This article describes the scientific state of affairs concerning a patient education model, which integrates the Series of steps and relevant person-related factors. The Series of steps as a patient education model is discussed and positioned within other frequently used patient education models. Using scientific literature, an attempt is made to identify the interrelationships between person-related factors, in which the ‘Locus of control’ can be appointed a central role. The possible applications are also described. This article argues that attention be paid to the interaction between physiotherapist and patient during treatment and patient education. The person-related factors of the physiotherapist as well as the patient seem to play a role in influencing the patient’s behaviour with regard to promoting self-management and treatment compliance.

Key points
- Through literature study, scientific foundation is laid for the Series of steps model and the person-related factors.
- Self-management and treatment compliance of the patient can be influenced by involving the person-related factors of the patient as well as the physiotherapist.

Within physiotherapy, the importance of self-management factors and treatment compliance as means to improve the effects of therapy is underrated. These two factors can be influenced by patient education. This is why patient education is included in the proceedings of the professional profile. Already in 1994 the developments of a methodical approach of patient education using a Series of steps and a few person-related factors was instigated. This Series of steps has now been integrated in several guidelines by the Dutch Physical Therapy Association (KNGF), and the person-related factors have been integrated in the psychological conceptual framework of the Multidimensional Burden-Burden Tolerance model.

The role of self-management and treatment compliance within physiotherapy can also be found in the 2000 Bill, in which health is defined as ‘the ability of man to adequately manage the changes in their...
existence, with or without the help of people in their environment'. For professionals in care, the promotion of self-management (as a result of self-regulation) of the patient has become increasingly important. Especially in case of (potentially) chronic or recurring complaints, it is important that the patient learns to adequately and independently cope with the complaints and can handle possible changes and problems. During the treatment we also aim to increase the problem-solving abilities of the patient (empowerment), and the patient increasingly contributes to the communication and decision-making process. Patient education plays an important part in this empowerment.

Within physiotherapy, Sluijs has made an overview of patient education. Her research made clear that physiotherapists frequently give patient education concerning diagnosis, causes of the complaint, and the complaint itself. An important observation in her research was the fact that patients and physiotherapists often have different views. Patients ascribe the efficacy of treatment to other factors than the physiotherapist. Problems in patient education experienced by the physiotherapist are often attributed to the patient by the physiotherapist. They mention a lack of interest, an insufficient level of knowledge, or difficulty in communication. Person-related factors, such as motivation and self-discipline, also appear to play a role. Patients often have a more positive perception of their cooperation themselves than the physiotherapists do. Not exercising outside the sessions is ascribed by the patient to barriers they encounter, such as difficulty in planning the exercises in their daily activities (ADL). Patients also indicate that they often do not understand the exercises, that they miss positive feedback, and that the exercises take up too much time, or they think the results are insufficient. According to the patients, not so much their own person-related factors are in the way of following advice or doing exercises, but situational factors or negative expectations of the result play an important role. However, patients also mention a few person-related factors. They indicate that they sometimes experience feelings of helplessness, and that exercises that cause pain form a barrier to follow advice.

There are several explanations for the difference between the physiotherapist’s and patient’s perspective. Fosnaught and Chin A Paw et al. concluded that paramedics often conduct the education conversation according to the diagnosis-prescription model, a more directive and prescribing approach. When using this type of conversation, which is frequently applied if the physiotherapist is predominantly biomedically rather than psychosocially oriented, there is the risk that advice is not in keeping with the patient’s situation, and that the information does not come across or is easily forgotten. Research by Basset and Petrie shows that most physiotherapists believe that they have formulated goals in cooperation with the patient, when actually the patient does not always agree with these goals. Sassen identifies poor information provision and communication between care-giver and patient as material impediments in patient education. She also emphasizes the importance of a cooperative relationship. Bensing et al. speak in this regard of a ‘royal way’ in care-giving situations, in which non-verbal behaviour, such as basic skills as eye-contact, giving the patient room to talk, and in which the courage to let fall silent moments, are essential.

