

**Research Summary – Reintegration to Normal Living (RNL) Index – Community Reintegration**

| <b>Author Year<br/>Country<br/>Research<br/>Design<br/>Setting</b>  | <b>Demographics and<br/>Injury<br/>Characteristics of<br/>Sample</b>   | <b>Validity</b>   | <b>Reliability</b>   | <b>Responsiveness<br/>Interpretability</b>       |
|---|--|---|--|--|
| <p><a href="#">Hitzig et al.</a> 2012</p> <p>Cross-sectional telephone survey</p> <p>Rehabilitation institute</p> | <p>N=618<br/>(M=501; F=117)<br/>Mean age = 49.2y (18-92)<br/>Mean YPI = 16.3y (1-60)</p> <p>Community-dwelling SCI patients who were at least 1 year post-injury.</p> <p>Incomplete tetraplegia = 203<br/>Complete tetraplegia = 102<br/>Incomplete paraplegia = 156<br/>Complete paraplegia = 157</p> | <p>To evaluate the construct of the RNL Index compared with the Satisfaction with Life Scale (SWLS), a 3 factor CFA model was fit to the combined items of both scales. A 1-factor CFA of items of both scales yielded poor fit (RMSEA = 0.173, CFI = 0.822, TLI = 0.908).</p> <p>The 3-factor model was an appropriate fit (RMSEA = 0.067, CFI = 0.963, TLI = 0.986). Interfactor correlations showed a stronger relationship between the scores of the 2 factors of the RNL Index than between each factor and the SWLS. Hence,</p> | <p><b>Internal Consistency:</b><br/>The RNL Index yielded Cronbach’s alpha of 0.87. Total-item correlations were 0.37 to 0.67.</p> | <p><b>Interpretability:</b><br/>See table 1.</p> |

| Author Year<br>Country<br>Research<br>Design<br>Setting   | Demographics and<br>Injury<br>Characteristics of<br>Sample | Validity  | Reliability                      | Responsiveness<br>Interpretability |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
|---|--|---|----------------------------------|------------------------------------|-----------------|----------------------|--|--|------------------------------------|--------------------------------------|----------------------------------|---|----|----|-----|---|----|-----|-----|---|-----|-----|-----|--|----|-----|-----|---|-----|-----|-----|--|-----|-----|-----|
|   |  | the 3-factor CFA supports the hypothesis that the SWLS and RNL Index assess distinct, although related, constructs. |                                  |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| Table 1. Mean (SD) RNL Index score*: 17.2 (4.4)   |  |   |                                  |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| <table border="1"> <thead> <tr> <th rowspan="2">RNL Index Items</th> <th colspan="3">Response Frequencies</th> </tr> <tr> <th>0 = does not describe my situation</th> <th>1 = partially describes my situation</th> <th>2 = fully describes my situation</th> </tr> </thead> <tbody> <tr> <td>1. I move around my living quarters as I feel necessary</td> <td>11</td> <td>70</td> <td>532</td> </tr> <tr> <td>2. I move around my community as I feel necessary</td> <td>57</td> <td>181</td> <td>375</td> </tr> <tr> <td>3. I am able to take trips out of town as I feel are necessary.</td> <td>128</td> <td>109</td> <td>377</td> </tr> <tr> <td>4. I am comfortable with how my self-care needs are met.</td> <td>32</td> <td>144</td> <td>439</td> </tr> <tr> <td>5. I spend most of my days occupied in a work activity that is necessary or important to me</td> <td>124</td> <td>144</td> <td>347</td> </tr> <tr> <td>6. I am able to participate in recreational activities as I want to.</td> <td>165</td> <td>193</td> <td>257</td> </tr> </tbody> </table> |  |   |                                  |                                    | RNL Index Items | Response Frequencies |  |  | 0 = does not describe my situation | 1 = partially describes my situation | 2 = fully describes my situation | 1. I move around my living quarters as I feel necessary | 11 | 70 | 532 | 2. I move around my community as I feel necessary | 57 | 181 | 375 | 3. I am able to take trips out of town as I feel are necessary. | 128 | 109 | 377 | 4. I am comfortable with how my self-care needs are met. | 32 | 144 | 439 | 5. I spend most of my days occupied in a work activity that is necessary or important to me | 124 | 144 | 347 | 6. I am able to participate in recreational activities as I want to. | 165 | 193 | 257 |
| RNL Index Items   | Response Frequencies                                       |   |                                  |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
|   | 0 = does not describe my situation                         | 1 = partially describes my situation  | 2 = fully describes my situation |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| 1. I move around my living quarters as I feel necessary   | 11   | 70  | 532                              |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| 2. I move around my community as I feel necessary   | 57   | 181   | 375                              |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| 3. I am able to take trips out of town as I feel are necessary.   | 128  | 109   | 377                              |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| 4. I am comfortable with how my self-care needs are met.  | 32   | 144   | 439                              |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| 5. I spend most of my days occupied in a work activity that is necessary or important to me   | 124  | 144   | 347                              |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |
| 6. I am able to participate in recreational activities as I want to.  | 165  | 193   | 257                              |                                    |                 |                      |  |  |                                    |                                      |                                  |   |    |    |     |   |    |     |     |   |     |     |     |  |    |     |     |   |     |     |     |  |     |     |     |

