What is complexity of hospital-based physiotherapy from the perspective of physiotherapists themselves? A grounded theory study

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ABSTRACT

Background The concept of ‘complexity’ is widely used by healthcare professionals in patient care. However, it is not completely understood. The inappropriate use and incorrect understanding of complexity lead to ambiguity for hospital-based physiotherapists in dealing with complex patients and work situations.

Objectives To develop an understanding of complexity for hospital-based physiotherapy from the perspective of physiotherapists themselves.

Design A grounded theory study was conducted using data from face-to-face, semi-structured interviews with purposive sampled hospital-based physiotherapists. The sampling was used to incorporate variety in hospital work experience, field of expertise and gender. The interviews were conducted in three different types of Dutch hospitals. A conceptual model and grounded theory were constructed after open, axial and selective coding.

Results Twenty-four hospital-based physiotherapists were interviewed. Two core themes emerged from the data: ‘puzzle-solving’ and ‘reflecting on decisions’. The third theme—‘relationship between learning, adapting and complexity’—describes how hospital-based physiotherapists’ perceptions of complexity change over time. Complexity as a construct was interpreted as the balance between context and patient-related factors on the one hand and therapist-related factors on the other.

Conclusions Hospital-based physiotherapists encounter complexity during performing job-related activities and decision-making. Complexity depends on balancing context and patient-related factors and therapist-related factors. In hospital-based physiotherapy, it was perceived as challenging yet meaningful. Complexity contributes to becoming more competent and, as such, a balance between complex and non-complex activities should be sought for hospital-based physiotherapists.

INTRODUCTION

The term ‘complexity’ is frequently used in guidelines, professional competence profiles, scientific papers and policy documents in relation to hospital-based physiotherapists’ (hereinafter ‘HBPs’) work.1 Despite the regular use, its meaning is typically insufficiently explained for application in practice.2-6 On top of that, complexity is often confused with complicated. Sturmeberg and Martin7 state that, although both complex systems and complicated systems have many intricate elements that interact with one another on different levels, in a complicated system these interactions are predictable and understandable, whereas in a complex system they are not. As Stockley and Graham8 summarise it: ‘it is simple enough to foretell the behaviour of a complicated system, but impossible to perform that same feat with a complex one’.

The lack of implementation of complexity as a concept leads to ambiguity and vagueness, hampering the uptake and implementation of these documents.9 10

A commonly used medical definition for complexity is: ‘a dynamic state in which the personal, social and clinical aspects of the patient’s experience operate as complicating factors’.11 This general definition, however, may not adequately reflect complexity as experienced by HBPs. Although it overlaps with the biopsychosocial approach typically employed by physiotherapists, it largely neglects therapists’ cognitive, psychomotor and affective competences.12 13 Furthermore, there is evidence that suggests...
environmental factors play an important role in experienced complexity and that it can directly impact physiotherapists’ decision-making processes. In other words, in the hospital environment, patient health conditions, treatment options and social-emotional circumstances can change quickly and sometimes unexpectedly, and this demands specific knowledge and skills. Physiotherapists must be able to adapt to medical conditions, align with other medical disciplines and handle acute medical situations. Finally, HBPs need to deal with constant changes in hospitals’ organisational structures due to the increase in older patients with more comorbidities and as their job responsibilities change.

A thorough understanding of complexity in hospital-based physiotherapy has been thus far lacking, and this has led to ambiguity and vagueness surrounding the concept. As such, the aim of this study is to develop a theory to create a better understanding of complexity of hospital-based physiotherapy from the perspective of physiotherapists themselves.

MATERIALS AND METHODS
Design
A qualitative, constructivist grounded theory study was conducted to increase the understanding of what HBPs consider clinically complex when performing daily tasks. This study was reported following the Consolidated criteria for Reporting Qualitative research (COREQ).

Researcher characteristics and reflexivity
We adopted a reflexive approach for the study. The researchers who conducted the interviews (LdZ and NK) have extensive experience as HBPs. The other authors (TJH, RN-vdS and RS) have experience with qualitative research and work in a hospital research department. RS has 15 years of management experience within a hospital physiotherapy department. Prior to the interviews, the researchers assumed that complexity would be perceived as a predominantly negative concept. We expected complexity would decrease as HBPs gained more experience. We also hypothesised that complexity had an abstract tipping point, beyond which situations and concepts became complex. The interviewers bracketed their own experiences and opinions prior to the interviews.