Within behaviour-modifying patient education, the physiotherapist can apply the so-called Series of steps. In this article this Series of steps is positioned within other patient education models, the role and type of person-related factors of the patient and physiotherapist are described, and the interrelationships of a number of person-related factors are described, based on knowledge obtained from scientific research.

**The Series of steps and person-related factors**

Recent patient education models are aimed at allowing the patients, if possible, to have direction over their health situation. Frequently used models that equip patient education, are the ‘Health Counselling model’, the ‘Stages of Change model’, the ‘Theory of planned behaviour’, the ASE-determinants model’, the ‘Self-regulation model’, and a sixth model, the Series of steps. The Series of steps by Hoenen et al. consists of the steps ‘Receptiveness’ (patient factors that impede receptiveness for treatment), ‘Understanding’ (factors that influence transfer of knowledge), ‘Willing’ (motivation), and ‘Actual practice’ (the performance of behaviour and possible barriers herein). Burgt and Verhulst have, considering the physiotherapy practice, added the steps ‘Ability to act’ (premeditated factors that impede actual practice) and ‘Maintenance’ (factors that influence maintaining behaviour), as well as a number of person-related factors. The Series of steps serves as a handle for paramedics in guiding the patient to self-management. Together the care-giver and patient
complete the steps. Continually consulting the patient offers the opportunity to adjust the course of therapy in all phases of treatment. The Series of steps is a regulating conceptual framework, which renders education moments recognizable and manageable, rather than a model that needs to be applied in a strict chronological fashion. In daily practice a possible advantage of the Series of steps over other models, is the fact that the patient’s and physiotherapist’s use of words indicate which step or steps should be focused on.

Person-related factors play an important role within patient education. For instance, person-related factors influence the different steps within the Series of steps and colour the steps, so to speak. A few important person-related factors are:

- demographical features: age, sex, civil state, education, cultural background;
- locus of control: how the patient positions possible influences on his health situation, external or internal, with himself;
- styles of attribution: that to which the patient ascribes succeeding or failing in doing exercises;
- stress and coping styles: the way in which the patient copes with situations in which he feels he is losing control over his health, and the style he applies;
- emotional state of mind: the presence of a certain emotional state of mind impeding healthy behaviour, such as coping processes, and separate emotional states of mind, such as aggression, anxiety and depression;
- pain: the way in which the patient copes with suffering, and the patient’s pain behaviour;
- somatisation: physical complaints without organic substrate as yet.

The physiotherapist is frequently confronted with these person-related factors. The central term is locus of control, a term that forms the thread through all person-related factors. The central line of thought is that locus of control influences the attribution of cause and effect, the experience of stress and the manner of coping with stress, the coping style. The first supposition is that an internal locus of control results in an internal style of attribution, and an active, problem-solving coping style. The second supposition is that the locus of control, together with the style of attribution and coping style, offers the possibility to influence emotional state of mind, coping with pain, and somatisation. Patients with an external locus of control, an external style of attribution and a passive or avoiding coping style are possibly more inclined to depression, anxiety and aggression. They will also manage their pain complaints in a more passive and avoiding way, and will sooner report physical complaints compared to patients who manage their health situation in a more directing way. A third supposition is that, vice versa, an external locus of control, an external style of attribution and a passive or avoiding coping style can lead to a certain contra productive emotional state of mind, passive or avoiding pain behaviour or somatisation. The person-related factors influence the patient’s health behaviour and possibly promote or impede constructive participation in treatment. Zimbardo argues that an internal locus of control results in an increased possibility to modify behaviour. Gaining insight into these person-related factors, their influence on the patient’s health behaviour, followed by cooperatively aiming at modified (active) behaviour, makes it possible to influence health behaviour as a whole.

Searching for evidence
First of all, in this study the different patient education models are compared. The steps ‘Receptiveness’, ‘Understanding’ and ‘Willing’ can be positioned in the preliminary and advice phase of the Health Counselling model. In this phase awakening occurs, the patient contemplates and comes to a decision. The steps ‘Ability to act’ and ‘Actual practice’ can be positioned in this model in the phase of behavioural advice and performance, aimed at actual behaviour modification. The step ‘Maintenance’ can be positioned in the third phase of the model, aimed at maintenance of behaviour and relapse prevention.

