

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	The Efficacy of the Proprioceptive Neuromuscular Facilitation (PNF) approach in stroke rehabilitation to improve basic activities of daily living and quality of life: a systematic review and meta-analysis protocol
AUTHORS	Guiu-Tula, Francesc ; Cabanas-Valdés, Rosa; Sitja-Rabert, Mercè; Urrutia, Gerard; Gomara-Toldrà, Natalia

VERSION 1 – REVIEW

REVIEWER	Francesco Tramonti Relational Psychotherapy Institute, Pisa, Italy No competing interest to declare
REVIEW RETURNED	04-Apr-2017

GENERAL COMMENTS	<p>The paper addresses an important topic but there are some problems that require attention and, in my opinion, a revision:</p> <ul style="list-style-type: none">- authors should state why they choose to select the languages of the papers included- authors' statements about the relationship between QoL and functional status are questionable: there is a plenty of studies addressing the complexity of QoL and its association with health and physical functioning. More to the point, there are studies on stroke survivors and many other neurological conditions that highlight how QoL and functional status are not so strictly related and that the principal factors that affect QoL are not necessarily related to disability. In this vein, the authors' definition of QoL is too much strict and simplified. If QoL is to be considered in this study, I think it must be conceptualized and studied in a more complex way.- English language needs substantial improvement
-------------------------	--

REVIEWER	Kate Laver Flinders University, Australia
REVIEW RETURNED	09-Apr-2017

GENERAL COMMENTS	<p>The authors have identified an appropriate gap in the literature. PNF is still widely used but there is little evidence and I conducted a quick search which failed to identify any systematic reviews.</p> <p>I note the review is registered with PROSPERO therefore I query the merit and usefulness of publishing this systematic review protocol.</p> <p>The review is not particularly innovative or complex in terms of methods. In comparison to a Cochrane Protocol the level of detail is insufficient.</p>
-------------------------	--

	<p>While there is rationale for this review the background section and identified need for this review could be stronger. Some specific notes:</p> <ol style="list-style-type: none"> 1. What does integrated approach mean? 2. It seems odd that the main outcomes of the review are ADL and QOL given that PNF is primarily designed to increase motor function 3. The term 'systematic hand search' does not make sense 4. Why restrict the search til March 2016. It should be til present. 5. There are some issues with grammar: eg 'The electronic search was had language restriction to English, Spanish, Portuguese and French that could be limit the inclusion of studies.' 6. Background: the facts and figures are dated (ie 2010)
--	--

VERSION 1 – AUTHOR RESPONSE

Reviewer 1

Reviewer Name: Francesco Tramonti

Institution and Country: Relational Psychotherapy Institute, Pisa, Italy

Please state any competing interests: No competing interest to declare

The paper addresses an important topic but there are some problems that require attention and, in my opinion, a revision:

1. Authors should state why they choose to select the languages of the papers included:

Response: We have a lack of resources to handle studies published in languages like Japanese or Chinese, among others. However, we are aware that a language restriction may lead to a publication bias. In the future, we will notice in the full manuscript this language restriction as a limitation.

2. Authors' statements about the relationship between QoL and functional status are questionable: there is a plenty of studies addressing the complexity of QoL and its association with health and physical functioning. More to the point, there are studies on stroke survivors and many other neurological conditions that highlight how QoL and functional status are not so strictly related and that the principal factors that affect QoL are not necessarily related to disability. In this vein, the authors' definition of QoL is too much strict and simplified. If QoL is to be considered in this study, I think it must be conceptualized and studied in a more complex way.

Response: On one hand, we have defined QoL in a more complex way.

On the other hand, we are aware that Dijkers showed that QoL in people with spinal cord injury is more strongly associated with participation (participation restrictions) than with activities (activity limitations), and stronger with these than with impairments. Indeed, for many years it was thought that activity limitations were more related to QoL than with participation restrictions. Of concern, however, is that many rehabilitation programs continue to focus their day-to-day service delivery on impairments and activity limitations with less emphasis on participation.

This systematic review tried to show studies which relate disability and QOL. However, we do agree, that further research on the course of QoL in stroke needs to focus on other domains of the International Classification of Functioning, Disability, and Health, especially the influence of participation on QoL.

Dijkers M. Quality of life after spinal cord injury: a meta analysis of the effects of disablement components. Spinal Cord 1997 Dec;35(12):829-840.

3. English language needs substantial improvement.

Response: A native English speaker, expert in edition and translation, has reviewed the English language. All changes in language have been tracked.

Reviewer 2

Reviewer Name: Kate Laver

Institution and Country: Flinders University, Australia

Please state any competing interests: None declared

The authors have identified an appropriate gap in the literature. PNF is still widely used but there is little evidence and I conducted a quick search which failed to identify any systematic reviews.

I note the review is registered with PROSPERO therefore I query the merit and usefulness of publishing this systematic review protocol. The review is not particularly innovative or complex in terms of methods. In comparison to a Cochrane Protocol the level of detail is insufficient.