Participants and data collection
Individual, semi-structured and face-to-face interviews were conducted between February 2019 and May 2019. The interviews were conducted in three different types of Dutch hospitals: a university hospital (a hospital focused on specialised care and affiliated with a university), a general teaching hospital (a hospital focused on training hospital healthcare staff without an affiliated university) and a district hospital (a hospital focused on planned care). Purposeful sampling was used to incorporate variety in hospital work experience, field of expertise and gender. Department managers were consulted to achieve maximum variation in potential candidates. However, the managers were not involved in the final selection to avoid ethical issues; this was done by the researchers. Eligible HBPs needed to: work at least 8 hours a week in hospital clinical care, have at least 6 months experience as post-entry level, graduated HBPs, speak and understand the Dutch language and be willing to participate in the study. The semi-structured interviews contained probing, open-ended and non-judgmental questions. Interviews lasted 40–60 min and ended when all topics from the interview guide had been discussed extensively. The interview guide is detailed in box 1. All interviews were conducted in private meeting rooms at the participants’ work institutes to ensure voluntary and confidential consent. Field notes made during interviews were added along with the transcripts of interviews. We did not perform member checking.

Data analysis
The interview recordings were transcribed verbatim and individually coded using F4 and ATLAS.ti 8.3.16, respectively. In the open coding stage, relevant data were inductively coded in vivo, line-by-line. Next, axial coding was used to develop core categories from the open codes of the initial coding stage. Analysing also involved re-reading transcripts and re-listening to audio until the researchers were familiar with the data. Finally, selective coding was used to provide relationships between core categories. Throughout the coding stages, we applied constant comparison analyses between data, field notes, codes and categories. This iterative and recursive process was used to generate more abstract concepts and to find consistencies and differences that contributed to refining the theory. During the coding process, multiple discussion meetings were arranged between members of the research team. The first research team meeting focused on improving the open and axial codes, adjusting the interview guide and indicating purposeful samples. The second, third and fourth meeting focused on discussing the emerging themes and constructing the conceptual model and
theory. All the themes that emerged were illustrated with quotes intended to provide concise, rich descriptions.

Quality criteria
Charmaz’s criteria of credibility, originality, resonance and usefulness were considered in this study.23 This was done through:
1. Purposeful sampling in consultation with the managers of the physiotherapy departments.
2. Using previous interviews to adjust the interview guide and highlight underexposed themes.
3. Independent interviewing, coding and theoretical conceptualisation by two researchers (LdZ and NK).
4. Discussing and reviewing of the interview guide, codes, categories and themes with a research team.
5. Asserting theoretical data saturation.

Patient and public involvement
None.

RESULTS
Of the 26 HBPs purposefully selected for interviews, 24 interviews were conducted in three hospitals—two did not reply to our invitation. Table 1 shows participants’ characteristics. Thirteen participants worked at a university hospital, six at a district hospital and five at a general teaching hospital. Work experience ranged between 1 year and 41 years (mean: 14 years, SD: 12 years). The interviews lasted 35–58 min (mean: 46 min, SD: 5 min). New themes and categories emerged from the data in the first 22 interviews. Interview 23 and 24 showed no new data, indicating theoretical data saturation.

Understanding complexity
During our interviews, HBPs explained situations they considered to be complex. HBPs used synonyms to describe complexity, such as ‘difficult’, ‘burdensome’ and ‘needing all your skills’. The opposite of complexity was described with words such as: clear, stable, basic and per-protocol.

For me, complexity means something like ‘difficult’ or ‘complicated’… But it is also a challenge, which makes me excited about my job. (Participant 19)

Based on our qualitative data, three themes emerged that provide insight into the complexity of hospital-based physiotherapy practice. The first two themes (‘puzzle-solving’ and ‘reflecting on decisions’) are directly related