In the Stages of Change model, the step ‘Receptiveness’ can be positioned in the non-motivated phase (pre-contemplation), the step ‘Understanding’ and ‘Willing’ in the contemplation phase, the step ‘Willing’ and ‘Ability to act’ in the preparation phase, the step ‘Actual practice’ in the action phase and the step ‘Maintenance’ in the maintenance phase.
The ASE-determinants model is included in the step ‘Willing’ of the Series of steps. The steps ‘Ability to act’, ‘Actual practice’ and ‘Maintenance’ can be positioned in behavioural intention and actual behaviour.

In the Self-regulation model the steps ‘Receptiveness’ and ‘Understanding’ can be positioned within the perception of facts and emotions of illnesses and treatment possibilities. The steps ‘Willing’, ‘Ability to act’, ‘Actual practice’ and ‘Maintenance’ within actual coping. The person-related factors are more suited to be positioned within the Self-regulation model than within the Series of steps. Thus we can conclude that the various patient education models are comparable. The problem with finding evidence is the fact that there are no direct (objective) outcome measures for treatment compliance available in literature. However, different and partly overlapping and not always clearly defined factors were found, which have an indirect influence on treatment compliance. These are partly factors which possibly influence the Series of steps and/or person-related factors. Identified are: ‘knowledge and satisfaction’ (concerning received information and care), ‘pain intensity’, ‘behavioural outcomes’ (not defined), ‘emotional factors’ (positive or negative emotions), ‘functioning within the family’ (communication), ‘psychological state’ (depression, coping and anxiety). Factors were also found which served as illness outcomes which indirectly said something about treatment compliance, such as ‘general functional state’ (not defined), ‘state of health’ (not defined) and ‘quality of life’, ‘dysfunction, handicap and impairments’, ‘changes towards health behaviour’, ‘return to workspace’ and ‘used services’ (apart to care such as home care). To assess the value of the various factors they searched for a statistically significant influence of these factors on the illness outcomes, the steps of the Series of steps and the person-related factors (figure 1). Also the clinical relevance was assessed (effect size > 0.50). The scores of the different factors on statistic and clinical relevance are given in table 1.

**Series of steps**
Receptiveness, Understanding, Willing (A=attitude, S=social influences, E=own efficacy), Ability to act, Actual practice, Maintenance

**Person-related factors**
Demographical features, Locus of control, Styles of attribution, Stress and coping styles, Emotional state of mind (coping processes, aggression, anxiety, depression), Pain, Somatisation

**Figure 1 Model for treatment compliance: relations between the Series of steps, p-factors, treatment compliance and illness outcomes.**
It appears that knowledge, coping and the different emotions, apart from anxiety, contribute to treatment compliance, and that these are statistically as well as clinically relevant. The psychological state (depression, coping and anxiety) and functioning within the family are statistically relevant, but not clinically relevant. Patient education shows statistically significant effects on dysfunction, handicap and impairments, but there are no clinically relevant differences. A number of factors require further research to make scientific statements.

The relationships between locus of control, styles of attribution, coping styles and emotional state of mind (anxiety, depression), pain behaviour and suffering and somatisation are extensively researched. The most important relationships are represented below.

**Relationship between locus of control and styles of attribution on the one hand and depression and anxiety on the other**

Following Abramson et al. Weiner describes causal explanations people give for events. If patients attribute a negative event internally (I did not exercise, which explains the poor results), stable (it will never work) and globally (I do not know whether physiotherapy helps), this will result in more depression and anxiety. If patients attribute a positive event externally (I did not do anything to contribute to the result, the physiotherapist did all the work), unstable (sometimes it helps, sometimes it doesn’t, now apparently it does) and specifically (this form of physiotherapy apparently helps, which is something, but I still have to see whether the other treatments will help), this will also lead to more depression and anxiety. The theory is researched several times and was confirmed. Gladstone and Kaslow and Sweeney et al. found comparable significant relations in their meta-analysis. Maladaptive styles of attribution in young children even have predictive value for the development of future depression.

