

Лікувальна фізична культура, спортивна медицина й фізична реабілітація

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Smart Goal Setting in Physical Therapy

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Abstract:

Topicality. SMART format has been a common method of setting goals in the rehabilitation process. That is why the study of establishing SMART goals is included in the physical therapy curriculum. The experience demonstrates the need of simple and clear interpretation of SMART format to prepare physical therapists. **Purpose.** The purpose of this study was to analyze existing approaches of SMART goals formulations to choose one of the basic definitions of SMART format for educational needs and practice, and to offer a clear interpretation of selected definition. **Method.** Twenty different formulations of SMART format for general use and physical therapy were analyzed. The most common determinations have been identified and selected. Systemic analysis of definition combinations including links between them and the specific of physical therapy was performed. **Results.** In the selection of a SMART-format the following problems were identified, such as the large number of options, the repetition of the definitions based on their content, contradiction and inaccuracy and different interpretation of the same definitions.

Андрій Герцик. Постановка мети фізичної реабілітації / терапії в smart-форматі. Актуальність. SMART-формат – поширений метод постановки цілей у реабілітаційному процесі. Саме тому вивчення створення SMART-цілей входить у навчальну програму з фізичної реабілітації / терапії. Досвід показує необхідність простого й зрозумілого трактування SMART-формату для підготовки фізичних реабілітологів / терапевтів. **Мета** цього дослідження – аналіз відомих підходів до формулювання SMART-цілей для вибору одного з основних означень SMART-формату для освітніх потреб та практичної діяльності, а також чітке тлумачення вибраного означення. **Методи.** Проаналізовано 20 варіантів формулювання SMART-формату для універсального застосування та фізичної реабілітації / терапії. Виявлено та виокремлено найпоширеніші означення. Виконано системний аналіз комбінацій означень з урахуванням зв'язків між ними й особливостей фізичної терапії. **Результати.** У виборі SMART-формату виявлено такі проблеми, як велика кількість варіантів, повторення означень за змістом, суперечність і неточність, різне трактування однакових означень. Установлено основні

Андрей Герцык. Постановка целей физической реабилитации / терапии в smart-формате. Актуальность. SMART-формат является распространенным методом постановки целей в реабилитационном процессе. Именно поэтому изучение создания SMART-целей входит в учебную программу по физической реабилитации / терапии. Опыт показывает необходимость простой и понятной трактовки SMART-формата для подготовки физических реабилитологов / терапевтов. **Цель** данного исследования – анализ существующих подходов к формулировке SMART-целей для выбора одного из основных определений SMART-формата для образовательных потребностей и практической деятельности, а также предложит четкое толкование выбранного определения. **Методы.** Проанализированы 20 вариантов формулировки SMART-формата для универсального применения и физической реабилитации / терапии. Обнаружены и выделены распространенные определения. Выполнен системный анализ комбинаций определений с учетом связей между ними и особенностей физической терапии. **Результаты.** В выборе SMART-формата выявлены следующие проблемы: большое количество вариантов, повторение определений по содержанию, противоречие и неточности, разная трактовка одинаковых определений. Установлены основные требо-

The main requirements of setting combination for SMART goals in the physical therapy were defined and the goal setting features were revealed. It is established, that the choice of definitions needs only in certain combinations based on the definitions interpretation and relationships between them. Systemic resources held by the physical therapist and the patient is defined to address the research objectives. An option of SMART format for use in physical therapy is justified. *Conclusions.* Students need to be taught to formulate the physical therapy goals in one option of the SMART goal format. The ideal format is impossible. The key questions for the correct goals setting are correct definition interpretation and accurate assessment of available resources.

Key words:

subsystems of physical therapy, system resources.

