Factors related to work participation after hand injuries among manual workers

By:
Dr. Batia Marom
Prof. Carel Rafi,
Prof. Sharabi Moshe
& Prof. Ratzon Navah

May 2018
The incidence rate of hand injuries in manufacturing environments ranged from 4 to 11 per 100 workers per year.


HI account for approximately fifth of all cases presented to emergency departments in hospitals.

We could not find information regarding the number of people who do not return to work after HI.

HI cause long duration of treatment and great community cost, Therefore, it is important to examine the factors that are affect participation in work after HI.
It is agreed that information related to medical conditions and objective medical findings are not the only factors that can predict RTW.

Current literature emphasizes the integration between medical, psychosocial, personal, and environmental variables in RTW.
Objectives

To determine time of return to work (TRTW) in relation to multivariable predictors among, male manual workers after hand injury (HI) over 12-month follow-up.
Sample: 178 subjects (90 Arabs, 88 Jews).

Age: M = 37.4, SD = 11.0.

<table>
<thead>
<tr>
<th>Nature of work</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled workers</td>
<td>78 (43.8)</td>
</tr>
<tr>
<td>Production, agriculture, unskilled labor</td>
<td>39 (21.9)</td>
</tr>
<tr>
<td>Construction</td>
<td>25 (14.0)</td>
</tr>
<tr>
<td>Driver</td>
<td>21 (11.8)</td>
</tr>
<tr>
<td>Service industry</td>
<td>15 (8.4)</td>
</tr>
</tbody>
</table>
### Results

70.1% occurred during working hours

<table>
<thead>
<tr>
<th>Type of injury</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fracture</td>
<td>69 (38.8)</td>
</tr>
<tr>
<td>Tendon Injury</td>
<td>34 (19.1)</td>
</tr>
<tr>
<td>Soft tissue Injury</td>
<td>34 (19.1)</td>
</tr>
<tr>
<td>Amputation</td>
<td>19 (10.7)</td>
</tr>
<tr>
<td>Injury involving &gt;1 compartment of the hand</td>
<td>19 (10.7)</td>
</tr>
</tbody>
</table>
### Employment Profile of the Study Cohort (N=178)

<table>
<thead>
<tr>
<th>Employment Profile</th>
<th>All Study Cohort</th>
<th>Jewish</th>
<th>Arab</th>
<th>Value (X²)</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>RTW by 3 months</td>
<td>66</td>
<td>37.1</td>
<td>40</td>
<td>45.5</td>
<td>26</td>
</tr>
<tr>
<td>Not working</td>
<td>112</td>
<td>62.9</td>
<td>48</td>
<td>54.5</td>
<td>64</td>
</tr>
<tr>
<td>RTW by 6 months</td>
<td>115</td>
<td>65</td>
<td>62</td>
<td>70.5</td>
<td>53</td>
</tr>
<tr>
<td>Not working</td>
<td>62</td>
<td>35</td>
<td>26</td>
<td>29.5</td>
<td>36</td>
</tr>
<tr>
<td>RTW by 9 months</td>
<td>130</td>
<td>73.9</td>
<td>69</td>
<td>78.4</td>
<td>61</td>
</tr>
<tr>
<td>Not working</td>
<td>46</td>
<td>26.1</td>
<td>19</td>
<td>21.6</td>
<td>27</td>
</tr>
<tr>
<td>RTW by 12 months</td>
<td>134</td>
<td>75.3</td>
<td>70</td>
<td>79.5</td>
<td>64</td>
</tr>
<tr>
<td>Not working</td>
<td>42</td>
<td>24.7</td>
<td>18</td>
<td>20.5</td>
<td>24</td>
</tr>
</tbody>
</table>
Results

Mean time of RTW: 121 days, SD = 68.3 days.
Median TRTW: 94 days.
90% returned to the same workplace and same work position.

13.8% returned to reduced working hours.
10.6% of participants had work restrictions.

Only two participants were in NII work rehabilitation programs or in the process of entering such a program.
TRTW as a function of variables, divided to ICF domains: multiple Cox regressions of 12-month follow-up

**Environmental factors**
- Ethnicity - Jews (↑77%)
- Repetitive movement (↓17%)
- Lifting
- Workload / job control (↓40%)
- Recognition for work disability benefit claim (↓48%)

**Personal factors**
- Self-efficacy (↑33%)
- Education
- Partner working
- Work centrality
- Lawyer involvement (↓46%)

**Body function and structure**
- Pain (↓10%)
- GWIS (↑5%)
- IES – intrusion (↓80%)
- IES – avoidance

**Activities and participation domains**
- QDASH (↓2%)
- WHODAS
In practice, some of the predictors are beyond the control of care givers but:
It should become central in understanding its effect on work participation.
It should be taken into account in the assessment and intervention process in order to promote RTW
Conclusions:

Underlying the multi-aspects in the rehabilitation process

Some of the predictors can be modified with specific interventions

✓ Physical capability of the hand.
✓ Pain management.
✓ Psychosocial aspects.
✓ Personal and environmental aspects.
✓ Focus on work activities 🧗‍♂️
Conclusions:

- Developing treatment programs (work hardening programs) for those who are at risk for not RTW, taking into consideration these factors.

- Explore and use coping strategies during the rehabilitation process.

- Examine novel interventions to improve employment outcomes, specifically interventions that take in consideration the cultural uniqueness of different ethnic groups (attitudes and beliefs about illness and disability).
Thank You