**Conclusion**

An internal or external locus of control directs the successes or disappointments of the patient (style of attribution). There is a direct relationship with the emotional states of mind anxiety and depression. If the patient attributes externally, stable and globally during treatment, this deserves attention because the patient will show less self-regulation while participating in the treatment.

**Relationship between stress and coping styles**

Theoretical as well as practical research received an impulse based on the insights of Lazarus and Folkman. Patients confronted with stress will make an (initial) assessment of the measure of threat, followed by a (second) assessment of the possibilities to influence the situation. When speaking of influence, the discernment is made between problem-oriented coping (removing stressors by actual action) and emotion-regulating coping (view the case differently). Problem-oriented coping will occur more frequently if there are sufficient influencing possibilities, emotion-regulating coping will occur in situations without influencing possibilities. Non-effective forms of coping consist of applying defensive, awaiting behaviour or the use of defence mechanisms such as intellectualising (react rationally), isolation (detach emotion from the aggravating situation), repression (repressing the aggravating situation entirely) and magical thinking (superstition).

Physical and psychological complaints, (psycho) somatic complaints, anxiety and depression will result of non-effective forms of coping. Schreurs et al. as well as Gaillard emphasize the importance of an active coping style, in other words the directional attempt to positively influence situations (internal locus of control), and the connection to health problems such as anxiety, depression, low self-esteem or more general, a psychological and physical indisposition. Karsten makes the connection with the onset of a burn-out.

The important sources of coping are the locus of control, hardness and an optimistic view of life. Hardy people are better equipped to handle adversity because they believe they can influence the stress experiences and view these situations as learning experiences. Social support and a social network also influence an effective coping.

Nolan et al. and Vingerhoets and Heck found differences in sex with regard to coping styles in relation to psychosomatic symptoms. Men prefer problem-oriented coping and women prefer emotion-regulated coping. The preference for a certain coping style appears to have been developed at an early age (4-5 years). As the years go by, the coping style becomes more effective and more realistic. Projection and acting out are less frequent, humour, altruism and repression are more frequent. A large-scale survey among Japanese young adults shows that the time at which these young adults wish
to receive medical information is connected to the extent of their beliefs that their health is dependent on the influence of others. The less they believe this the earlier they ask for information.

Table 1 Effect of patient education per outcome measure: statistical significance and clinical relevance. The interventions are all aimed at patient education in the form of behavioural therapy, education strategy, psychological interventions and self-management.

<table>
<thead>
<tr>
<th>Outcome measures</th>
<th>p</th>
<th>Effect size*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series of steps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowledge</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>satisfaction care and received information</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>Person-related factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pain intensity</td>
<td>unknown</td>
<td>yes (respondent therapy)</td>
</tr>
<tr>
<td>behavioural outcomes</td>
<td>unknown</td>
<td>yes (respondent therapy)</td>
</tr>
<tr>
<td>emotional factors</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>functioning #</td>
<td>yes</td>
<td>unknown</td>
</tr>
<tr>
<td>psychological state</td>
<td>yes</td>
<td>unknown</td>
</tr>
<tr>
<td>depression</td>
<td>yes</td>
<td>yes (negative)</td>
</tr>
<tr>
<td>coping (active)</td>
<td>yes</td>
<td>yes (long term)</td>
</tr>
<tr>
<td>anxiety</td>
<td>no</td>
<td>unknown</td>
</tr>
<tr>
<td>Illness outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>general functional state</td>
<td>unknown</td>
<td>yes (respondent therapy)</td>
</tr>
<tr>
<td>state of health and quality of life</td>
<td>no</td>
<td>conflicting</td>
</tr>
<tr>
<td>dysfunction, impairments, handicap</td>
<td>yes</td>
<td>no (negative)</td>
</tr>
<tr>
<td>change towards healthy behaviour</td>
<td>no</td>
<td>unknown</td>
</tr>
<tr>
<td>return to workplace</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>used services</td>
<td>no</td>
<td>unknown</td>
</tr>
</tbody>
</table>

* clinical relevance; # = within the family, adaptive ability patient; no = not significant or clinically relevant; p > 0.05; ES < 0.50; yes = significant or clinically relevant; p > 0.05; ES < 0.50; yes (negative) = clinically relevant, but to disadvantage of patient education: ES < 0.50.

