



Received: 09 December 2016
Accepted: 30 January 2017
First Published: 03 February 2017

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Reviewing editor:
Albert Lee, The Chinese University of Hong Kong, Hong Kong

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PHYSIOLOGY & REHABILITATION | RESEARCH ARTICLE

The co-constructive processes in physiotherapy

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Abstract: To employ a person-centred approach, it is essential to work with the patient in deciding the important issues that the physiotherapy intervention should target, and to develop and adjust the individual treatment accordingly. Those co-constructive processes of physiotherapy consist of several parts, aiming to improve patient involvement and to optimize intervention outcomes. This paper aims to discuss and bring forward the role of the co-constructive processes in physiotherapy, by using perspectives from learning strategies and quality improvement strategies. The conclusion is that co-constructive learning processes are useful theories, which can be used in unison with quality improvement strategies for optimal co-construction between patients and physiotherapists and thus improve results of physiotherapy interventions.

Subjects: Health & Society; Health Education and Promotion; Physiotherapy

Keywords: co-creation; co-design; co-evaluation; co-production; physical therapy; quality improvement; rehabilitation

1. Introduction

Why are co-constructive processes an important issue in physiotherapy? On the basis of physiotherapy being a profession aiming to improve function and health for patients, an ongoing improvement and learning process should be essential within the profession. The physiotherapy profession combines scientific knowledge with a holistic view in order to restore and maintain good health, working with both the physical and the social well-being of the individual and the population (Nicholls & Gibson, 2012). The service demands on the profession are closely linked to working with and empowering the patients to share decision-making and evaluation of their rehabilitation (Hoogeboom, Kittelson, van der Sluis, & van Meeteren, 2014). Important issues in behavioural change are

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PUBLIC INTEREST STATEMENT

It is important to work with the patient in deciding the important issues that the physiotherapy intervention should target, and to develop and adjust the individual treatment accordingly. This person-centered approach demands collaboration (co-constructive processes) between the patient and the physiotherapist in several ways.

This paper aims to discuss and bring forward the collaborative role between the patient and the physiotherapist and how co-constructive processes are useful in this regard, by using perspectives from learning strategies and quality improvement strategies.

This theoretical framework will contribute to illuminate how patients can be more active partners in both clinical and research processes in physiotherapy, and thus optimize rehabilitation.

motivation and meaningfulness. Meaningfulness can be constructed from different learning and sensemaking theories (Bandura & Adams, 1977; Weick, 1995). Sensemaking aims at influencing both patients and sensegivers (professionals) (Weick, Sutcliffe, & Obstfeld, 2005). To reach sustainable changes in behaviours, self-efficacy theory can be useful (Bandura & Adams, 1997). That implies that the physiotherapist together with the patient sets realistic, but challenging goals (Åsenlöf, 2009). It is important that the patient him/her-self sets the goals, and that the patient experiences that the goals are achievable. This implicates that the physiotherapy intervention must be meaningful to the patient, to assure the possibility of adherence to physiotherapy interventions (Papadimitriou, 2008). The knowledgebase of physiotherapy is complex and ever-changing (Shaw & DeForge, 2012), which implicates the need to understand co-constructive learning processes to improve physiotherapy interventions and their results.

2. Objectives

This paper aims to discuss and bring forward the role of the co-constructive processes in physiotherapy, by using perspectives from learning and quality improvement strategies.

3. Approach

The aim is achieved by using a normative analysis of co-constructive processes in physiotherapy. To clarify the reflections and discussion of usefulness of the co-constructive processes in physiotherapy, perspectives from learning and quality improvement strategies are presented, together with examples from clinical physiotherapy and research.