вимоги до комбінації означень для встановлення SMART-цілей у фізичній реабілітації / терапії та виявлено особливості постановки цілей. Установлено, що вибір означень потрібно виконувати лише в певних комбінаціях з урахуванням трактування означень і зв'язків між ними. Для виконання завдання дослідження визначено системні ресурси, якими володіють фізичний реабілітолог / терапевт та пацієнт. Обґрунтовано варіант SMART-формату для застосування у фізичній реабілітації / терапії. *Висновки.* Студентів доцільно навчити формулювати цілі фізичної реабілітації / терапії в одному варіанті SMART-формату. Не може бути ідеального формату. Ключовими питаннями для коректної постановки цілей є правильне трактування означень і точна оцінка наявних ресурсів.

підсистеми фізичної реабілітації / терапії, системні ресурси.

визначення комбінації означень для встановлення SMART-цілей в фізичній реабілітації / терапії та виявлені особливості постановки цілей. Установлено, що вибір означень необхідно виконувати тільки в певних комбінаціях з урахуванням трактування означень і зв'язків між ними. Для рішення задачі дослідження визначені системні ресурси, якими володіють фізичний реабілітолог / терапевт та пацієнт. Обґрунтовано варіант SMART-формату для застосування у фізичній реабілітації / терапії. *Выводы.* Студентов целесообразно научить формулировать цели физической реабилитации / терапии в одном варианте SMART-формата. Не может быть идеального формата. Ключевыми вопросами для корректной постановки целей является правильная трактовка означений и точная оценка имеющихся ресурсов.

подсистемы физической реабилитации / терапии, системные ресурсы.

Introduction. Scientists and practitioners recommend the use of SMART-format for correct goals setting in various kinds of fields.

The success of rehabilitation goal achievement depends on the formulation of the goals [1]. That is why the study of establishing SMART goals is often included in the curriculum for physical therapy. The experience demonstrates the need of simple and clear interpretation of SMART format to prepare physical therapy students.

In different activities the following main features of SMART goals have been offered:

- S – specific, significant;
- M – measurable, motivational, manageable;
- A – attainable, achievable, acceptable, ambitious, agreed upon, action-oriented;
- R – realistic, relevant, reasonable, result-oriented;
- T – timely, time-bound.

Some definitions are very similar to the meaning, for example, attainable and achievable, or timely and time-bound. However, shown incomplete list of characteristics generates 288 combinations. On the one hand, it makes SMART format very universal mean for goal setting in various areas of life:

- Family and Home;
- Financial and Career;
- Spiritual and Ethical;
- Physical and Health;
- Social and Cultural;
- Mental and Educational [2].

On the other hand, it is difficult to choose the optimal combination for teachers, researchers, scientists and practitioners of a particular profession because each combination of characteristics contains different meaning, e.g.:

- S – Specific;
- M – Measurable;
- A – Achievable (or Agreed);
- R – Resourced (or Realistic, or Relevant);
- Time-based (or Timely) [3].

Different approaches of SMART-format interpretation caused by the structure and resource diversity for which format is used. It updates the problem of searching the optimal combination of requirements for setting goals in physical therapy.

Purpose. The purpose of this study is to analyze existing approaches of SMART-goals formulations, to choose one of the basic definitions of SMART-format for educational needs and practice, and to offer a clear interpretation of selected definition.

Method. Twenty different formulations of SMART-format for general use and physical therapy were analyzed. The most common designations have been identified and selected. Systemic analysis of definition combinations including links between them and the specific of physical therapy was performed. The main system resources have been determined to resolve problems of the research. These system resources are available to the physical therapist and the patient. The demands of searching optimal combination of SMART-goals features in physical therapy were formed.

Results. In the physical therapy experts suggest determining the goals in SMART-format and involve not only the physical therapist and the patient but also his family, relatives and curators into goal setting [4]. Patients who are involved in goal setting and recognize specific practice parameters (task purpose, schedule, limits) demonstrate improved commitment to practice [5, p. 410; 6].

According to the most common recommendations rehabilitation goals can be following:

- S – specific, M – measurable, A – achievable, R – realistic, T – timed [7];
- S – specific, M – measurable, A – achievable, R – realistic/relevant, T – timed [1];
- realistic, objective, measurable, limited in time [5, p.10];
- S – specific, M – measurable, A – acceptable, R – realistic, T – timeline [8].

