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Face validity of a simulated low back pain clinical case in physical therapy training

Validez aparente de un caso clínico simulado de dolor lumbar en formación en fisioterapia

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Abstract

Introduction: The use of clinical cases in simulated environments allows for a more realistic approach to the simulated health condition, which results in a more effective training experience for students, as they are immersed in situations they may encounter in their professional practice.
Objective: To determine the face validity of a low back pain clinical case as a clinical simulation tool in the training of physical therapy students.
Materials and methods: Study conducted to determine the face validity of a low back pain clinical case presented to physical therapy students. The case has 9 items, which were evaluated by 5 expert raters. Agreement between raters regarding the pertinence, relevance, coherence, clarity, and sufficiency of the case was established using the Fleiss' Kappa coefficient.
Results: Fleiss' Kappa for the simulated case was 0.67 (substantial agreement), and for items 1, 2, 4, and 9 was 0.97, 1.0, 0.89, and 1.0, respectively (almost perfect agreement). Furthermore, the percentage of case comprehensibility (9 items) was 95.2.
Conclusion: The face validity of the low back pain clinical case was confirmed, so its use in clinical simulation practices in the physical therapy programs offered by the Universidad de La Sabana and Universidad de Boyacá in Colombia is valid.
Keywords: Patient Simulation; Low Back Pain; Physical Therapy Specialty (MeSH).

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Resumen

Introducción. El uso de casos clínicos en ambientes simulados brinda un mejor acercamiento a la condición de salud que se intenta simular, lo que permite una mejor formación de los estudiantes al verse inmersos en situaciones a las que podrían enfrentarse en su práctica profesional.
Objetivo. Determinar la validez aparente de un caso clínico de dolor lumbar como herramienta de simulación clínica en la formación de estudiantes de fisioterapia.
Materiales y métodos. Estudio realizado para determinar la validez de apariencia de un caso clínico de dolor lumbar para ser abordado por estudiantes de fisioterapia, el cual presenta nueve elementos evaluados por cinco jueces expertos. La concordancia entre los jueces respecto a la pertinencia, relevancia, coherencia, claridad y suficiencia del caso se estableció mediante el coeficiente Kappa de Fleiss.
Resultados. El Kappa de Fleiss para el caso simulado fue 0.67 (acuerdo sustancial), y para los elementos 1, 2, 4 y 9 fue 0.97, 1.0, 0.89 y 1.0, respectivamente (acuerdo casi perfecto). Además, el porcentaje de comprensibilidad del caso (9 ítems) fue 95.2.
Conclusión. La validez aparente del caso clínico fue confirmada, por lo que su uso en prácticas de simulación clínica en los programas de fisioterapia de la Universidad de La Sabana y la Universidad de Boyacá en Colombia es válido.
Palabras clave: Simulación; Dolor de la región lumbar; Fisioterapia (DeCS).

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Introduction

Clinical simulation as a didactic strategy has proven to be effective for health students to achieve different skills and abilities in the clinical setting, strengthen their decision-making capacity, and improve their attitudes of self-confidence and teamwork.[1] Valencia-Castro *et al.*[2] define clinical simulation as a learning experience that is used to practice the work of a profession through the direct interaction of the student with the object of study, implying the construction of the student's own learning through a reflective process.

In a simulated environment, students can access a variety of simulation modalities depending on their fidelity, which may be low, medium, or high.[3] In health care, low-fidelity simulation teaching uses models that resemble a part of the human body and allow basic motor skills to be acquired in a simple procedure;[3] the medium-fidelity simulation combines the use of an anatomical part with computer software to manage basic physiological variables, such as devices for cardiopulmonary resuscitation training;[4] finally, high-fidelity simulation reproduces a real-world situation that generates a high level of interactivity with the student or simulation participants in complex situations, such as endotracheal intubation or emergencies in critical care.[5]

Therefore, clinical simulation has enabled the creation of realistic environments using simulated patients or clinical simulation equipment that help to reinforce theoretical knowledge and provide a safe environment for the patient.[2] In physical therapy, simulated environments are often used to develop decision-making skills in the cardiopulmonary field.[6]