While there is rationale for this review the background section and identified need for this review could be stronger.

Some specific notes:

1. What does integrated approach mean?

Response: The integrated approach is one of the main characteristics of the philosophy of the PNF methods. The integrated approach refers that each treatment is focused on the total human being (a comprehensive approach), but not only on specific problem or body segment.

2. It seems odd that the main outcomes of the review are ADL and QOL given that PNF is primarily designed to increase motor function.

Response: The primary goal of PNF is to help patients to achieve their highest level of function with the principles of motor control and motor learning. Furthermore, although the treatment is focused on body structures, also impact on the activity level and participation according to the International Classification of Functioning, Disability, and Health. By reducing activity limitations, PNF interventions may address the ultimate aim of rehabilitation, namely increased participation and thereby improved overall QOL.

3. The term 'systematic hand search' does not make sense

Response: We have modified the "systematic hand search" expression for "systematic electronic search".

4. Why restrict the search til March 2016. It should be til present.

Response: We have changed the search date until April 2017.

5. There are some issues with grammar: eg 'The electronic search was had language restriction to English, Spanish, Portuguese and French that could be limit the inclusion of studies.'

Response: A native English speaker, expert in edition and translation, has reviewed the English language. All changes in language have been tracked.

6. Background: the facts and figures are dated (ie 2010).

Response: The first paragraph of the introduction has been rewritten. We have added them.

VERSION 2 – REVIEW

REVIEWER	Francesco Tramonti Azienda USL Toscana Nordovest, Italy
REVIEW RETURNED	14-Jun-2017

GENERAL COMMENTS	<p>I think the paper has been improved but some problems concerning the definition of QoL still remain. In detail:</p> <ul style="list-style-type: none">- In line 22 of the introduction there is QoL instead of QoL- I think the phrase "The QoL construct has fluctuated over the years and at present has multiple conceptualizations, as a result, the clinical studies do not accurately define what QoL is and how it operates" could be changed. It is a question of complexity and multilevel approach rather than a problem of conceptualization of oL in clinical studies, which sometimes define accurately QoL, sometimes they do not.- there is another difference in the approaches to QoL studies that the authors do not mention, but that seems to be important for their study: that between health-related QoL and patient-centred QoL. The measures of the studies included by the authors seem to be focused on health-related QoL. I think this should be stated.- the phrase "Considering these aspects, it is important to focus stroke rehabilitation on the functional recovery related to movement considering that functional movement is the ability to produce and maintain balance between mobility and stability" sounds quite strange after the description of the QoL construct, as it focuses on movements after having presented the complexity of QoL. I think this is the main problem of the paper. A clearer focus on rehabilitation, ADL and specific aspects of QoL is probably needed.
-------------------------	---

REVIEWER	Kate Laver Flinders University, Australia
REVIEW RETURNED	18-Jun-2017

GENERAL COMMENTS	<p>The authors have addressed my specific comments and the quality of the English is improved.</p> <p>My main point stands - given that this systematic review has been registered with Prospero I do not see the benefit for either the authors or the journal in publishing this protocol. While the review is worthwhile, as I mentioned previously, there is nothing particularly complex or innovative about the methodology of the review.</p>
-------------------------	--

VERSION 2 – AUTHOR RESPONSE

Reviewer 1

Reviewer Name: Francesco Tramonti

Institution and Country: Azienda USL Toscana Nordovest, Italy

Please state any competing interests: None declared

Please leave your comments for the authors below

I think the paper has been improved but some problems concerning the definition of QoL still remain. In detail:

Comment: In line 22 of the introduction there is QoI instead of QoL

Response: According to the reviewer comment, we have modified the Word QoI to QoL

Comment: I think the phrase "The QoL construct has fluctuated over the years and at present has multiple conceptualizations, as a result, the clinical studies do not accurately define what QoL is and how it operates" could be changed. It is a question of complexity and multilevel approach rather than a problem of conceptualization of oL in clinical studies, which sometimes define accurately QoL, sometimes they do not.

Response: According to the reviewer comment, we have modified this paragraph in the introduction section.

Comment: There is another difference in the approaches to QoL studies that the authors do not mention, but that seems to be important for their study: that between health-related QoL and patient-centred QoL. The measures of the studies included by the authors seem to be focused on health-related QoL. I think this should be stated.

Response: We do agree with the reviewer comment. Therefore, we have modified the introduction section adding the construct of health-related QoL.

Comment; The phrase "Considering these aspects, it is important to focus stroke rehabilitation on the functional recovery related to movement considering that functional movement is the ability to produce and maintain balance between mobility and stability" sounds quite strange after the description of the QoL construct, as it focuses on movements after having presented the complexity of QoL. I think this is the main problem of the paper. A clearer focus on rehabilitation, ADL and specific aspects of QoL is probably needed.

Response: According to the reviewer comment we have modified the previous sentence to improve the connection between variables and the paragraph.

Reviewer 2

Reviewer Name: Kate Laver

Institution and Country: Flinders University, Australia

Please state any competing interests: None declared

Please leave your comments for the authors below

The authors have addressed my specific comments and the quality of the English is improved.