«Online resource for special education, pediatric occupational therapy and pediatric physical therapy» not only recommends, but also explains the following SMART-goals for school based occupation and physical therapy:

- S – specific: what, why and how are you going to do it;
- M – measurable: evidence that the goal will be achieved;
- A – attainable: goal needs to be challenging, but reachable;
- R – relevant: goal should measure outcomes not activities;
- T – time-bound: deadline that the goal needs to be achieved by [9].

However, SMART-goals are often not used in a rehabilitation setting due to being time-consuming and difficult to create [10].

As previously mentioned SMART-format versions are suitable for structures with clear subordination and vertical relationships where higher managerial on their own establish goals for lower managerial. In such case, the concept of «Achievable» or «Attainable» may apply theoretical opportunity in general, and «Realistic» may concern chances for the particular person to reach goals with available resources.

«Achievable» and «Realistic» means possibilities which physical therapist according to objective reasons is not always able to predict.

The SMART-format version learning goals recommended for by Physiotherapy Alberta sounds very interesting e.g. Specific, Measurable, Action-oriented, Realistic, Time sensitive + resource constrained [11]. Certain characteristics are interpreted as follows:

- a realistic goal is practical and achievable within the defined timelines;
- time sensitive + resource constrained: the goal has a definite deadline for completion and realizes the limits of available resources.

In this combination the emphasis is on the necessity to consider all available resources, especially the time. The definitions «Realistic» and «Achievable» are not considered in isolation, but as synonyms.

To solve research problems the main requirements of setting combination for SMART-goals were defined:

- goal features should not be duplicated;
- goal features should not contradict each other;
- goals should be appropriate with the purpose of physical therapy;
- recourses of physical therapy should be considered during goals setting.

Considering all already mentioned requirements interpretation variant of SMART-format is offered:

- Specific;
- Measurable;

- Attainable, achievable;
- Relevant;
- Time-bound.

«Specific» goal should be formed clear and comprehensibly which does not allow different interpretations by participants and especially patient during rehabilitation process.

Physical therapist should follow further steps to avoid misunderstandings:

- set the goal together with the patient, taking into account his/her needs and wishes;
- describe goal functional level of the patient in the most precise way;
- always make sure that the patient understands the essence of the purpose.

«Specific» goal provides its individuality.

The goal can be considered specific, if it contains response to the question «What has to be done?».

«Measurable» goal in physical therapy has to be described by numbers or quality indicators. Without measurability it is difficult to assess progress in achieving and define the goal accomplishment. The criterion «measurability» is interpreted very similar by experts.

The goal can be considered measurable if it contains the answer to the question «how much?» or «how many?».

«Achievable» goal is connected with rehabilitation prognosis – the estimated probability of realization of rehabilitation potential. The term prognosis refers to «the predicted optimal level of improvement in function and amount of time needed to reach that level» [12]. Rehabilitation potential is a complex biological and physiological characteristics of the individual and socio-environmental factors, allowing to realize his potential ability in some extent. [13]. It can be a one-word statement: excellent, good, fair, or poor. The therapist should consider multiple factors when determining rehabilitation potential, such as the patient's condition and onset date, co-morbidity, mechanism of injury, and baseline data [5, p.15].

Characteristic «Achievable» should be considered in to aspects, such as theoretical and practical.

Factors that influence the «Achievable» are resources of physical therapy as an open social system e.g. material, financial, energetical, human, organizational, informational.

They belong to two subsystems, such as the physical therapist and the patient.

Attention should also be paid to external influences (effect of the environment and health care) which both may strengthen and weaken the resource foundation of physical therapy.

Theoretical possibility of achieving goal is respond to the question «Is it possible at all?». The answer is based mostly on physician predictions and depends on medical diagnosis, the duration of the disease, its progress and effectiveness of previous treatment and rehabilitation. This information comes from outside the system of physical therapy from the physician [14].

The theoretical aspect of achieving has more to do with the resources of subsystem called «physical therapist».