4. Observations and discussion

4.1. Learning strategies in the co-constructive processes

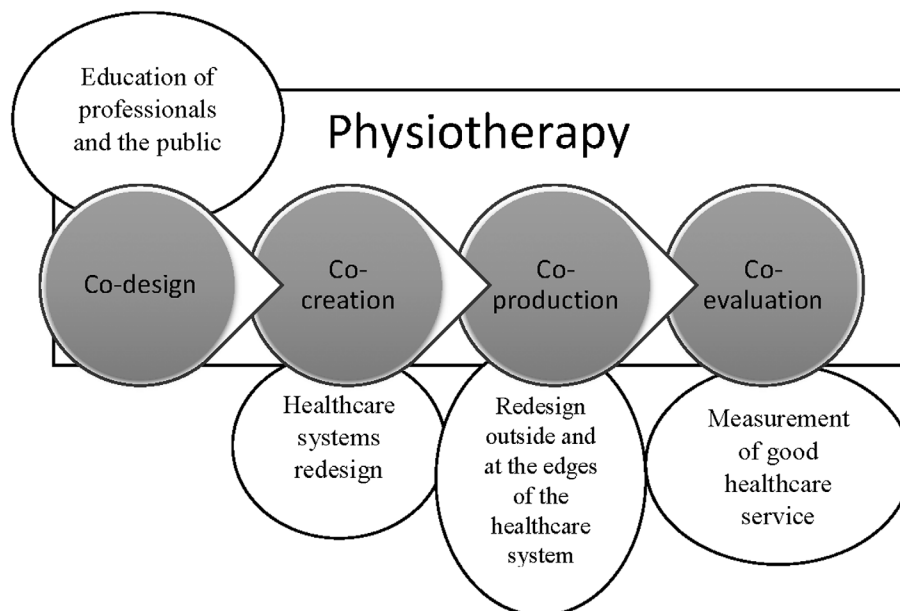
The co-constructive processes originate from the pedagogical field and aim to enable learning of skills and confidence to create independence and ownership of one's own learning (Billett, 2002; Carroll, LaPoint, & Tyler, 2001). The co-construction of knowledge is a reciprocal act of knowledge construction in which both the object and subject is transformed (Billett, 2002), thus there is a learning process together between the patient and the health care professional. The base for co-constructive learning demands that the person's prior level of learning, knowledge and cultural/social experiences, is the starting point for further learning and that the environment is created to support persons to take risks with their learning, explore modes of learning and communication, as well as unleash creative energy by breaking down traditional roles and mandating all participants to bring their knowledge, skills and energy together, in order to merge learning (Carroll et al., 2001). The co-constructive processes require regular reviews of the processes, with change of plans based on progress and learning.

4.2. Improvement strategies in the co-constructive processes

Quality improvement in health care can be defined as better patient outcomes, better system performance and better professional development (Batalden & Davidoff, 2007). In this definition learning is included in professional development, but the definition also stresses the importance of collaboration to achieve quality improvement in healthcare. In order to clarify the role of improvement strategies and co-constructive processes in physiotherapy, a framework in four steps is described (Figure 1). The framework involves both system level and patient-physiotherapist interaction.

The first step in the co-constructive processes is co-design, which in physiotherapy can be seen as planning the service together with the patient. Co-design implies active involvement of patients (users of the designed service) to incorporate their knowledge and experiences into the new system or service (Bate & Robert, 2006). In physiotherapy, stakeholders include not only patients but also their relatives, colleagues, and others in the healthcare organization involved in the care of the patient. Batalden et al. (2015) have referred to this as co-commission to gain effective services. There has been some research that includes co-design in physiotherapy, and the authors of those studies claim to be the first in their field to use co-design (Revenäs, Martin, et al., 2015; Revenäs, Opava, et al., 2015).

Figure 1. The co-constructive processes in physiotherapy.



When the service has been designed, the next step in the process is co-creation. van Limburg, Wentzel, Sanderman, and van Gemert-Pijnen (2015) have suggested that co-creation requires incorporation of multiple perspectives and demands involvement of those who are stakeholders for the planned service or intervention. Co-design and co-creation can increase the value of new technology and interventions (van Limburg et al., 2015). The difference between co-design and co-creation is not always clear in the literature. At the individual patient level, co-creation can mean to take part in the decision-making process, empowering the patients' self-determination (Longtin et al., 2010). Patients can also take an active part in the improvement of healthcare services, both by participating in improvement activities at a specific clinic and by being involved in patient organizations. Patient organizations are often involved in improving healthcare on a regional or national level. Nordgren (2009) suggested that involving patients can increase value not only for the specific patient him/herself, but also for the organization as a whole.

The third step, co-production, involves the practical performance of the prior co-design and co-creation processes. Co-production can be seen as essential by the statement that individual care should be carried out together with the patient (Ministry of Health & Social Affairs, Sweden, 1982). The demands on the individual physiotherapist are therefore not only to learn new treatment strategies, but also to establish a co-production with the patient in order to reach optimal rehabilitation with the available resources (Papadimitriou, 2008). A co-produced service can help redesign the system (Batalden et al., 2015), and hopefully, tighten the gap between the intention to incorporate patients and how the actual practice is performed in reality (Bate & Robert, 2006).