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>Work experience</th>
<th>Type of hospital</th>
<th>Main expertise</th>
<th>Interview duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01</td>
<td>Female</td>
<td>5 years</td>
<td>University</td>
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<td>P02</td>
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<tr>
<td>P03</td>
<td>Female</td>
<td>2 years</td>
<td>University</td>
<td>Internal medicine, haematology, intensive care</td>
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<td>P04</td>
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<td>15 years</td>
<td>University</td>
<td>Neurosurgery, intensive care, medium care</td>
<td>35 min</td>
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<tr>
<td>P05</td>
<td>Female</td>
<td>12 years</td>
<td>District</td>
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<td>41 min</td>
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<td>P06</td>
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<td>District</td>
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<td>46 min</td>
</tr>
<tr>
<td>P10</td>
<td>Female</td>
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<td>District</td>
<td>Intensive care</td>
<td>48 min</td>
</tr>
<tr>
<td>P11</td>
<td>Female</td>
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<td>University</td>
<td>Oncology, otorhinolaryngology, abdominal surgery</td>
<td>42 min</td>
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<tr>
<td>P12</td>
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<tr>
<td>P13</td>
<td>Female</td>
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<tr>
<td>P14</td>
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<td>3 years</td>
<td>General teaching</td>
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<td>Female</td>
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<td>University</td>
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<td>P16</td>
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<td>3 years</td>
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<td>P17</td>
<td>Male</td>
<td>34 years</td>
<td>General teaching</td>
<td>Orthopaedics, pulmonary diseases, oncology</td>
<td>49 min</td>
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<tr>
<td>P18</td>
<td>Female</td>
<td>12 years</td>
<td>General teaching</td>
<td>Geriatrics, neurology</td>
<td>43 min</td>
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<tr>
<td>P19</td>
<td>Female</td>
<td>2 years</td>
<td>University</td>
<td>Paediatrics</td>
<td>46 min</td>
</tr>
<tr>
<td>P20</td>
<td>Female</td>
<td>3 years</td>
<td>University</td>
<td>Orthopaedics, traumatology</td>
<td>47 min</td>
</tr>
<tr>
<td>P21</td>
<td>Female</td>
<td>41 years</td>
<td>General teaching</td>
<td>Neurology</td>
<td>49 min</td>
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<tr>
<td>P22</td>
<td>Female</td>
<td>22 years</td>
<td>General teaching</td>
<td>Intensive care, medium care</td>
<td>53 min</td>
</tr>
<tr>
<td>P23</td>
<td>Female</td>
<td>7 years</td>
<td>University</td>
<td>Paediatrics</td>
<td>50 min</td>
</tr>
<tr>
<td>P24</td>
<td>Male</td>
<td>33 years</td>
<td>University</td>
<td>Cardio-thoracic surgery, cardiology</td>
<td>58 min</td>
</tr>
</tbody>
</table>
to the concept of complexity and express HBPs’ professional doubts. The third theme (‘The relationship between learning, adapting and complexity’) reflects the more implicit consequences of experiencing complexity in daily practice. It shows how the perceived complexity can change over time, based on how HBPs learn and adapt from experienced complexity.

**Theme 1: Puzzle-solving**

HBPs responded that their job was perceived as more complex during ‘non-routine tasks’. Routine work was described as a diagnostic, treating or evaluative activity prescribed in a protocol and executed within familiar contexts. The respondents said that routine work was associated with their level of experience and skills. Different therapists could perceive the same activities as having different levels of complexity. Non-routine work was considered as more complex in comparison to routine work. Non-routine work led to a proverbial puzzle that needed to be solved to perform the work activities adequately. So, complexity is perceived as a puzzle that needs to be solved, and the complexity of such a puzzle increases with the number and weight of patient and context-related factors. The therapist’s basic competences of responsibility and adaptability (summarised as the therapist-related factors) are tools that decrease the complexity of the puzzle and potentially even solve it. Several examples of these factors mentioned by the HBPs are described in **table 2**. Solving the puzzle is generally partly intuitive and partly conscious process.

I’m wondering: what makes a patient complex for me? Patients who are discharged because no medical problems can be objectified. Even though there are health issues that caregivers can help the patient with. […] Or patients who have a lot of different, related issues. For example, cognitive problems, physical problems, sometimes psychosocial problems. Where many factors or where, for example, one condition is influenced by another. (Participant 18)

At the same time, less experienced HBPs mentioned that adequately solving a puzzle increased their self-confidence. They believed that more experienced colleagues had higher therapeutic skill levels than they did themselves. They believed that additional experience would help them deal with complex situations in the future.