In a systematic review, Shoemaker *et al.*,[7] described that the use of clinical simulation in this area is useful to prepare students for experiences in intensive care units, where a variety of challenges to overcome are anticipated, including functional instability of patients, monitoring physiological variables related to movement responses and physical therapy intervention, the complexity of invasive monitoring devices, among others. This has allowed them to work in a context similar to the real world and consider possible situations that explain the symptoms of a patient. In their case report, Bednarek *et al.*[8] state that using clinical simulation to teach physical therapy students about intensive care increases their confidence and interest in patient care and allows for a better experience and ability to modify assessment and treatment.

Simulation-based learning experiences in physical therapy are not only limited to the cardiopulmonary area; on the contrary, this pedagogical strategy based on experiential learning[9] is of great importance in a variety of physical therapy performance scenarios, such as outpatient care and home intervention for people with neuromuscular, musculoskeletal and integumentary disorders.[10,11] Regarding the latter, the presence of high-fidelity simulators and controlled scenarios representing various situations that resemble actual clinical experiences is indispensable since, as noted by Mori *et al.*,[12] they allow the student to interact and practice safely before confronting a real case.

Therefore, in order to create simulated scenarios in physical therapy, it is necessary to consider what the World Confederation of Physical Therapy has proposed about the standards for accreditation of professional programs in this field, since the nature of the education of physical therapists should, on the one hand, include clinical education experiences that maximize student learning and, on the other hand, contemplate an academic environment that fosters awareness of multiple perspectives, values, and social and ethical concepts.[13]

Similarly, for this purpose, the standards for best practices in clinical simulation established by the International Nursing Association of Clinical and Simulation Learning should be taken into account, including the construction of learning objectives and goals, the role of the teacher as a facilitator, the debriefing or feedback process, the assessment of participants, professional integrity, interprofessional work, and operational and logistical standards that enable such scenarios to be properly developed.[14]

Based on the above, the physical therapy teacher must recreate the problem situation during the planning of the simulated practices by developing a clinical case that contains sufficient elements to achieve the proposed learning objectives.[14] This means that the content of such cases must clearly reflect real-world experiences, so that when students are faced with the simulated situation, they have the necessary information to make a decision and demonstrate their skills.

Given this scenario, knowing about the elements required for the creation of simulated environments in physical therapy is essential for teachers who wish to interact with simulation-based didactic strategies, making the validation of these procedures necessary. Consequently, the objective of this study was to determine the face validity of a low back pain clinical case as a clinical simulation tool for the training of physical therapy students.

Materials and methods

Study carried out to determine the face validity of a low back pain clinical case presented to physical therapy students. This work is part of the project entitled "Simulation in physiotherapy students for clinical decisions during interaction with people with low back pain. Colombia", which was registered in ClinicalTrials.gov under identifier NCT04428892.

Nine essential items were taken into account in the construction of the case, which are listed and described below:

1. Identification of learning objectives to be achieved through the development of simulated practice.
2. Description of the situation the student was to encounter in the simulated scenario.
3. Information given to the student for the achievement of the stated learning objectives.
4. Medical history information related to contextual, occupational, socioeconomic, social factors and family, personal and pharmacological history, as well as the person's expectations. The following data were also col-

lected: reason for consultation, medical diagnosis, and findings of diagnostic tests.
5. Review of cardiovascular, pulmonary, musculoskeletal, neuromuscular, and integumentary systems.
6. Evidence-based tests and measures that are applied to a person with low back pain.
7. Physical therapy intervention to be performed in a person with low back pain.
8. Evolution of the situation.
9. Elements of simulated practice: description of the environment that will be needed to develop the case, characterization of the simulated patient, and required materials and equipment.[16]

Face validity for this case was measured to establish agreement between raters[17] on the content proposed in the clinical case (Annex 1) and on the concept of the case as a tool containing the characteristics required for the development of a simulated practice in physical therapy.