The fourth step, co-evaluation, is an important, but often neglected, part of the co-constructive processes (Leviton, 2010). The evaluation should also be co-constructed, to benefit from what can be learned together, in order to improve both the specific patient's rehabilitation, as well as the general physiotherapy services.

4.3. Opportunities of co-construction in physiotherapy

Co-construction in physiotherapy can be seen as a process of co-creation and co-design as factors that promote co-production, and co-evaluation. Batalden et al. (2015), have described four clusters of opportunities for action in co-production, which are all applicable to physiotherapy: education of professionals and the public, healthcare systems redesign, redesign outside and at the edges of the

healthcare system, and measurement of good healthcare service. Those clusters have been used as a basis to describe and discuss the role of co-construction in physiotherapy (Figure 1).

4.3.1. *Education of professionals and the public*

There is a need to work interprofessionally to achieve person-centred care (The American Geriatrics Society Expert Panel on Person-Centered C, 2016), and this points towards the necessity of a common language and mutual understanding, as a basis for the success of the co-constructive processes. As for physiotherapists, it is recommended that they have knowledge of the co-constructive processes and how they could improve outcome of rehabilitation, not only in the collaboration between the physiotherapist and the patient, but with other healthcare professionals involved in the care of the patient. This involves the co-design of physiotherapy on both the system level and in the patient–physiotherapist interaction.

Research shows that changing the mindset of healthcare professionals to incorporate patients into service development is not easy (Batalden et al., 2015; Longtin et al., 2010; Nordgren, 2009). In the research by Sanders, Nio Ong, Sowden, and Foster (2014) it is evident that physiotherapists have difficulties in adopting new systems and changing their way of working, even if a different working model is evidence-based (Nanninga, Postema, Schonherr, van Twillert, & Lettinga, 2015). The resistance towards incorporating new research into clinical practice could be due to problems of knowledge production rather than knowledge transfer (Nanninga et al., 2015), but knowledge transfer may also be problematic, both between researchers and clinicians, as well as between patients and researchers/clinicians. The co-construction of knowledge, where the experience of patients, the evidence of research, and the practical knowledge of the clinical physiotherapist are taken into account, should be a basis in physiotherapy services and thus lead to increased outcome. Co-construction, if working properly, can not only benefit the specific patient but also create value from a broader perspective (Nordgren, 2009).

The public (the patients, the relatives, the society) needs to be aware of the participatory role of the individual patient in rehabilitation and how this affects the results of the treatment, the amount of treatment needed, and the long-term outcome. The physiotherapist becomes a knowledge provider of the patient's own important role of co-construction during physiotherapy sessions (Papadimitriou, 2008), and also before and after rehabilitation interventions by, for example, providing online and written information.

An increased awareness of the active role of the patients in the improvement process and in rehabilitation, could enable patients to discuss their potential as co-constructors with their physiotherapist and thereby individualize their interventions, co-designing the interventions to receive the best possible outcome, which needs to be evaluated to improve the development. Discussing interventions with the patients and sharing the decision-making increases the likelihood that patients will perform their active parts as co-producers, since the interventions are co-designed and co-created to fit each individual's capacity and context.

4.3.2. *Healthcare systems redesign*

Involvement of the patient and acknowledgement of, and adjustments to, the situated dimension are important factors in co-construction. In earlier research physiotherapists expressed a wish to work more in collaboration with the patients in planning of interventions, assessment, and goal setting, while acknowledging the barrier of the situated dimension of the physiotherapy practice and the organization (Sanders et al., 2014), thus presenting a base for the co-constructive learning processes.

In healthcare systems, the design of the system should in itself encourage co-construction. The system should be flexible in order to allow new knowledge and adaptation to the patient's needs, and thus enable co-design. In physiotherapy, this might be a question of where and how the service is provided. If the patient is to be able to actively take part in the intervention and to sustain for

example the recommended exercises in his or her own environment, it is often more relevant to perform the physiotherapy interventions in the patient's home environment. This has been researched in, for example, stroke patients, but could probably be useful for other patient groups as well (Siemonsma, Döpp, Alpay, & Tak, 2014).