Some colleagues find it less complex because they’re more skilled and experienced in that domain of physiotherapy, and they have more affinity with it. This means they can treat those patients better than I can. (Participant 15)

However, not everyone we interviewed associated experienced complexity of the puzzle

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Examples of factors mentioned by hospital-based physiotherapists that (can) increase or decrease the experienced complexity of the puzzle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient-related factors:</strong></td>
<td>(Multiple) Comorbidities</td>
</tr>
<tr>
<td></td>
<td>Pre-existent home situation and social support</td>
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<tr>
<td></td>
<td>(Sudden change in) Cognitive status</td>
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<td></td>
<td>(Sudden change in) Behaviour</td>
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<td></td>
<td>Vulnerability</td>
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<tr>
<td></td>
<td>Obesity</td>
</tr>
<tr>
<td></td>
<td>Psychosocial problems</td>
</tr>
<tr>
<td><strong>Context-related factors:</strong></td>
<td>Type of hospital</td>
</tr>
<tr>
<td></td>
<td>Hospital department logistics</td>
</tr>
<tr>
<td></td>
<td>Ambiguity about the treatment and unclear texts in the medical record</td>
</tr>
<tr>
<td></td>
<td>Availability of after care</td>
</tr>
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<td></td>
<td>Changes in treatment over time</td>
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<td></td>
<td>Role within the team</td>
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<tr>
<td></td>
<td>Different opinion between patient and professional</td>
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<tr>
<td></td>
<td>Overall workload</td>
</tr>
<tr>
<td><strong>Therapist-related factors:</strong></td>
<td>Competences</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
</tr>
<tr>
<td></td>
<td>Emotional status and mood</td>
</tr>
<tr>
<td></td>
<td>Knowledge</td>
</tr>
<tr>
<td></td>
<td>Personality (in specific reflectivity)</td>
</tr>
<tr>
<td></td>
<td>(Personal) Ambition</td>
</tr>
</tbody>
</table>

unless strictly necessary and barely reflected on their daily activities, suggesting that experienced complexity was dependent on the therapist’s personal ambitions. Embracing complexity helped interviewees become more familiar with complex patients, which helped make future situations less challenging.

One part of complexity is personal ambition. How far do you want to go? It’s possible to work 20 years at a basic level. If you don’t want to dig deeper, you won’t dig deeper, and you can perform just fine. […] But complexity is something you have to seek for yourself. (Participant 2)

Finally, HBPs mentioned that some puzzles went unsolved. Reasons for not solving a puzzle included: too little time available, no materials available, no optimal discharge location available or differing opinions between professionals. The HBPs experienced this as being stressful and unwanted. They also mentioned that they encounter unsolvable puzzles during weekend shifts more frequently as a result of unfamiliarity with a specific department or patient population.

If I work on a department where I’m not familiar, or with a patient with a disorder I have little knowledge of, I can treat that patient, but I stick to the basics. I
do what I’m capable of. I ignore the complexity at that moment because I can’t untangle it. (Participant 2)

Theme 2: Reflecting on decisions

We asked HBPs whether they often reflected on their decisions and whether they felt comfortable and familiar or uncomfortable and unfamiliar with what they were doing. These feelings could occur after any part of daily therapeutic activities. The HBPs reflected on questions such as: Have I pushed the patient far enough in terms of frequency, intensity and time of therapy? Was it responsible to send a patient home when rehabilitation services were unavailable? Which patient should I prioritise today?

Shall I treat a patient with cancer, or shall I skip her today and take more time for my patient at the trauma department? [...] I have to make decisions like this every day. Some days it’s hard, some days it’s quite easy. (Participant 16)

HBPs found routine tasks familiar and comfortable more frequently. Feeling unfamiliar and uncomfortable mainly related to unfinished job tasks or decisions that ‘had to be made’ due to policy restrictions, which they could not influence or which they did not support. HBPs mentioned that they perceived dealing with these emotions as complex.

Particularly in the group of people who shouldn’t go home after discharge... unfortunately it’s the only possibility... If people are registered for long-term care, they are not eligible for a nursing home. And if they are not also entitled to rehabilitation for some reason, they have to go home. (Participant 18)

The interviewed HBPs believed some colleagues tended to predominantly do routine job activities and stick to the basics. Moreover, the HBPs believed that these colleagues avoided non-routine work unless strictly necessary and that these colleagues barely reflected on their daily activities, suggesting that reflecting on decisions was in some way also linked to taking responsibility. Partly, a therapists’ personal ambition influences the skill to cope with uncertainties and to become more familiar with ‘complexity’ over time, by seeking the challenge in the unpredictability. This can make that future situations can be experienced as less complex.