Comment: My main point stands - given that this systematic review has been registered with Prospero I do not see the benefit for either the authors or the journal in publishing this protocol. While the review is worthwhile, as I mentioned previously, there is nothing particularly complex or innovative about the methodology of the review.

Response: Despite our systematic review methods were registered previously in Prospero database, only a few numbers of clinicians know the specific websites to register systematic reviews. Therefore, the best way to make easily accessible our project is to publish it in an indexed journal in Medline or PEDro.

VERSION 3 – REVIEW

REVIEWER	Francesco Tramonti Pisa, Italy
REVIEW RETURNED	01-Aug-2017

GENERAL COMMENTS	<p>The protocol has been substantially improved, but I still have some concerns about the utilization and presentation of the QoL construct throughout the test. More to the point:</p> <ul style="list-style-type: none">- when the authors discuss the impact of motor functioning on QoL, I suggest the use of a less peremptory language (maybe by the use of adverbs like "often"..). The point is that motor functioning can influence QoL but it is only one of the factors. See the sentence about ADI positively influencing QoL. This is questionable, since many studies on functional status and QoL suggest that the two are not so strictly correlated. In this vein, considering the scale identified by the authors as outcome measures, I suggest the title of the article - and also many sentences of the introduction - could be better focused if explicitly related to health-related QoL.- the sentence "As a result, the majority of the clinical studies do not accurately define QoL and how it operationalize" still sounds strange, in both content and form. I suggest reading this article and others about patient-centred and health-related QoL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1120435/- When defining health-related QoL, the authors refer to "duration" of life. I think the word duration could be misleading, as it is a matter of quality rather than duration
------------------	--

VERSION 3 – AUTHOR RESPONSE

Reviewer 1

Reviewer Name: Francesco Tramonti

Institution and Country: Azienda USL Toscana Nordovest, Italy

Please state any competing interests: None declared

Please leave your comments for the authors below

The protocol has been substantially improved, but I still have some concerns about the utilization and presentation of the QoL construct throughout the test. More to the point:

Comment: when the authors discuss the impact of motor functioning on QoL, I suggest the use of a less peremptory language (maybe by the use of adverbs like "often"..). The point is that motor functioning can influence QoL but it is only one of the factors. See the sentence about ADI positively influencing QoL. This is questionable, since many studies on functional status and QoL suggest that the two are not so strictly correlated. In this vein, considering the scale identified by the authors as outcome measures, I suggest the title of the article - and also many sentences of the introduction - could be better focused if explicitly related to health-related QoL.

Response: According to the reviewer comment we have modified the paragraph in the introduction section showing more clearly that functional status is one of the factors that can affect the quality of

life but there are other factors involved in this relationship. In addition, we have softened some terms to reinforce the previous idea.

On the other hand, as we discussed in previous reviews, we are aware that Dijkers showed that QoL in people with spinal cord injury is more strongly associated with participation (participation restrictions) than with activities or functional status (activity limitations), and stronger with these than with impairments. Indeed, for many years it was thought that activity limitations were more related to QoL than with participation restrictions. Of concern, however, is that many rehabilitation programs continue to focus their day-to-day service delivery on impairments and activity limitations with less emphasis on participation.

Finally, in this systematic review, our inclusion criteria was QoL and not just HRQoL. The term QoL includes HRQoL because it is wider than HRQoL.

Our systematic review tries to take a picture of the evidence available to the present about physical therapy interventions studies that have been carried out using the PNF method and where QoL (in its different conceptualizations) has been considered as an outcome measure.

However, we agree, that further research on the course of QoL in stroke needs to focus on other domains of the International Classification of Functioning, Disability, and Health, especially the influence of participation on HRQoL. Therefore, this contribution is considered important for us in the face of future prospective studies derived from this systematic review.

Comment: The sentence "As a result, the majority of the clinical studies do not accurately define QoL and how it operationalize" still sounds strange, in both content and form. I suggest reading this article and others about patient-centred and health-related QoL:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1120435/>

Response: According to the reviewer comment we have modified the previous sentence.

Comment: When defining health-related QoL, the authors refer to "duration" of life. I think the word duration could be misleading, as it is a matter of quality rather than duration

Response: We agree with the reviewer comment. Therefore, we have modified this paragraph in the introduction section. Therefore, this contribution is considered important for us in the face of future prospective studies derived from this systematic review

VERSION 4 – REVIEW

REVIEWER	Francesco Tramonti Azienda USL Toscana Nord-ovest, Italy
REVIEW RETURNED	30-Aug-2017

GENERAL COMMENTS	In the methods section of the abstract correct "reviewers authors" (language editing) In the strenghts and limitation correct "an open eligibility criteria" (language editing) The text has been changed in the introduction and I think it needs again a proof-reading by an English native speaker. See for example the sentence "However, they do not reflect the important domains of the patients QoL and sometimes scores may be difficult to interpret".5
-------------------------	---