Another challenge in redesigning physiotherapy is the shift of power. The healthcare system has traditionally taken over the power and decision-making of persons in need of care and rehabilitation (Nordgren, 2009). By embracing the knowledge of the patient and collaborating with the patient, there is a shift of power from the professional to the patient, where traditional roles are changed (Billett, 2002; Kennedy, Rogers, & Bower, 2007; Norris & Kilbride, 2014). This can be challenging for both the professional and the patient, but it is a necessary step to achieve co-construction. To continue the steps of co-construction the physiotherapist must not only understand his or her own challenges but also understand the challenges of the patient. The shift of power can concern the patient's autonomy vs. the professional responsibility and delivery of evidence-based rehabilitation (Kennedy et al., 2007). The patient's personal values and life situation, with factors such as background, socioeconomic circumstances, personal experience of living with a long-term condition, local context, and domestic and family arrangements, affect the patient's ability to engage in and co-construct his/her rehabilitation (Carroll et al., 2001; Kennedy et al., 2007).

Designing healthcare systems includes designing IT systems to support co-construction. IT solutions to support rehabilitation and physical activities, patient registrations in national registries, and alternative ways of communicating/coaching (mobile apps and video conversations, for example) could be used in several ways. However, the use of technology needs to be simple and user friendly if it is to support co-construction and not risk increased administration and lack of patient contact.

4.3.3. Redesign outside and at the edges of the healthcare system

New innovations in physiotherapy as well as new co-operative partners could further increase co-construction in physiotherapy, if they were included in the design of healthcare. Involvement of sporting clubs, patient organizations, and civil organizations in the redesign of health care is important, as participation in these may be incorporated into rehabilitation. Working together in society to find ways to keep up participation for persons with disabilities or diseases is essential for quality of life. With active participation in society, patients are more likely to have goals that they are aiming for, goals that assist them in becoming even more active. Therefore, the use of co-design as a part leading to co-construction is important to improve healthcare services, including physiotherapy. However, the use of co-design is new, complex, and challenging in physiotherapy, especially since the participating patients' experiences and preferences may be diverse (Revenäs, Martin, et al., 2015). This can make co-design time-consuming, even though it may be a necessary step to reach co-construction (Carroll et al., 2001). In the study by Revenäs, Opava, et al. (2015) the use of co-design, with the active involvement of users throughout the process, was considered essential to promote viability, usability, and effectiveness of the service provided. Bate and Robert (2006) argued that service-user (patient) experiences, as well as joint ventures, are important to take into account to change and improve healthcare in the future. Patients need to be part of the (improvement) team in order to redesign healthcare in an innovative (on the edge) way (Galbraith, 2000).

4.3.4. Measurement of good healthcare service

Measuring healthcare service is complex, as is measuring the outcome of physiotherapy. Physiotherapy is often part of a series of treatments, and the physiotherapist is an actor together with other professionals and the patient. There is, however, a need to evaluate the effects of physiotherapy to ensure the effectiveness of interventions. Continuous development in the physiotherapy profession demands continuous education and understanding of both knowledge and clinical reasoning by the individual physiotherapist (Nicholls & Gibson, 2012). It is also important to ask whether tools for improvement are being used correctly in clinical physiotherapy practice and in physiotherapy research.

To find out whether the physiotherapy service provided is good, it is necessary that the physiotherapists have knowledge about improvement of quality, including measurements and evaluation. In comparisons of evidence for physiotherapy treatments and interventions, knowledge of quality improvement is important to consider, especially when transforming research results into clinical practice. The use of evidence-based practice (EBP) in physiotherapy varies, and assessing organizational culture is essential (Mota da Silva, da Cunha Menezes Costa, Garcia, & Costa, 2015; Scurlock-Evans, Upton, & Upton, 2014). Physiotherapists experience barriers to using research findings to change their clinical practice, and the most common barrier score is “Implications for practice are not made clear” and “The physiotherapist feels the results are not generalizable to his/her own setting”, according to Park, Choi, and Han (2015). Thus, the use of quality improvement tools might assist in overcoming barriers to implementation of new therapeutic approaches as well as the collaboration of patients within the process. Both issues are desirable by clinical physiotherapists and basis for co-construction. EBP may be enhanced by incorporating quality improvement tools, and common barriers to EBP, such as lack of time and skills, are addressed by using improvement tools. Consolidating EBP and improvement methodology can support both, and in the end benefit the patients (Glasziou, Ogrinc, & Goodman, 2011). The learning process in co-construction increases skills and one can monitor time effectiveness of the change concurrently (Carroll et al., 2001). In both co-constructive learning and quality improvement, there is a need to achieve results and track changes within the processes and to learn from the results (Carroll et al., 2001; Glasziou et al., 2011; Nelson, Batalden, & Godfrey, 2007).

