Objective

Post-traumatic growth (PTG) refers to a positive psychological change experienced after a challenging life circumstance or traumatic event, such as a spinal cord injury (SCI). The objective of this study is to describe areas of PTG in individuals who sustained a pediatric SCI and examine the association of growth with emotional functioning.

Method

194 individuals were interviewed using a structured questionnaire. Participants were part of a longitudinal study examining the long-term outcomes of former patients with pediatric SCI. Participants were recruited from the 3 Shriners Hospitals for Children SCI sites: Chicago, IL, Philadelphia, PA, Sacramento, CA.

In addition to demographic and medical questionnaires, the following standardized measures were administered:

- Post-Traumatic Growth Inventory (PTGI)
  - 5 factors: 'Relating to Others' (7 items), 'New Possibilities' (5 items), 'Personality Strength' (4 items), 'Spiritual Change' (2 items), and 'Appreciation for Life' (3 items)
  - Higher scores indicate more growth
- Satisfaction with Life (SWL) Scale
  - Higher scores indicate greater satisfaction with life
- General Happiness Scale (GHS)
  - Higher scores indicate greater happiness
- Patient Health Questionnaire-9 (PHQ-9)
  - Higher scores indicate more depressive symptoms
- Beck Anxiety Inventory (BAI)
  - Higher scores indicate more anxious symptoms

Support: Shriners Hospitals for Children-Chicago and Craig H. Nielsen Foundation #324671

Results

All participants reported a change in at least one area as a result of their SCI.

The most strongly endorsed items on the PTGI were:
1) "I discovered that I am stronger than I thought I was" (M=3.49, SD=1.63)  
2) "I appreciate the value of my life more" (M=3.40, SD=1.59)  
3) "I accept more that I need other people" (M=3.36, SD=1.46)

These items represent growth in the moderate to great range.

Overall, participants endorsed the most growth in 'Appreciation for Life' (65.7%), followed by 'New Possibilities' (60.9%) and 'Personal Strength' (60.4%). Growth in these three areas was classified as moderate.

There were no significant differences in type of growth based on gender, age at injury, or injury type.

Growth was positively associated with positive emotional symptomology like general happiness; surprisingly, growth was not negatively correlated with negative emotional symptomology such as depression and anxiety.

Table 1. Participant characteristics (n= 194)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>M(SD) or n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (Male)</td>
<td>124(63.9%)</td>
</tr>
<tr>
<td>Age at Interview</td>
<td>35.4(7.84)</td>
</tr>
<tr>
<td>Age at Injury</td>
<td>19 – 51</td>
</tr>
<tr>
<td>Duration of Injury</td>
<td>19.8(8.02)</td>
</tr>
<tr>
<td>Tetraplegia</td>
<td>120(61.9%)</td>
</tr>
<tr>
<td>Complete</td>
<td>131(67.5%)</td>
</tr>
<tr>
<td>Race/Ethnicity (Caucasian)</td>
<td>160(82.5%)</td>
</tr>
</tbody>
</table>

Table 2. Associations between demographics, emotional symptomology, and PTG factors

<table>
<thead>
<tr>
<th>PTG Factors</th>
<th>Relating to Others</th>
<th>New Possibilities</th>
<th>Personal Strength</th>
<th>Spiritual Change</th>
<th>Appreciation of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Interview</td>
<td>-0.070</td>
<td>-0.178</td>
<td>-0.138</td>
<td>0.128</td>
<td>-0.106</td>
</tr>
<tr>
<td>Duration of Injury</td>
<td>-0.066</td>
<td>-0.171</td>
<td>-0.116</td>
<td>0.148</td>
<td>-0.074</td>
</tr>
<tr>
<td>Injury Severity</td>
<td>0.148</td>
<td>0.076</td>
<td>-0.042</td>
<td>0.070</td>
<td>0.052</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>0.146</td>
<td>0.211**</td>
<td>0.118</td>
<td>0.124</td>
<td>0.100</td>
</tr>
<tr>
<td>SWL Total</td>
<td>0.045</td>
<td>0.031</td>
<td>0.207**</td>
<td>0.099</td>
<td>0.091</td>
</tr>
<tr>
<td>GHS Total</td>
<td>0.154*</td>
<td>0.139</td>
<td>0.305***</td>
<td>0.144*</td>
<td>0.241**</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001

Conclusion

Despite the challenges that individuals with pediatric SCIs face, they experience positive psychological growth throughout adulthood.

Longitudinal findings are needed to understand the potential changes in growth over time and how growth impacts long-term medical and other psychosocial outcomes.

The authors have nothing to disclose.

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Areas of Post-traumatic Growth Following Pediatric-Onset Spinal Cord Injury

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