They already have a more active coping style, an internal locus of control and will actively gather information or search for rational solutions. In a meta-analysis, Penley et al. relate an overall positive correlation between positive health outcomes and systematic problem-solving coping. An exception to this is the confronting coping style (trying to change a situation in a hostile and aggressive manner).

Conclusion Normally an active problem-oriented coping style and an internal locus of control and style of attribution increase the chance of positive treatment results based on self-management.

Relationship between coping style and emotional state of mind Weinberger et al. describe that patients who suppress stress (little anxiety, but much defensive behaviour) in stressful situations show more reaction on physiological measures (heart rate, skin reaction) behaviour reactions (reaction time, avoiding the subject) and their subjective estimation of the emotional state of mind (among which anxiety and depression), than patients with little anxiety in their personality characteristics.

Conclusion The less anxiety patients experience and the less passive or avoiding coping style, the more realistic and constructive patients cope with their health situation.

Relationship between locus of control, coping, emotions and pain behaviour and suffering Vlaeyen et al. and Leeuw et al. describe the connection between chronic pain and the emotional effects thereof, such as a high prevalence of anxiety and mood disorders and social isolation. Fear, anxiety, depression and anger are the four most typical emotions in patients with chronic pain. Köke describes that anxiety
can influence pain and movement. Fear of movement and avoiding behaviour can lead to a lower level of activity. This can lead to several negative emotions such as depression, hopelessness and powerlessness. The avoiding behaviour (passive or avoiding coping style) maintains these emotions. Vlaeyen et al. describe that the observed control of the pain increases in patients who became more active during treatment (internal locus of control, active coping style). Patients will be less prone to catastrophic thinking, experience the pain less severely and fewer activities are avoided. The depression and the extent of feeling handicapped by their complaints decrease. Based on these insights, exposure in vivo and graded activity are frequently used for the treatment of low back pain. The vicious circle 'pain — catastrophic thinking — anxiety — avoidance — impairments — pain' is attempted to be broken by aiming at active directional behaviour of the patient (internal locus of control).

The more patients believe that the outcomes of their chronic pain depend on others (care-givers or doctors) or are under the influence of coincidence/luck (external locus of control), the more they will apply a passive coping strategy. The negative effects of an external locus of control are among other things increased physical impairments, psychological distress, and less decrease of pain. Furthermore, patients are more often depressed and anxious. Fear of movement and catastrophic thinking are often determining expressions of pain management. The more patients believe they can control their pain the better they function.

**Conclusion** Stimulating self-regulating and active behaviour of the patient (internal locus of control, active coping style) can greatly influence the breaking of pain behaviour and has a positive effect on emotions such as anxiety and depression.

**Relationship between somatisation, coping and emotional state of mind** Patients who are somatically oriented, are more prone to catastrophic thinking and experience more anxiety and depression. Multiple theories on somatisation have the basic thought in common that cognitive avoidance eventually leads to continual or recurrent physiological activation, which might lead to physical (often medically inexplicable) complaints. An avoiding coping style and misattribution (an ‘illness interpretation’ of physical sensations) play an important role.

**Conclusion** The more active and problem-oriented the coping style, the sooner somatisation is broken through, which will contribute to experiencing less anxiety or depression.

**Relationship between behaviour modification and physiotherapeutic approach** Departing from the current ideas about behaviour modification, a patient oriented approach seems to be most effective when the objective is to guide the patient instead of aiming at behaviour modification in a directive way. Possible exceptions are elderly patients, patients with a certain cultural background and patients who are ill and who need a doctor’s guidance. There has been much research into the interaction between the care-giver and patient and the effect of this interaction on the patient’s behaviour and perception. Research is also available which shows that when the care-giver and the patient concur on orientation, the patient has more confidence in the care giver, will sooner follow advice, and will work harder to meet commitments. Concerning person-related factors of the physiotherapist, research has shown that older physiotherapists, compared to physiotherapists in training, have developed more skills to recognize and seize potential openings for patient education. It also shows that physiotherapists in training, more so than experienced physiotherapists, are inclined to ascribe non-compliance to a low level of education, emotional state of mind or a lack of confidence in the therapist.