5. Practical implications

Patients and others involved in healthcare services can make a great contribution by sharing their experiences, as a form of evaluation (Leviton, 2010) and as partners in the co-constructive process (Batalden et al., 2015; Carroll et al., 2001; von Thiele Schwarz, 2016). It is challenging to involve patients in co-construction of rehabilitation, since patients have varied resources regarding health, interest, time, and so forth. Interest in the result of the co-construction is a key, as is finding the path to where the responsibility of the physiotherapist lies, and also discovering facets where the patients are the leaders in the co-construction of improving health.

An example of healthcare co-construction in physiotherapy is health promotion with physical activity interventions. The involvement and the activity of the patient is the main ingredient that makes the recipe of physical activity successful. To manage this lifestyle change, the patient needs coaching from the physiotherapist, but the patient is in charge of the intervention by virtue of what he/she decides to perform and how the intervention is sustained. This is an example where the patient, as a user of service, is an obligate co-constructive partner of the service outcome (Batalden et al., 2015).

Another example where physiotherapists can increase co-construction involves providing and sharing information regarding physiotherapy interventions and health-promotion activities online, giving patients better opportunity to make informed decisions and to actively participate in their rehabilitation and to correspond online how the rehabilitation is working. This co-construction of knowledge creates a learning opportunity for both the patient and the physiotherapist (von Thiele Schwarz, 2016). The patients must be able to find relevant information from the healthcare system amongst the enormous amount of information available on the Internet and in the media, in order to become true co-constructors of health. This implicates the responsibility for physiotherapists also to provide up-to-date and evidence-based information regarding physiotherapy interventions. The patient's own knowledge must also be included in the co-constructive processes (von Thiele Schwarz, 2016), therefore it is essential to ensure that the physiotherapist gets feed-back continuously from the patient on how the rehabilitation process is working, either online or by personal contact. The concept of co-construction should be used regarding patient information, for example, in deciding together with the patient the type of information needed and how access to the information should be provided.

In physiotherapy, group exercise is common, and it is acknowledged by clinical physiotherapists that the group in itself can be a source for improving health of the patients in the group. The group in itself becomes a co-creator of health by enabling the members to share information, support each other, learn together and bring forward questions regarding rehabilitation. This co-construction of health is seldom mentioned when evaluating healthcare effects and costs of rehabilitation in exercise groups. If the physiotherapists were to bring this issue forward and inform the patients of their role as co-constructive partners in this setting, the group dynamics might result in co-construction to a higher extent.

Co-construction between physiotherapists and patients exists, but needs to be further acknowledged and taken into account to open an arena for innovation and improvement, as well as taken into consideration when evaluating research interventions.

Research is often performed with the patients as passive participants instead of as active co-constructive equal partners throughout the research process. Physiotherapists should increase patient involvement in their research to avoid missing out the important component of co-constructive resources. In physiotherapy, the patient's active participation is often essential in the intervention, and therefore involvement of the patient in the whole research process could probably have an effect on the outcome of the intervention being studied. In the field of physiotherapy, there have been studies regarding eHealth, where co-design has been used (Revenäs, Martin, et al., 2015; Revenäs, Opava, et al., 2015). E-Health is an expanding field, implicating co-construction, since it mainly is about making patients more active in their own care.

6. Conclusion

The co-constructive learning processes are useful theories, which can be used in unison with quality improvement strategies for optimal co-construction between patients and physiotherapists and thus improve results of physiotherapy interventions. Our recommendation is that physiotherapists should have an understanding of the usefulness of co-constructive processes both in research and clinical practice.

Funding

The authors received no direct funding for this research.

Competing Interests

The authors declare no competing interest.

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Citation information

Cite this article as: The co-constructive processes in physiotherapy, Kristina Areskoug Josefsson & Ann-Christine Andersson, *Cogent Medicine* (2017), 4: 1290308.

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