The Effect on Inter-Rater Consistency Using a Standardized Assessment Tool/Framework in Musculoskeletal Examinations

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Quality Improvement Project
Compensation & Pension Clinic, VAPHS

Problem:
- Lack of clearly defined decision making criteria to evaluate “functional loss”
- Lack of inter-rater consistency among clinicians performing exams
- Inconsistent rating for compensation due to disability awarded to Veterans
Quality Improvement Project
Compensation & Pension Clinic, VAPHS

Will the Implementation of a Standardized Assessment Tool Increase Inter-rater Consistency in Musculoskeletal Exams?
Literature Review

Musculoskeletal system examinations performed using a valid, reliable assessment tool

Result:

Increased consistency in outcomes
Evidence Based Practice

- Standardized tools help clinicians identify and quantify body function and structure limitations, improving clinical practice (AMA, 2014).

- In assessing inter-rater reliability using the Index of ADL, Katz et al., (1963) found that inter-rater variability occurred 1/20 evaluations or less.
PDSA Model
Framework for quality improvement to design and test change on a small scale using cycles:

PLAN

DO

STUDY

ACT
Search For a Tool To Assess Functional Loss

- Functional Movement Screen
- International Classification of Functioning (ICF)
- Katz Index of Activities of Daily Living
- Disabilities of the Arm, Shoulder, and Hand (DASH)
International Classification of Functioning (ICF)

- Developed by the World Health Organization in 2001
- Describes the health status of individuals
- Considers personal and environmental factors and how both impact function
- Adaptable to musculoskeletal system
International Classification of Functioning

Health Conditions

Body Function and Structure
Impairments

Activities
Limitations

Participation
Restrictions

Environmental
Factors

Personal
Factors

(WHO, 2001)
Theoretical Framework – Change Theory

(Unfreeze) Implement Desired Change (Refreeze)

(Lewin, 1951)
Application of PDSA Model for Quality Improvement

“Plan”

1. Provide education for providers in clinic
2. Implement standardized assessment tool (ICF)
3. Evaluate examination findings x 3 months prior to implementing ICF with 3 months post-education and implementation of ICF
4. Identify and analyze the change in assessment identified as (+)functional loss pre/post-implementation of ICF
Process for Implementation

- Stakeholder Input and Decision Making
  - WHO Permission to Use ICF
    - VA IRB Approval Exempt Status
      - Carlow University IRB Approval
        - Provide Education on Use of the ICF in Exams
          - Collect Data 3 mo. Pre-implementation and 3 months Post-Implementation
            - Evaluate Pre- Post Test Data, Conduct Statistical Analysis
              - Implementation of the Standardized Assessment Tool (ICF)
Application of PDSA Model for Quality Improvement

“Do”

- **Education** - provided to increase clinician’s knowledge
  - Multiple face to face meetings
    - Describe use of ICF
    - Provide case study examples and application of ICF
    - Follow-up PowerPoint presentation (Functional Loss, ICF, additional case studies, review definitions)
Ready To Go!

Education provided on use of ICF

Initiate use of the ICF in the shoulder examinations

face to face education

Power Point Presentation

case studies

Test/Retest using case studies to achieve 80% passing rate by clinicians
Timeline: Spring, 2016 - Present

- March-May: Clinician Education
- June: Implement Tool
- July-September: Begin Data Collection
- October: Access Database Analysis
- December: Pearson’s Chi-Square test
- January: Statistical Analysis
- February-March: Evaluation of Results
Data Collection

3 months pre-/3 months post- intervention

A. Transfer relevant data from patient chart to Access database

B. Database developer analysis

C. Transfer metrics to Excel spreadsheet

D. Perform statistical analysis

E. Identify significant findings
Measurement

“Study”

Evaluate Outcomes Pre/Post:

I. Assessment of Pain
II. Examination Findings
III. Functional Loss Assessment
IV. Functional Loss Findings Per Examiner
Examination Findings

1 = Pain reported by examinee
2 = Flare-ups experienced by examinee
3 = Clavicle impairment noted on exam
4 = Mechanical symptoms noted on exam

Dark = Pre-Intervention
Light = Post-Intervention
A Pearson’s Chi-Square test was calculated between Pre/Post intervention. There is a statistically significant association between Pre vs. Post Intervention for functional loss.

<table>
<thead>
<tr>
<th>Functional Loss Assessment</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Intervention</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Post-Intervention</td>
<td>7</td>
<td>18</td>
</tr>
</tbody>
</table>

p-value = 0.02
OR = 8.94 (1.01, 79.46)
Functional Loss Assessment

Number of Examinations

Pre-Functional Loss
Post-Functional Loss

p-value = 0.02
OR = 8.94 (1.01, 79.46)

Dark = Negative
Light = Positive
Functional Loss Assessment

Number of Examinations

(+Functional Loss

Examiners

Dark = Pre-Intervention

Light = Post-Intervention
**Action Plan**

**“Act”**

- Provide Additional Education
- Add Exams, i.e. knee, hip, etc.
- Use of a Different Tool
- Solicit Clinician Feedback
- Address Biases

**Desired Outcome**
What Does This Mean for Nursing?

✓ Quality Improvement Projects Provide Value and Improve Nursing Practice

✓ Use of Standardized Framework/Tools Increases Inter-rater (Examiner) Consistency

✓ Use of Evidence Based Practice in the Clinical Setting Improves Nursing Outcomes

✓ Use of Evidence Based Practice in Nursing Improves Patient Outcomes
Future Planning

- Disseminate Project Outcome To Benefit Other Clinicians
- Collaborate With Workgroups Outside VAPHS
- Solicit Input From VBA Regional Office
Challenges

✧ C&P Clinicians
✧ Organizational Complexity (VA)
✧ Midstream Events
✧ Biases
✧ Subjectivity of the Issue
✧ Dependence on Others
✧ ICF Not Specific
Bonuses
(In Addition to Intended Outcome of the Project)

✧ VA EXPO-ceptional Poster Presentation
Winner of Veterans’ Choice Award

✧ Sigma Theta Tau International
28th Annual International Conference,
July, 2017
Presenter - Dublin, Ireland
Data Security

Maintained all information in locked cabinet within locked office/exam room located in area that requires passcode for entry

All communication between stakeholders conducted via secure encrypted Outlook messaging system

Pre- and post- implementation exam files obtained from Service Line Chief who has access to the secured information

Relevant data extracted from charts and recorded in ACCESS database maintained in shared drive

Identifiers remained anonymous for clinicians, subjects, and exam reports
Thank you
References:


References:

U.S. Department of Veterans Affairs | 810 Vermont Avenue, NW Washington DC 20420