To this end, 5 expert raters with experience in physical therapy training processes and environments associated with clinical simulation were selected based on the criteria described by Escobar-Pérez & Cuervo-Martinez,[18] (impartiality, and availability and motivation to participate). Thus, the experts included a physician with a PhD in education and a fellowship in clinical simulation; two physical therapists with more than 15 years of experience in clinical practice; a psychologist with a PhD in education and experience in psychometrics; and a nurse who is the coordinator of the clinical practice simulation center of a nursing school in Coimbra, Portugal.

Once the raters agreed to participate in the study, they were asked to evaluate the case independently according to its relevance, pertinence and coherence, as suggested by Escobar-Pérez & Cuervo-Martinez,[18] as well as its clarity and sufficiency, as proposed by Vargas-Porras & Hernandez-Molina,[19] using a Likert rating scale with the following response options: 1: does not meet the criteria, 2: low level of compliance, 3: moderate level, and 4: high level.

To establish agreement among raters, the values assigned to the responses given for each of the 9 items by the experts were recorded in a Microsoft Excel 2016 spreadsheet, and the Fleiss' Kappa coefficient was calculated based on these data using the Reliability Calculator (ReCal) version 3.[20] The qualitative interpretation was made using the measure proposed by Landis[21] to calculate inter-observer agreement reliability, which ranges from 0 (no agreement) to 1 (maximum agreement), with values >0.7 indicating an appropriate degree of agreement.

According to the observations made by the experts and researchers, adjustments were made to the number of learning objectives to be achieved during the simulation, to the description of the information provided to the student before interacting in the simulated environment, and to the organization of the information exposed in the simulated case to avoid distractions that could interfere with the development of the simulated practice.

As a final step in the validation process, according to Ramada-Rodilla,[22] in a simultaneous session, the contents of the case study of low back pain were released to 40 fifth-semester undergraduate physical therapy students from the Universidad de Boyacá and the Universidad de La Sabana (20 students per institution) and 5 physical therapy professors from other institutions to calculate the percentage of comprehensibility of the case. A nominal variable with optional answer Yes (understands the exposed item) or No (does not comprehend the exposed item) was used for this purpose.

The study was approved by the Bioethics Committee of the Universidad de Boyacá, according to Memorandum CB 194 of June 9, 2016, and took into account the ethical principles for medical research involving human subjects of the Declaration of Helsinki[23] and the scientific, technical and administrative standards for health research established in Resolution 8430 of 1993 of the Colombian Ministry of Health.[24] In addition, all participants signed an informed consent form prior to the start of the study.

Results

The face validity process showed that a simulated low back pain clinical case had a significant degree of agreement with a total Fleiss' Kappa index score of 0.67. Regarding the agreement of each of the case items, it was found that the score of this index was 0.97, 1.0, 0.89 and 1.0 for items 1, 2, 3 and 9, respectively, indicating almost perfect agreements. This demonstrates that, in the experts' opinion, the face validity of this simulated case is appropriate, as set out in Table 1.

Table 1. Degree of agreement among experts for the 9 items of the clinical case as measured by Fleiss' Kappa Index.

	Items	Fleiss' kappa index
1	Learning Objectives	0.97
2	Description of the situation	1
3	Student information	0.68
4	Medical Record	0.89
5	Review of systems	0.80
6	Tests and measurements	0.64
7	Intervention	0.80
8	Situation/case evolution	0.70
9	Elements of simulated practice	1
Total result for simulated low back pain case		**0.67**

Source: Own elaboration.

Likewise, the comprehensibility percentages were high, indicating that the case is appropriate for developing a simulated practice in physical therapy students (Table 2 and 3).

Table 2. Percentage of students' comprehensibility.

	Items	% comprehensibility
1	Learning Objectives	98.9
2	Description of the situation	92.5
3	Student information	90.0
4	Medical Record	84.4
5	Review of systems	98.7
6	Tests and measurements	96.6
7	Intervention	97.5
8	Situation/case evolution	100
9	Items of simulated practice	98.3

Source: Own elaboration.