‘One part of complexity is personal ambition. How far do you want to go? It’s possible to work 20 years at a basic level. If you don’t want to dig deeper, you won’t dig deeper. And you can perform just fine. [...] But complexity is something you have to seek for yourself.’ (Participant 2)

Theme 3: The relationship between learning, adapting and complexity

HBPs stated that reflecting on the delivered care in combination with either comfortable or uncomfortable feelings could lead them to update their competence set. This competence set contains aspects from cognitive, psychomotor and affective domains. HBPs said they updated their competence sets by practicing basic competences, reading information about disorders, discussing cases with colleagues and finding ways to tailor care to patient preferences with support from their team members. Overall, non-routine work led to HBPs updating their competence set more often than routine work. HBPs also found that updating their competence set meant they were better at dealing with complexity.

I have had the privilege of treating a lot of children with rare developmental disorders and have become experienced with this group. We have also started scientific research into this target group. [...] You can improve your overall understanding through all information you get from colleagues. You learn a lot from that. (Participant 20)

Younger HBPs mentioned that they believed adequately solving a puzzle would increase their sense of self-confidence. They based this idea on seeing their more experienced colleagues work who they deemed on a higher therapeutic skill level than themselves. They expected that additional experience would help them deal with complex situations in the future.

‘For some colleagues it is less complex because they’re more skilled and experienced on that domain of physiotherapy, and have more affinity with it. Therefore, they can treat those patients better than I can.’ (Participant 15)

Conceptual model of complexity of hospital-based physiotherapy

Figure 1 depicts a conceptual model of how HBPs perceive complexity based on the qualitative data and the subsequent analysis.

This conceptual model is a seesaw, with context and patient-related factors on the left side and therapist-related factors on the right side. Balance is the starting position before factors are weighed by gathering information. Imbalance occurs if one side gains more weight. Imbalance can occur rapidly and repeatedly over a treatment period. Dealing with complexity is mostly an intuitive process. Imbalance results in more routine work if the therapist-related skills outweigh the patient and context-related factors, or more non-routine work if this is the other way around. If there is an imbalance either to the left or right, the ‘Ball of Reflection’ will also ‘roll’ to that side, indicating that potential reflection is related to the task and its complexity. Non-routine work is believed to often lead to reflection on feelings, decisions and performance, which results, in turn, in updating the HBP’s skillset.

Finally, the HBPs described factors that they believed increased or decreased complexity. All the factors mentioned are presented in table 2.
DISCUSSION

The HBPs reflected on complexity in a predominantly negative view, using words such as ‘difficult’ and ‘burdensome’. Simultaneously, however, the HBPs also described complexity as a challenge. Using the words and terms like ‘unique’, ‘needing all your skills’ and ‘divergent’.

The themes ‘puzzle-solving’ and ‘reflecting on decisions’ illustrate these difficulties. The last theme—‘the relationship between learning, adapting and complexity’—shows the challenging side of complexity that leads to improvement of professional capabilities after performing a complex task.

The presence and interaction between different factors which is described in the theme puzzle solving has many similarities with the complex system characteristics and approaches (sense, analyse and respond) in the theoretical framework for multimorbidity, described by Kernick.27 This study shows that complexity is a puzzle of considering different interactive perspectives which is also described in ‘the framework for untangling complexity’.28 This indicates that, although this distinction is not specifically made by the participants, the HBPs addressed complex issues rather than complicated issues.8

Several studies describe complexity as a two-tailed challenge.29–31 These studies suggest that complexity can either be seen as a challenge and positive stressor, meeting employees’ psychological needs, or as a barrier and negative stressor that should be avoided.29–31 In other words, complexity can be seen as a challenge that promotes job satisfaction, work performance, commitment, engagement, growth and accomplishment. When properly managed, complexity can contribute to employee happiness and job satisfaction, leading to physiotherapists remaining in their profession. Part of the negative side of complexity is related to moral distress. Moral distress—known as the experience of knowing what the right decision would be, however, being constrained to act on it because of institutional, regulatory or legal factors—has been well documented among healthcare professionals.32–35 HBPs who reflect on their care process can encounter this uncomfortable feeling if the quality of a care trajectory is hampered by adverse contextual factors such as waiting lists, type of hospital, access to care and limited time or resources.36 Especially in the case of limited time or resources, we found that HBPs have to choose between optimal care and productivity. This made clear that ethical dilemmas are related to a person’s own convictions, norms and values.

HBPs often experience complexity as a result of doubting whether they have performed the right tasks or have made the right decisions. Many studies, in both this and related disciplines, describe that decision making or conducting a procedure is the outcome of many steps of clinical reasoning.6 12 37–39 Decision making incorporates cognition, knowledge and meta-cognition. However, goal setting, defining patient choices and striving for more patient-centred care should also be considered in decision making.40 41 Clinical reasoning bears similarities with puzzle solving. Clinical reasoning is a partly intuitive process used to deal with concrete issues (eg, personal or context-related factors).