Nomden concretely discusses the influence of the patient-therapist relationship and its effect on treatment compliance. Communicative and didactic skills, sincere interest in the patient, offering help to solve problems during exercise, regular positive feedback, being well-informed about new developments within the field and giving a good example are of the essence. Bruton emphasizes a positive attitude of the referrer concerning treatment compliance and a self-same attitude of the therapist. The influence of the physiotherapist’s characteristics on the patient is also identified in other studies.

**Conclusion** Although care-givers recognize that psychosocial factors can influence the care-giving relationship, they will often still use the measure of pain as point of departure for treatment.
Series of steps and person-related factors

Relevance for the physiotherapy practice: a few possibilities

Physiotherapists often have sufficient possibilities to influence behaviour to conclude (part of) the Series of steps together with the patient. In cases when the patient nevertheless has difficulty attaining behaviour modification, the relevant person-related factors can be applied. By inquiring into the person-related factors, one can quickly gain insight into possible blockades that occur during treatment, and which hinder self-regulation and treatment compliance. Questions (without getting into details) such as: ‘Did your life sometimes take a turn you did not anticipate? How did you cope with that?’ can give insight into the patient’s locus of control and coping style. Actual situations in which the treatment implies doing exercises while the patient is not compliant, the style of attribution can be associated with the locus of control, the coping style and the attributes on health behaviour. The patient will become aware of his lack of self-regulatory behaviour and his own explanation for the ‘failing’ of the treatment. Together with the patient, the problem-solving behaviour is assessed and initiated.

Possibly the physiotherapist identifies emotional states of mind which are separate or related to the complaint, such as depression and anxiety, which can impede active participation in treatment. An external locus of control, an external style of attribution, a passive or avoiding coping style, but also anxiety and depression can impede receptiveness (the step ‘Receptiveness’), the processing of information (the step ‘Understanding’), motivation (the step ‘Willing’) and actual behaviour (the step ‘Actual practice’ and ‘Maintenance’).

Usually the two emotional states of mind can be influenced by stimulating an active attitude of the patient. In the current physiotherapy practice cognitive behavioural therapy principles are frequently applied. Actual applications of this are graded activity and the ‘exposure in vivo’ approach of pain. In concurrence with the patient, the physiotherapist aims at self-regulation and treatment compliance. In this manner, anxiety, depression and pain can be influenced. Obtaining interim ‘successes’ and ‘victories’ are important objectives in this regard. Patients who frequently report complaints without organic substrate as yet, might be put back on the right track by searching for rewarding activities together with the therapist. The Series of steps is all about recognizing openings for patient education. Person-related factors are about recognizing person-related factors that impede healthy behaviour. Integration of the person-related factors in the Series of steps takes place by giving the patient insight into the influence of these factors (the steps ‘Receptiveness’, ‘Understanding’, ‘Willing’, and ‘Actual practice’) and by letting the patient experience different health behaviour (the steps ‘Actual practice’ and ‘Maintenance’) based on self-regulation.

What do we know and how do we go on? For the physiotherapy practice, the Series of steps offers an ethical and accessible method, for the physiotherapist as well as the patient, to promote self-regulatory behaviour of the patient with the objective of attaining treatment compliance. The model offers sufficient possibilities for behaviour modification in many therapeutic settings. In cases where this is not (sufficiently) so, the described and researched person-related factors offer a handle to incorporate the personal features of the patient, which are important to the patient’s health behaviour, into the treatment. The influence on the patient’s behaviour modification is also influenced by the therapeutic orientation, the manner of communication and the physiotherapist’s person-related factors. Much scientific information is available on person-related factors and their interrelationships. Relatively much information is available on the influence of coping style on other person-related factors. According to the described assumptions concerning person-related factors, the locus of control can be considered to have a central role. It directs the coping style for an important part. Future research into person-related factors can demonstrate the strength of the interrelationships within a Dutch research population. Research can also identify non-researched interrelationships between person-related factors.