| Author Year<br>Country<br>Research<br>Design<br>Setting                          | Demographics and<br>Injury<br>Characteristics of<br>Sample   | Validity   | Reliability  |     | Responsiveness<br>Interpretability |  |
|--|--|--|--|-----|------------------------------------|--|
|  | 7. I participate in social activities with family, friends, and/or business acquaintances as is necessary or desirable to me.                                  |  | 58   | 152 | 405                                |  |
|  | 8. I assume a role in my family that meets my needs and those of other family members.   |  | 69   | 137 | 406                                |  |
|  | 9. In general, I am comfortable with my personal relationships   |  | 40   | 108 | 466                                |  |
|  | 10. In general, I am comfortable with myself when I am in the company of others.   |  | 31   | 121 | 463                                |  |
|  | 11. I feel that I can deal with life events as they happen.  |  | 18   | 106 | 490                                |  |
|  | *Assessed via 3-point scale  |  |  |     |                                    |  |
| <a href="#">Mothabeng et al. 2012</a><br><br>Cross-sectional<br><br>South Africa | N=160<br>134 Males<br>Mean age: 29.19 ± 8.05 years<br>Community dwelling people living with SCI, discharged from inpatient rehabilitation for at least 2 years |  | <b>Internal Consistency:</b><br>Cronbach's alpha: 0.97 |     |                                    |  |
| <a href="#">Gray et al. 2006</a>   | N = 604<br>(SCI = 141, MS = 126, Cerebral Palsy = 88,  | Correlation of the Rivermead Mobility Index (RMI) with |  |     |                                    |  |

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|---|---|--|--------------------|---|
| <p>Interviews and focus groups to collect data on demographics and measures of disability, health, and functioning. The PARTS/M was administered twice.</p> <p>Midwestern United States</p> | <p>Polio = 169, Stroke = 80)<br/>                     Mean age = 51.5<br/>                     Male = 42.5%<br/>                     Female = 57.5%</p> <p>Those with SCI:<br/>                     n = 141<br/>                     Mean age = 41.4<br/>                     Male = 74.5%<br/>                     Female = 25.5</p> | <p>instruments measuring the same construct as the RMI:<br/>                     Correlation between Participation Survey/Mobility (PARTS/M) and RNL = 0.71, P&lt;.001.</p>  |                    |   |
| <p><a href="#">May &amp; Warren</a><br/>2002</p> <p>Measurement evaluation of external and structural components of validity</p> <p>Community - Members of Canadian</p>                     | <p>98 (76 men, 22 women)<br/>                     Average age 45.2 years (range of 21-81 years)<br/>                     44% unemployed,<br/>                     17% retired<br/>                     49% married</p> <p>Over 1 year post-injury (average 15.5yrs, range 1-78 years)</p>   | <p>Pearson's correlations of RNL with other scales:</p> <ol style="list-style-type: none"> <li>1. Quality of Life Index (QLI) = - 0.654 (P&lt;.01)*</li> <li>2. American Spinal Injury Association (ASIA) – motor score = - 0.196 (ns)</li> <li>3. Functional Independence Measure (FIM)= - 0.348 (P&lt;.01)*</li> </ol> |                    | <p><b>Interpretability:</b><br/>                     Mean (SD) RNL score*: 23.05 (13.54) – range: 3-78.36<br/>                     *Assessed via visual analogue scale; reported as adjusted score out of 100</p> |

