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Predicting Caregiver Burden Over the First 4 Months After TBI in Latin America: A Multi-site, Multi-Country Study

Mickeal Pugh, Jr1, Paul B. Perrin1, Yaneth Rodriguez2, Silvia Olivera3, Maria Cristina Quijano4, & Juan Carlos Arango-Lasprilla5,6,7

Introduction

• Research has documented the needs of caregivers of individuals with traumatic brain injury (TBI) and those with TBI in the United States, but almost no research has examined these populations in low- and middle-income regions, such as Latin America.

• Literature has suggested that some of the key features of TBI are cognitive impairment, depression, and social disadaptation (Deloche, Dellatolas, & Christensen, 2000).

• These features of TBI may predict caregiver burden longitudinally during the first few months after hospital discharge from TBI in Latin America.

Study Aims

• The objective of the current study was to evaluate how cognitive impairment, depression, and social disadaptation after TBI predict caregiver burden longitudinally before and during the first four months after hospital discharge from TBI across three clinics in Colombia and Mexico.

Method

Participants

• 109 TBI caregivers (Mage = 41.56; SD = 13.85; 89 women)

• Mexico City, Mexico: 68; Cali, Colombia: 21; Neiva, Colombia: 20

Main Outcomes Measures:

• Caregiver burden: Zarit Burden Inventory

• Patient functioning: cognitive/executive, depression, and social disadaptation European Brain Injury Questionnaire (EBIQ)

• Demographics (e.g., Age, Education, Gender)

Procedure:

• Medical centers provided a recruitment pool for the study and caregivers consented to participate.

• Inclusion criteria: primary caregiver for a person with a formal diagnosis of TBI, ≥18 at enrollment, and able to read and write in Spanish.

Data Analysis:

• Hierarchical linear modeling (HLM) was used to examine baseline impairment predictors of caregiver burden trajectories across baseline, 2 months, and 4 months.

Results

• All study variables were normally distributed

• A significant effect of time suggested that caregiver burden decreased across the baseline, 2-month, and 4-month follow ups.

• Sex and social disadaptation yielded statistically significant effects on participants’ burden trajectories (Table 1).

• Men had higher burden scores across the three time points compared to women (p = .004; Figure 1).

• Caregivers with ≥16 reported social disadaptation at baseline had higher burden across over time compared those with <16 social disadaptation (EBIQ; Figure 2).

• Follow-up interaction analyses suggested that neither main effect changed differentially over time (Table 2).

Table 1. Predictors of caregiver burden at baseline, 2, and 4-months post TBI

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>b-weight</th>
<th>Std. Error</th>
<th>df</th>
<th>t</th>
<th>p-value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>34.62</td>
<td>3.92</td>
<td>164.59</td>
<td>11.47</td>
<td>** .000**</td>
<td>28.66 - 40.58</td>
</tr>
<tr>
<td>Time</td>
<td>-2.65</td>
<td>0.67</td>
<td>216.37</td>
<td>-3.95</td>
<td>** .000**</td>
<td>-3.98 - -1.33</td>
</tr>
<tr>
<td>Age</td>
<td>0.03</td>
<td>0.09</td>
<td>172.87</td>
<td>0.36</td>
<td>.722</td>
<td>0.15 - 0.22</td>
</tr>
<tr>
<td>Sex</td>
<td>-9.32</td>
<td>3.17</td>
<td>170.98</td>
<td>-2.94</td>
<td>** .004**</td>
<td>-15.58 - -3.07</td>
</tr>
<tr>
<td>Education</td>
<td>0.27</td>
<td>0.55</td>
<td>114.90</td>
<td>0.49</td>
<td>.627</td>
<td>-0.52 - 1.36</td>
</tr>
<tr>
<td>Cognitive</td>
<td>0.56</td>
<td>0.32</td>
<td>127.37</td>
<td>1.75</td>
<td>.083</td>
<td>-0.07 - 1.20</td>
</tr>
<tr>
<td>Depression</td>
<td>0.12</td>
<td>0.43</td>
<td>130.01</td>
<td>0.26</td>
<td>.708</td>
<td>-1.11 - 1.45</td>
</tr>
<tr>
<td>Social Disadaptation</td>
<td>0.66</td>
<td>0.31</td>
<td>146.98</td>
<td>2.12</td>
<td>* .036</td>
<td>0.04 - 1.27</td>
</tr>
</tbody>
</table>

*Note: Values represent unstandardized b-weights. ** p < .05, * p < .01, *** p < .001

Conclusions

• Male caregivers and those providing care for an individual with TBI showing social impairments at hospital discharge are at increased risk for burden and should be targeted for evidence-based caregiving interventions in Latin America.

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