The physiotherapist’s person-related factors can also be researched on their influence on self-management and treatment compliance of the patient. A hypothesis might be: will the physiotherapist rely on the patient’s self-regulation, or will he adopt an awaiting or avoiding attitude, depending on his own locus of control?

Research by Alonso, Faas et al. and Menges give an overview of this difficult process within physiotherapy, in which physiotherapists adopt the range of thoughts of a bio-psychosocial approach. There appear to be wide variations between physiotherapist’s orientations. Especially demographic
features such as nationality, age, sex, education/courses and work setting determine the physiotherapist’s orientation. Based on the literature research as described above, it can be concluded that behaviour modification of the patient will be sooner obtained if the physiotherapist’s approach is adjusted to the patient. A bio-psychosocial approach definitely enjoys preference, in which psychosocial factors with regard to efficacy of behaviour modification should be discussed at more length.

In 2003 the development of a measurement tool for the Series of steps as well as the person-related factors was initiated. Research by Alewijnse was used as a guideline for the development of questionnaires for the Series of steps and the development of a research protocol. Her study applied the ASE-model, roughly translated into the step ‘Willing’ in the Series of steps. After adding questions about the other steps, this has resulted in four questionnaires that give an overview of the patient’s treatment compliance: the ‘Actual practice and maintenance pre-questionnaire’, the ‘Actual practice and maintenance during questionnaire’, the ‘Actual practice and maintenance post 1 questionnaire’ and the ‘Actual practice and maintenance post 2 questionnaire’. Based on the Series of steps, the questionnaires give insight into the factors which influence treatment compliance (the performance of exercises). It is a subjective outcome measure. They can be filled-in before, during, at the conclusion of and a year after therapy. The questionnaire that gives an overview of the person-related factors, the ‘Actual practice and maintenance, person-related factors questionnaire’, is mainly based on existing questionnaires of which the validity and reliability have been demonstrated, such as the ‘Multidimensional Health Locus of Control scale’ (MHCL), the Four-dimensional Complaints List (4DKL), the Utrecht Coping List (UCL) and the (for clinical setting) Pain Coping and Cognition List (PCCL). Consistency between the concepts of the different questionnaires should yield a coherent testing ground for the person-related factors. The physiotherapist’s orientation can be measured using a translated version of the Doctor-patient rating scale by De Monchy et al., revised by Verhulst.

This facilitated further research into the efficacy Series of steps, the person-related factors and the physiotherapist’s orientation based on a suitable KNGF-guideline. In such a study, interrelationships between the Series of steps, the interactions between the patient’s and physiotherapist’s person-related factors, the physiotherapist’s orientation and the influence these three influencing possibilities have on self-management and treatment compliance can be scientifically demonstrated.

Abstract

State of the art: patient education using the series of steps model and person-related factors

Physiotherapists are becoming aware of the importance of self-management and therapy adherence to treatment efficacy. Patient education seems to affect both factors. In 1994, the first steps were taken to improve patient education, in the form of an article published in this journal on a systematic approach based on the “series of steps model” and knowledge of person-related factors. Today, the “series of steps model” is incorporated into several guidelines produced by the Dutch Physical Therapy Association (KNGF). The person-related factors are also part of the “Meerdimensionaal Belasting-Belastbaarheidsmodel” (transl. Multidimensional Burden-Burden tolerance Model). This article presents scientific basis for a model for patient education that incorporates the successive steps of information provision and person-related factors. This model was compared with other frequently used patient education models, and the literature was searched for evidence of interrelationships between person-related factors. Locus of control appeared to be influencing certain person-related factors. Possible applications are described. It is recommended that attention be paid to the effect of the interaction between physiotherapists and patients during treatment and patient education. Both patient and physiotherapist-related factors appear to have a role in influencing the patient’s behaviour with regard to promoting self-management and treatment compliance.

Key words
patient education
compliance
self management
self regulation
therapy outcome
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