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|--|--|--|--------------------|--|
| Paraplegic Society (Alberta)   | 56% cervical injury<br>Without concomitant head injury                                 | 4. Rosenberg Self-Esteem Scale (RSES)= - 0.483 (P<.01)*<br>5.Locus of Control (LOC)= - 0.042 (ns)<br>*should be positively correlated, possible error in reporting |                    |  |

**Research Summary – Reintegration to Normal Living (RNL) Index – Community Reintegration - Cross-cultural Validation Studies**

| <b>Author Year<br/>Country<br/>Research<br/>Design<br/>Setting</b>  | <b>Demographics and<br/>Injury<br/>Characteristics of<br/>Sample</b>   | <b>Validity</b>   | <b>Reliability</b>  | <b>Responsiveness<br/>Interpretability</b>  |
|---|--|---|---|---|
| <p><a href="#">Okoye et al.</a> 2019</p> <p>Study to cross-culturally adapt and validate the original English visual analogue scale version of the Reintegration to Normal Living Index (RNLI) into <b>Igbo Language</b></p> <p>Clinics and rehabilitation centres in Anambra and Enugu States of South-Eastern Nigeria</p> | <p>102 participants with mobility-restricting disabilities</p> <p>Mean age of 46.92 ± 20.91 years<br/>63M, 39F</p> <p>Causes of disability: Stroke (n = 19), post-polio syndrome (n = 28), severe OA (n = 13), leprosy (n = 14), neuropathy (n = 2), amputation (n = 8), <b>SCI (n = 9)</b>, mal-united fracture (n = 6), foot drop (n = 2), osteogenesis imperfecta (n = 1)</p> <p>Median disability duration among the participants was 96.00 months</p> | <p><b>Concurrent validity:</b><br/>The Spearman correlation coefficients between the participants' total, subscale and domain scores on the Igbo and the English versions of the RNLI (r = 0.81-0.95) were excellent.</p> | <p><b>Internal consistency:</b><br/>The Cronbach's alpha for the item-to-total correlation on the I-RNLI was 0.84, while those for split-half reliabilities for the 'daily functioning' and 'perception of self to others' subscale scores were 0.82 and 0.92 respectively.</p> | <p>The standard error of mean and minimum detectable difference values for the total, subscale and domain scores on the I-RNLI are displayed on Table 1. The SEM values ranged from 0.23 (out of 10) (item 9) to 2.10 (out of 100) (perception of self subscale and total scores) while the MDD values ranged from 0.63 (out of 10) (item 9) to 5.83 (out of 100) (total scores).</p> |
| <p>Table 1.</p>   |  |   |   |   |

| Author Year<br>Country<br>Research<br>Design<br>Setting | Demographics and<br>Injury<br>Characteristics of<br>Sample | Validity |      | Reliability | Responsiveness<br>Interpretability |
|---|--|----------|------|-------------|------------------------------------|
|   | RNLI Scores  | SEM      | MDD  |             |                                    |
|   | Item 1   | 0.29     | 0.80 |             |                                    |
|   | Item 2   | 0.31     | 0.85 |             |                                    |
|   | Item 3   | 0.32     | 0.89 |             |                                    |
|   | Item4  | 0.25     | 0.68 |             |                                    |
|   | Item5  | 0.32     | 0.88 |             |                                    |
|   | Item 6   | 0.26     | 0.73 |             |                                    |
|   | Item 7   | 0.26     | 0.72 |             |                                    |
|   | Item 8   | 0.29     | 0.81 |             |                                    |
|   | Item 9   | 0.23     | 0.61 |             |                                    |
|   | Item 10  | 0.24     | 0.67 |             |                                    |
|   | Item 11  | 0.25     | 0.70 |             |                                    |
|   | Daily functioning transformed                              | 2.33     | 6.47 |             |                                    |
|   | Perception of self transformed                             | 2.10     | 5.83 |             |                                    |
|   | Total transformed  | 2.10     | 5.83 |             |                                    |