The Struggle for evidence in physical and rehabilitation medicine

Publication rate of Randomized Controlled Trials and Systematic Reviews is growing more than in other therapeutic fields

Stefano Negrini, William Levack, Francesca Gimigliano, Chiara Arienti, Jorge Hugo Villafañe, Carlotte Kiekens

1. Clinical and Experimental Sciences Department, University of Brescia, Brescia (Italy)
2. IRCCS Fondazione Don Gnocchi, Milan (Italy)
3. Mechanical and Industrial Engineering Department, University of Brescia, Brescia (Italy)
4. ISICO (Italian Scientific Spine Institute), Milan (Italy)
Introduction

In the world of PRM, there is often a sense of a lack of high quality scientific evidence to guide clinical practice

• “A clinician with a clinical question who does a diligent search for evidence will frequently come up with nothing, not even weak research, and may have to be satisfied with findings for a different patient population and reasoning by analogy” (Dijkers et al.)

Introduction

A steady growth has been reported seen for research in physical and rehabilitation medicine (Negrini S, Eur J Phys Rehab Med 2012).

Comparing publication in 1989-2001 vs 2001-2013, rehabilitation researchers publish more than twice the number of clinical trials vs the broader healthcare field, but proportionally less systematic reviews (with and without meta-analyses) (Jesus et al, Arch Phys Med Rehab 2016).

Rate of growth of papers published in adult and pediatric rehabilitation in the period 1998-2013: general increase of papers in PRM, and particularly those of higher quality (Mimouni et al, Arch Phys Med Rehab 2016).
Aim

The aim of this study was

- to **examine trends in the publication of research evidence**
- specifically **RCTs and systematic reviews**
- in PRM literature
- **in comparison with comparable healthcare specialties**
- with specific attention to trends in recent years
Methods

Design
- Bibliometric study

Research strategy
- PubMed
- Years: 1964-2017

Under the 2nd level term “therapeutics”, we searched the 3rd level MeSH terms
- rehabilitation
- physical therapy modalities
- drug therapy

Filters
- humans
- results by year
- randomized controlled trial
- systematic reviews
- meta-analysis

To check results we searched also the 4th level more precise MeSH terms
- exercise therapy
- neurological rehabilitation
Data analysis

All data are presented either in absolute values or in relative percentages.

Regression analysis for change in time

- Linear regression
- Fractional polynomial regression

P value of less than 0.05 was considered statistically significant.

For statistical analysis, SPSS Version 20.0 (SPSS Inc, Chicago, IL) was used.
Results: growth of papers

<table>
<thead>
<tr>
<th>Growth of papers</th>
<th>Topic</th>
<th>R-squared according to the regression model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Linear model</td>
</tr>
<tr>
<td>In Medline</td>
<td>Rehabilitation</td>
<td>0.8094</td>
</tr>
<tr>
<td></td>
<td>Physical Therapy</td>
<td>0.1791</td>
</tr>
<tr>
<td>In Rehabilitation</td>
<td>Randomised Controlled Trials</td>
<td>0.7185</td>
</tr>
<tr>
<td></td>
<td>Systematic Reviews</td>
<td>0.7880</td>
</tr>
</tbody>
</table>
## Results: relative growth in different fields

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of papers per year</th>
<th>R-squared according to the regression model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Linear model</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>0.8546</td>
<td>0.9813</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>0.7603</td>
<td>0.9433</td>
</tr>
<tr>
<td>Drug Therapy</td>
<td>0.9367</td>
<td>0.9843</td>
</tr>
<tr>
<td>RCTs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>0.7185</td>
<td>0.9568</td>
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<tr>
<td>Physical Therapy</td>
<td>0.7185</td>
<td>0.9421</td>
</tr>
<tr>
<td>Drug Therapy</td>
<td>0.9546</td>
<td>0.9586</td>
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<tr>
<td>Systematic Reviews</td>
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<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>0.7096</td>
<td>0.9736</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>0.6871</td>
<td>0.9655</td>
</tr>
<tr>
<td>Drug Therapy</td>
<td>0.7461</td>
<td>0.9703</td>
</tr>
</tbody>
</table>
Differences are statistically significant (P < 0.001)
Systematic reviews

Differences are statistically significant (P < 0.001)
Meta-analysis

Differences are statistically significant \((P < 0.001)\)
Conclusion

In comparison to trends in other therapeutic fields, evidence-based research (as represented by RCTs, systematic reviews and meta-analyses) is constantly increasing in the field of PRM.

This is in contrast with the general feeling among PRM practitioners that there is a lack of evidence in the field, which is also described as one of the biggest problems faced by the specialty area by health care managers when evaluating the field.

In this context the quality of the evidence is also important to consider, but as discussed, this was beyond the scope of this paper and should be addressed in future studies.
Thank you

stefano.negrini@unibs.it
@ProfNegrini
www.dongnocchi.it - www.unibs.it

cochrane.rehabilitation@gmail.com
@CochraneRehab
www.rehabilitation.cochrane.org

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