Table 3. Percentage of global comprehensibility of simulated low back pain case.

Case	Number of items	% comprehensibility
Case of simulated ow back pain	9	95.2

Source: Own elaboration.

Discussion

This study demonstrates that this low back pain clinical case as a clinical simulation tool is useful for training physical therapy students since it has a significant degree of agreement across all of its components and an almost perfect agreement in the sections related to learning objectives, description of the situation, medical record, and simulated practice items.

These findings corroborate Fernandez-Rodriguez's assertion[9] that the cases or situations used to contextualize the simulation-based learning experience must contain sufficient information to enable students to apply their knowledge and demonstrate how they would use it in a real-world situation.[9]

Furthermore, the Manual de Casos Clínicos Simulados by Abellan-Hervas *et al.*,[16] was taken into account in the preparation of this case, which states that when designing a simulated case, cognitive learning domains should be addressed so that students can analyze the data provided and demonstrate comprehensive application of their knowledge.

According to Abellan-Hervas *et al.*,[16] the structure of the simulated case should allow students to demonstrate attitudes related, on the one hand, to the affective domain during the interaction with the patient or simulated actor, and, on the other, to the psychomotor domain during skill development and acquisition. The present study shows that the formulation of the learning objectives to be achieved by the students and data from the medical record that provided information about the patient's personal, work, family, and health context were considered when elaborating the case.

Also, studies such as those by Barragan-Becerra *et al.*[25] and Hernandez-Ruiperez *et al.*[26] emphasize the importance of incorporating content and face validity processes into tools that facilitate learning in clinical simulation scenarios, where the comprehension, content, sequence, and layout of the documents are observed in such a way that specific cases can be standardized for the development of simulated practices. The above is consistent with the items evaluated in the simulated case here, specifically in the sequence of the physical therapy approach for a person with low back pain through the guidelines proposed by the American Physical Therapy Association (APTA),[27] such as examination (medical record, review of systems, selection and application of tests and measurements), physical therapy diagnosis and prognosis, and intervention.

Simulation-centered learning experiences, according to Urra-Medina *et al.*,[28] are based on assessing clinical judgment and developing reflective thinking skills in students. The authors also state that there are two key concepts in clinical simulation teaching: loyalty and instructors. The first refers to the degree of realism projected on the scenario, as evidenced by the fidelity of the equipment and the physical and psychological environments in which the perception of learning should be as close to the reality of the practice as possible, while the second refers to teachers who have received training and are capable of incorporating simulation into the classroom. This was considered in the case simulated here, particularly in the information presented, in the control of an outpatient scenario involving the care of a person with low back pain, and in the selection of instructors (professionals with certified experience in clinical simulation).

The Fleiss' Kappa Index (0.67) results support the face validity of this case of lumbar pain, and it is also evident that the experts' suggestions improved the design and thus the development of the simulation. However, the most divergent aspects among evaluators were those related to the number of learning objectives to be achieved and the initial description of the situation. In this regard, Fonseca *et al.*[29] state that at the start of a simulated activity, known as *prebriefing*, the rules of the simulation, the roles to be played, confidentiality, the guidelines of mutual respect, the environment, the operation of the equipment, and the general objective to be developed in the simulated scenario should be discussed. Once the learning objectives are clear, the *debriefing* or feedback process occurs, which, according to Almeida *et al.*[30] is an essential part of the simulation experience, as teachers and students assess the clinical situation and foster the development of critical judgment through reflective learning.

Therefore, the description given to the students about the situation with which they will interact should be concise and free of distracting elements for decision making, with realistic objectives for the development of the simulation within the established times, as demonstrated in the elaboration of the simulated case in this research.

In the present study, the items with the greatest agreement were those related to the information on the physical therapy examination for a person with low back

pain, which were based on what was established by the APTA guidelines.[27]

With regard to other research addressing the validity of clinical cases used in simulated environments, the literature found that Fonseca *et al.*,[30] in a study that developed and validated a maternal-child clinical simulation scenario related to humanized childbirth, established that validation had a level of agreement among evaluators >80% in all aspects evaluated, and that, as a result, this simulated scenario can strengthen the articulation between the disciplines involved in women's and children's health. In that research, as in the present study, the validation of the scenario took into account the observations of experts in the field about the information that guides the student to solve the situation to be faced, the alignment with the scientific evidence, realism, and the resources used.