The practical possibility of achieving the goal is respond to the question «Is it possible to achieve the goal by particular patient/client?». That is why, the practical aspect of achieving the goal more concerns recourses of subsystem called «patient».

Solving research tasks came up the necessity to define main resources available to the physical therapist and the patient.

The resources of subsystem «physical therapist» can be described as follows:

- organizational: organization of the rehabilitation process in the facility and interaction with other members of the rehabilitation team;
- informative: professional knowledge (knowledge of the etiology, pathogenesis, clinical manifestations of disease, skills in rehabilitation techniques and technologies);
- material: material and technical means of rehabilitation facility, that is available to the physical therapist;
- financial: physical therapist does not have it;
- human: people, whom physical therapist may make in charge and involve into the rehabilitation process (assistants and volunteers);
- energetic: biological energy of physical therapist, which is implemented through physical interaction with the patient (manual techniques of examination and intervention); thermal and electrical energy are necessary to provide proper service;

- time: limited-time of physical therapist, the choice of the timeframe for individual sessions with the patient and the entire rehabilitation course.

The resources of subsystem «patient» can be described as follows:

- organizational: the choice of the type of rehabilitation session (under supervision, self rehabilitation sessions);
- information: relevant information for decision-making (coming from a physician, physical therapist, from other sources);
- material: technical equipment for self rehabilitation session;
- financial: social benefits (assistance, insurance) and private funds needed to pay for selected services and purchase of equipment for self rehabilitation sessions;
- human: people who can bring the patient to assist in carrying out rehabilitation (assistants, volunteers, relatives, caregivers);
- energetic: physical capacity of the patient (as part of the rehabilitation potential);
- time: an opportunity to choose the duration of some classes (under supervision and independent) and the entire rehabilitation course.

The restoration of patients` physical function to the prior level is the primary goal of physical therapy. This is its difference from other areas, often where the purpose is to improve the current situation over output levels, such as education, physical education and manufacturing. If it is not possible fully to restore the previous level of patients` functions, it is necessary to define another achievable level and set goals for it.

The goal is considered achievable if during goal setting can we receive answer to the question «Is it possible to achieve this goal with available resources?».

The criterion «Relevant» is the coordination of goals with strategic goals of treatment and rehabilitation process and their subordination to the purpose of rehabilitation.

The physical therapist must clearly understand the meaning of each goal for quick and the most completed functional recovery of the patient. If reaching the goal do not speed up the achievement of the physical rehabilitation purpose, hence, this goal should not be considered relevant. Conversely, achieving of each relevant goal is beneficial to the functioning and reaching the goal of rehabilitation. The understanding of goal appropriateness motivates patient.

Discrepancy of goals, strategic goals and purpose of rehabilitation sprays resources, makes rehabilitation longer and reduces its effectiveness.

The goal is considered relevant if it allows to answer to the question «In which way will goal achievement make closer the objective rehabilitation?».

The criterion «Time-bound» concerns the time as resource of rehabilitation and involves the specific terms or timeframe installation. Exceeding the time limit indicates a failure in reaching the goals. Consequently, there will be a number of problems that impair the rehabilitation prognosis, such as:

- the need of resources is growing;
- functional impairments can turn into structural and goal will be unattainable;
- patient loses his/her motivation;

The goal is considered determined in time if it contains respond to the question «When it is going to be achieved?».

Let`s consider some proposed definitions which were not accepted.

The criterion «Motivational» can be realized through «Relevant». Successful achievement of relevant goal promotes motivation of the patient.

«Manageable» goals are provided by external and internal connections of physical therapy system. This criterion depends on information and organizational resources.

«Acceptable» goal is a condition that can be implemented through all the proposed criteria.

«Realistic» goal is associated with the proposed criteria such as «achieving» and «determined time», though it should not be observed separately.

The criterion «Result-oriented» is not clear. It is difficult to apply to the needs of physical therapy system as a result of opened systems depends largely on the ability of its management structures to ensure optimum performance of key processes [15].