There is evidence that suggests that learning can be a strategy for dealing with complexity.42 43 The conceptual model that emerged from the data shows that job activities frequently lead to updating the competence set and, therefore, learning. This model is in line with the review from Stander et al.42 They discuss that HBPs prefer learning styles in which they work ‘hands-on’ and use knowledge they have attained previously.42 This indicates that learning must take place after job activities to become more skilled. According to a review by Willis et al,43 integrated clinical experience and clinical reasoning are important domains of learning for physiotherapists. The difference between novice and experienced HBPs, which was mentioned by some participants, seems to be based on pattern recognition as part of clinical reasoning.44

![Figure 1](http://bmjopen.bmj.com/)

**Figure 1** Hospital-based physiotherapists perceive complexity on a case-by-case base, where different factors can tip the scale either toward more complex or less complex.
Also, the ‘perceptual capacity’—which includes an intellectual understanding of the situation and embraced the use of imagination and an appropriate level of emotional involvement—appears to be quality HBPs attribute to more experienced colleagues.8

Both reviews present the importance of reflecting in the process of learning.42 43 The HBPs in the current study mentioned that complexity often leads to reflection and learning compared with activities perceived as less complex. HBPs mentioned that the level of complexity also depends on personal ambition. Perhaps team leaders should try to expose HBPs, in a balanced way, to ‘complexities’ in clinical care instead of shielding them (eg, by over-protocolising clinical practice). After all, these complexities will challenge therapists’ clinical reasoning skills, as complexity challenges one to not only focus on the disease and consequences but also taking personal, social and emotional factors into account.8 The latter might improve the perceived quality of work and job satisfaction. To successfully cope with complexity, Stockley and Graham8 recommend that rehabilitation specialists (such as physiotherapists) should primarily focus on stable, non-complex factors within the complex issues, as this will make the process of learning more manageable.

HBPs considered complexity to be challenging and meaningful. As such, it should be embraced to a certain extent. In the interviews, several HBPs mentioned complexity was important to their job satisfaction. They liked the challenges it presented and sometimes specifically engaged with complexity by working in certain contexts.

Strengths and limitations

This study has several strengths. First, the transferability of our findings is improved by conducting interviews in three Dutch hospitals with different physiotherapy departments and HBPs with different main areas of expertise. Second, theoretical data saturation was achieved after 22 of the 24 interviews. This could mean that the current study approaches a complete and in-depth overview of all important key facets relating to complexity in hospital-based physiotherapy in the Dutch context.

There, however, are some limitations too. First, new insights during the study and the updated interview guide could not be used in the interviews with HBPs from all the different hospitals as a result of the interview order. It was not possible to adequately allocate the HBPs of each hospital before and after revising the interview guide. Ideally, there would have been an iterative process of interviewing at every research site. Second, interviews were conducted by researchers with a background in hospital-based physiotherapy. This might have led to early biased interpretations. Third, we were not able to use different data sources for data triangulation. An attempt was made to make observations but, in practice, this was not feasible. However, this provided us with the opportunity to ask in-depth follow-up questions and to imagine work-related situations.

Implications for clinical practice and future research

The conceptual model shows which key facets explain experienced complexity from the perspective of HBPs. Complexity can contribute to learning of professionals, improving quality of care and can improve job satisfaction. Although non-routine work might cost more time and effort, solving puzzles is also perceived as stimulating, and it provides input for improving competences. Learning how to deal with complexity can be facilitated by up-to-date guidelines, peer-to-peer contact and inter-professional collaboration.

Future research could focus on how HBPs and other caregivers are able to influence the factors of complexity in detail (table 2). These factors could provide valuable information on how HBPs and healthcare managers could be educated to deal with complexity. In addition, it might be interesting to evaluate how complexity in hospital-based physiotherapy relates to job satisfaction and patient-related outcomes.

CONCLUSION

HBPs encounter complexity while performing job activities and making decisions. That complexity depends on the balance between context and patient-related factors on the one hand and therapist-related factors on the other. The complexity of hospital-based physiotherapy was perceived as both challenging and meaningful. Complexity contributes to becoming more competent; as such, a balance between complex and non-complex activities should be sought for HBPs.

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