | <i>Effect size<br/>(d)</i> | <i>Mean difference<br/>(95% CI)</i> | <i>P-value</i>                                      | <i>Effect size<br/>(d)</i> |  |
| Mobility in<br>room and toilet<br>(0-10) | 7.6 (6.8 – 8.5)      | 1.1 (1.9 – 0.2)                     | <b>0.011</b>                                | <b>0.85</b>                | 1.5 (2.6 – 0.4)                     | <b>0.005</b>  | <b>0.93</b>                |  |

# Moorong Self-Efficacy Scale (16-112)



| Persons with SCI<br>(n = 14)                              | <i>Baseline</i>        | <i>Difference<br/>Completion - Baseline</i> |                |                            | <i>Difference<br/>5 months follow-up - Baseline</i> |                |                            |
|---|------------------------|---|----------------|----------------------------|---|----------------|----------------------------|
|   | <i>Mean (95% CI)</i>   | <i>Mean difference<br/>(95% CI)</i>         | <i>P-value</i> | <i>Effect size<br/>(d)</i> | <i>Mean difference<br/>(95% CI)</i>                 | <i>P-value</i> | <i>Effect size<br/>(d)</i> |
| Moorong Self-<br>efficacy Scale (16-<br>112) <sup>b</sup> | 90.1 (81.4 –<br>100.4) | 6.1 (13.4 – -1.2)                           | 0.070          | -                          | 5.6 (13.7 – -2.6)                                   | 0.120          | -                          |
| Social function   | 31.0 (28.4 – 33.6)     | 0.43 (2.8 – -2.0)                           | 0.959          | -                          | 0 (3.1 – -3.1)                                      | 1.000          | -                          |
| General self-<br>efficacy                                 | 23.1 (20.9 – 25.3)     | 1.1 (4.3 – -2.1)                            | 0.782          | -                          | 1.5 (5.1 – -2.1)                                    | 0.670          | -                          |
| Personal<br>function                                      | 36.9 (33.4 – 40.3)     | 4.6 (7.6 – 1.5)                             | <b>0.004</b>   | <b>0.76</b>                | 4.1 (8.1 – 0.08)                                    | <b>0.040</b>   | <b>0.63</b>                |

# Queensland Evaluation of Wheelchair Skills Test (0-25)



| Persons with SCI (n = 17)<br>QEWS items | Baseline    | Completion of programme | P-value      | Effect size (d) |
|---|-------------|-------------------------|--------------|-----------------|
|   | Mean (s.d.) | Mean (s.d.)             |              |                 |
| Total score <sup>a</sup>                | 14.5 ± 3.8  | 18.0 ± 4.3              | <b>0.001</b> | <b>0.86</b>     |



# Wheelchair Skills Test Questionnaire (WST-Q)



| Persons with SCI<br>(n = 14)          | <i>Baseline</i>      | <i>Difference<br/>Completion - Baseline</i> |                |                            | <i>Difference<br/>5 months follow-up - Baseline</i> |                |                            |
|---------------------------------------|----------------------|---|----------------|----------------------------|---|----------------|----------------------------|
|                                       | <i>Mean (95% CI)</i> | <i>Mean difference<br/>(95% CI)</i>         | <i>P-value</i> | <i>Effect size<br/>(d)</i> | <i>Mean difference<br/>(95% CI)</i>                 | <i>P-value</i> | <i>Effect size<br/>(d)</i> |
| WST-Q Capacity (0-100) <sup>a</sup>   | 61.0 (49.7 – 72.3)   | 10.8 (19.7 – 1.9)                           | <b>0.014</b>   | <b>0.82</b>                | 13.5 (25.3 – 1.7)                                   | <b>0.021</b>   | <b>0.77</b>                |
| WST-Q Confidence (0-100) <sup>a</sup> | 57.5 (47.2 – 67.7)   | 13.8 (29.2 – -1.7)                          | 0.092          | -                          | 24.9 (42.3 – 7.5)                                   | <b>0.003</b>   | <b>0.96</b>                |



# Secondary outcomes

- No effect on
  - life satisfaction
  - Community participation
- Problems with the concept of leisure-time physical activity

**Table 5.** Effects on life satisfaction and community participation (measured at baseline and at five months follow-up).

| Persons with SCI (n = 14)                    | Baseline             | 5 months follow-up   | <i>t</i> | Effect size<br>( <i>d</i> ) | <i>p</i><br>value |
|--|----------------------|----------------------|----------|-----------------------------|-------------------|
|  | Mean ( <i>s.d.</i> ) | Mean ( <i>s.d.</i> ) |          |                             |                   |
| LiSat-11 <sup>a</sup>                        | 42.6 ± 11.8          | 48.7 ± 9.6           | -1.604   | -                           | 0.109             |
| USER-Participation Frequency <sup>b</sup>    | 32.5 ± 17.0          | 42.5 ± 17.1          | -1.877   | -                           | 0.083             |
| USER-Participation Restrictions <sup>b</sup> | 65.1 ± 23.4          | 71.6 ± 21.1          | -0.942   | -                           | 0.365             |

<sup>a</sup> *Wilcoxon* non-parametric signed-rank test

<sup>b</sup> Mixed model ANOVA for repeated measures

# Conclusions

- There is a potential for improvement and a high need for structured training after discharge in individuals with SCI in Botswana.
- Participants achieved substantial improvements in their independence that are comparable with those in the early period after injury.
- Peer-based Active Rehabilitation programs can play an important role in promoting physical independence, wheelchair mobility and disease-management self-efficacy in community dwelling individuals with SCI.


# Our next steps

- This is the first scientific evaluation of Active Rehabilitation training programs internationally
  - Positive results will support the newly founded organization for Active Rehabilitation in Botswana
- A much larger study is currently undergoing in Sweden
- Evaluated all active peer mentors with SCI in Sweden we plan to compare them with mentees to define the qualities and characteristics of peer mentors"

ARTICLE



# Active Rehabilitation for persons with spinal cord injury in Botswana – effects of a community peer-based programme

Anestis **Divanoglou** <sup>1,2</sup> · Katarzyna **Trok**<sup>3</sup> · Sophie **Jørgensen**<sup>4,5</sup> · Claes **Hultling**<sup>6</sup> · Kobamelo **Sekakela**<sup>7</sup> ·  
Tomasz **Tasiemski**<sup>8</sup>

Anestis Divanoglou, PT, PhD, Associate Professor



UNIVERSITY OF ICELAND  
SCHOOL OF HEALTH SCIENCES

FACULTY OF MEDICINE



Sophie Jörgensen MD, PhD



Claes Hultling MD, PhD, Professor



Kobamelo Sekakela MD



Tomasz Tasiemski MD, PhD, Professor



Thank You