The characteristics of «Result-oriented» may be laid down in the criterion «Relevant».

Conclusions.

Single version of SMART-format goals setting in physical therapy does not exist. Various combinations of characteristics are applied and they are substantially different.

For physical therapy education needs it is offered following version of SMART-format: Specific, Measurable, Achievable, Relevant, Time-bound. This combination is devoid of duplication and contradictions and takes into account specific of physical therapy. The meaning of «Specific» and «Measurable» applies goal description with help of quality and quantity indicators. «Achievable» is assessment of available resources, «Relevant» includes benefits for functioning of the patient and «Time-bound» is time resource of rehabilitation.

Further, every physical therapist will be able to choose the format that will be suitable and appropriate according to his needs.

Literature

1. Bovend'Eerd T. J. Writing SMART rehabilitation goals and achieving goal attainment scaling: a practical guide / T. J. Bovend'Eerd, R. E. Botell, D. T. Wade // *Clin Rehab.* – 2009. – 23. – P. 352–361.
2. Donohue G. Goal Setting / G. Donohue / [Electronic recourse]. – Mode of access : <http://topachievement.com/goalsetting.html>
3. Setting SMART goals. Best Practice Training and Development / [Electronic recourse]. – Mode of access : <http://www.mif-ua.com/archive/article/34553><http://www.bestpractice.uk.com/learningzone/lzdocs/Setting%20SMART%20goals.pdf>
4. Піонтківська Н. І. Фізична реабілітація – важливий крок до незалежного життя після інсульту [Електронний ресурс] / Н. І. Піонтківська, Ю. В. Фломін, Н. І. Самосюк // *Международный неврологический журнал.* – 2012. – Режим доступу : <http://www.mif-ua.com/archive/article/34553>
5. O'Sullivan S. B. Physical rehabilitation. 6th ed. / S. B. O'Sullivan, T. J. Schmitz, G. D. Fulk. – Philadelphia, PA : F. A. Davis Company, 2014. – 1505 p.
6. Ozer M. Treatment Planning for Rehabilitation – A Patient-Centered Approach M. Ozer, O. Payton, C. Nelson. – McGraw-Hill ; New York, 2000.
7. Камаева О. В. Мультидисциплинарный подход в ведении и ранней реабилитации неврологических больных : метод. пособие. – Ч. 5 : Физическая терапия / О. В. Камаева, Полина Монро, З. Ф. Буракова, [и др.]. – СПб., 2003. – 42 с.
8. de Vries N. M. Physiotherapy to improve physical activity in community-dwelling older adults with mobility problems (Coach2Move) : study protocol for a randomized controlled trial / N. M. de Vries, J. B. Staal, S. Teerenstra, E. M. Adang, M. G. Rikkert, M. W. Nijhuis-van der Sanden // *BioMed Central.* – 2013. – № 14. – P. 434, 10.1186/1745-6215-14-434
9. Writing SMART Goals for School Based OT and PT. Your therapy source [Electronic recourse]. – Mode of access : <http://yourtherapysource.com/blog1/2015/08/26/writing-smart-goals-for-school-based-ot-and-pt/>
10. Rehman A. Post stroke rehabilitation based on SMART goals : a case study / A. Rehman, J. Berry, M. Siddiqui // *J Exp Integr Med.* – 2014. – № 4 (1). – P. 71.
11. Learning Goals + SMART Goals: A continuing competence program support tool for physiotherapists [Electronic recourse]. Mode of access : https://www.physiotherapyalberta.ca/files/reflecive_practice_learning_smart_goals.pdf

