INTRODUCTION

With recent prosthetic advancements and the increasing prosthetic options for partial hand (PH) amputations (PHA) over the past decade, some research has been conducted to evaluate the needs of this subgroup of the upper limb amputation (ULA) patient population (Desmond 2002). However, a dearth of research has been conducted to evaluate differences between varying subgroups of ULA patients; more specifically, how PHA patients may differ from higher ULA patients.

Anecdotal evidence and some preliminary work has found that PHA patients exhibit elevated levels of perceived distress in comparison to higher ULA patients (Phillips 2012). However, literature in this area is few and far between.

The study aimed to advance the literature by evaluating odds of positive screens on various measure of psychological wellness (e.g., PTSD, depression) between subgroups of ULA patients secondary to clinical team experiences indicating the need to objectively evaluate patient needs and inform patient specific care recommendations. We hypothesized psychological variables responses are unique to ULA subgroups.

METHOD

Subjects: Sample 263 (M age = 44.35; 67.3% male) from the Wellness Inventory (WI) with varying levels of UL amputation receiving prosthetic rehabilitation.

Apparatus: The WI consists of seven validated screening instruments, including depression, PTSD, pain interference and substance use (i.e. alcohol, illicit drug use, overuse of prescription medication).

Procedure: Subjects participated in a battery of validated outcome measures at relevant prosthetic fitting and training stages as standard of care in seven outpatient rehabilitation centers.

Data Analysis: A series of hierarchical logistic regressions were conducted to assess if level of amputation (PHA vs. ‘higher ULA’) increased odds for screening positive on psychological wellness measures in the WI. Analyses controlled for pertinent demographic variables (e.g. age, gender).

RESULTS

Results from the analyses found that membership in subgroup did not significantly increase odds of positive screens for depression or any of the substance use variables. However, belonging to the PHA subgroup significantly increased odds of a positive screen for PTSD [Odds Ratio (OR) = 2.04, 95% CI: 1.11 – 3.77, p = .002] and for endorsement of pain interference (OR = 2.96, 95% CI: 1.63 – 5.39, p < .001).

<table>
<thead>
<tr>
<th>Wellness Screen</th>
<th>Odds Ratio (95% CI)</th>
<th>p-value</th>
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<tbody>
<tr>
<td>PTSD</td>
<td>2.04 (1.11, 3.77)</td>
<td>.022</td>
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<tr>
<td>Depression</td>
<td>1.26 (1.72, 2.06)</td>
<td>.353</td>
</tr>
<tr>
<td>Pain Interference (Yes/No)</td>
<td>2.96 (1.63, 5.39)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Alcohol</td>
<td>1.17 (1.70, 1.95)</td>
<td>.559</td>
</tr>
<tr>
<td>Overuse of Prescription Drugs</td>
<td>.84 (.43, 2.06)</td>
<td>.884</td>
</tr>
<tr>
<td>Illicit Drug Use</td>
<td>.92 (.36, 2.38)</td>
<td>.864</td>
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</tbody>
</table>

Figure 1. Comparison of upper limb amputation groups on psychological outcome measures, controlling for age and gender.

DISCUSSION

This study found that level of amputation increased odds for screening positive for several psychological well-being measures. In fact, our data suggest that the odds of a PHA patient screening positive for PTSD were twice those of a ‘higher ULA’ patients; same for pain interference. Future work should (a) consider level of amputation as a meaningful predictor or control variable and (b) consider investigating the interplay between psychological variables within various ULA subgroups.

CONCLUSION

Our findings suggests that level of amputation may play an important role in understanding and predicting psychological well-being among ULA patients, and may be particularly meaningful for PHA patients. Further research to further evaluate this potential influence on clinical outcomes along with methods to address the patient population specific need is necessary.

CLINICAL APPLICATIONS

As there are more prosthetic fitting options for PHA than in the recent past, clinicians providing prosthetic rehabilitative services to this patient population subgroup should consider these findings to meet the needs of individuals.

REFERENCES

Desmond et al. (2002), JPO, 14(1), 19-22.
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