References

1. Bovend'Eerd T. J., Botell, RE, Wade, DT. (2009). Writing SMART rehabilitation goals and achieving goal attainment scaling: a practical guide. *Clin Rehab.* 23, 352–361.
2. Donohue, G. Goal Setting. Retrieved from <http://topachievement.com/goalsetting.html>
3. Setting SMART goals. Best Practice Training and Development. Retrieved from <http://www.mif-ua.com/archive/article/34553><http://www.bestpractice.uk.com/learningzone/lzdocs/Setting%20SMART%20goals.pdf>
4. Piontkivs'ka, N. I. (2012). Fizychna rehabilitaciya — vazhlyvyj krok do nezalezhnogo zhyttya pislya insultu [Physical rehabilitation – important step to independent life after cardiovascular accident]. *Mezhdunarodnyj neurologicheskij zhurnal.* Retrieved from <http://www.mif-ua.com/archive/article/34553>
5. O'Sullivan, S. B. (2014). Physical rehabilitation. Philadelphia, PA : F.A. Davis Company.
6. Ozer, M. Treatment Planning for Rehabilitation. A Patient-Centered Approach. McGraw-Hill. New York.
7. Kamaeva, O. V. (2003). Mul'tidisciplinarnyj podhod v vedenii i rannej rehabilitacii neurologicheskikh bol'nyh: metod. Posobie [Multidisciplinary approach to the maintenance and early rehabilitation of neurologic patients]. *Ch. 5: Fizicheskaja terapija.* SPb.
8. de Vries, N. M. (2013). Physiotherapy to improve physical activity in community-dwelling older adults with mobility problems (Coach2Move): study protocol for a randomized controlled trial. *BioMed Central.* 14, 434, 10.1186/1745-6215-14-434
9. Writing SMART Goals for School Based OT and PT. Your therapy source. Retrieved from <http://yourtherapysource.com/blog1/2015/08/26/writing-smart-goals-for-school-based-ot-and-pt/>
10. Rehman, A. (2014). Post stroke rehabilitation based on SMART goals: a case study. *J Exp Integr Med.* 4 (1), 71.
11. Learning Goals + SMART Goals: A continuing competence program support tool for physiotherapists. Retrieved from https://www.physiotherapyalberta.ca/files/reflecive_practice_learning_smart_goals.pdf
12. *Guide to physical therapist practice.* American Physical Therapy Association. *Phys Ther* 81:1 (2001).
13. Lysenyuk, V. P., Samosyuk, I. Z., Samosyuk, N. I., Tkalina, A. V. (2012). Reabilitacijna medycyna: osnovni ponyattya ta definiciyi [Rehabilitation medicine: main aspects and definitions]. *Mezhdunarodnyj*

12. American Physical Therapy Association : Guide to physical therapist practice // *Phys Ther.* – 81:1, 2001. – P. 46.
13. Реабілітаційна медицина: основні поняття та дефініції / В. П. Лисенюк, І. З. Самосюк, Н. І. Самосюк, А. В. Ткаліна // *Международный неврологический журнал.* – 8 (54). – 2012 [Электронный ресурс]. – Режим доступа : <http://www.mif-ua.com/archive/article/34537>.
14. Герцык А. М. К вопросу принятия решений в физической реабилитации / А. М. Герцык // *Слобожанський науково-спортивний вісник.* – Х. : ХДАФК, 2015. – № 2(46). – С. 48–52.
15. Плюта Н. В. Актуальні напрямки розвитку математичної теорії координації в складних ієрархічних системах / Н. В. Плюта, С. І. Гоменюк // *Вісник Запорізького національного університету.* – Серія : Фізико-математичні науки. – 2010. – №1. – С. 104–109.
- nevrologicheskij zhurnal.* 8 (54). Retrieved from <http://www.mif-ua.com/archive/article/34537>.
14. Gercyk, A. M. (2015). K voprosu prinjatija reshenij v fizicheskoj rehabilitacii [To the question of decision making in physical rehabilitation]. *Slobozhans'kij naukovo-sportivnij visnyk.* H. : HDAFK. 2(46), 48–52.
15. Plyuta, N. V. (2010). Aktual'ni napryamky rozvytku matematychnoyi teoriiy koordynaciyi v skladnyx iyerarxichnyx systemax [Relevant trends of mathematical coordination theory development in complex hierarchical systems]. *Visnyk Zaporiz'koho nacional'noho universytetu.* – Seriya : Fyzyko-matematychni nauky. 1, 104–109.

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