In physical therapy, simulation scenarios have been validated worldwide, as described by Silberman *et al.*[6] in their study, in which 23 physical therapy doctoral students were included and 2 researchers with 10 years of experience in simulation established face validity. The simulated scenario was a physical therapy consultation with a post-operative knee replacement patient in an inpatient setting. Students identified 4 learning objectives that were met during the simulation experience, namely, interprofessional communication, preparation of the treatment environment, patient safety, and discharge planning. They completed a perception survey that was validated by 3 professors with clinical experience in hospitalization, which differs from the present study in that the process of validating the exposed case did not include students' perceptions.

There were no studies found in Colombia that validated this type of learning experience. However, the study by Cárdenas-Sánchez *et al.*[31] describes physical therapy students' perception of clinical simulation; it emphasizes the opportunity for students to integrate multiple concepts and the ability to make decisions in a clinical environment similar to the real one, as well as the fact that these scenarios may foster metacognition processes in which errors and successes are recognized. Likewise, these authors highlight areas for improvement in the *debriefing* phase and in relation to the time required to complete the activity in order to accomplish the proposed objectives, a factor that was also mentioned by the evaluators who participated in the validation of the simulated case presented here.

One of the limitations of the present study is that, although the validation of the simulated low back pain case was evaluated by peers experts in clinical simulation, the students were not involved in the design and content feedback process.

Based on the above and on the results found in this research, it is critical that all elements proposed by Sittner *et al.*,[14] for best practices in clinical simulation are considered when simulation-based learning strategies are included in physical therapy training plans and that they are consistent with the learning objectives to be achieved. This will allow to respond to the various specific and cross-cutting competencies of physical therapy professionals.

Conclusions

Face validity was established for the simulated low back pain clinical case exposed in this study, indicating that its use in clinical simulation practices in physical therapy programs at Universidad de La Sabana and Universidad de Boyacá is valid and can serve as a model for the development of simulation scenarios in other physical therapy programs throughout the country.

Conflicts of interest

None stated by the authors.

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Annex 1. Clinical case for simulated practice in people with low back pain

Case Name: Gerardo Monroy - Low back pain
Learning objectives: • To illustrate the physical therapy interaction process during the examination, evaluation, and diagnosis of a patient with low back pain. • To illustrate physical therapy interaction process during the intervention of a person with low back pain. • To demonstrate humanized treatment and communicative skills during the physical therapy approach.
Description of the situation: Gerardo, 55 years old, from Bogotá, a public service bus driver, with a two-month history of low back pain. The patient attended a consultation with general medicine, and physical therapy is requested.
Development guidelines: 5 min prebriefing 25 min examination 10 min for diagnosis formulation, prognosis, and care plan (consider the items consulted to establish care plan strategies) 25 min intervention 45 min *debriefing*

Medical record

Context of the patient

Gerardo Monroy: two-month history of low back pain.
Family context: single, no children.
Socio-economic level: 3.
Schooling: high school degree.
Health insurance entity: Salud Total.
Place of dwelling: Bosa Compartir.
Family history: mother with gastric cancer, father with arthritis.
Personal history: gout arthritis in the first metatarsophalangeal joint of the right toe (no pain currently) and high blood pressure.
Drug history: colchicine, losartan, and ibuprofen.
Physical activity habits: walking for half an hour 5 days a week.
Leisure activities: watching television and playing soccer on Sundays.
Work activity: driving a vehicle (bus) for an average of 10 hours a day, 6 days a week, sitting during the entire shift and resting in intervals of approximately fifteen minutes between route changes.
Home activities: house chores include doing the laundry and ironing on weekends.
Medical diagnosis: low back pain.
Reason for consultation: pain in the lower back of approximately 2 months, which starts mid-shift and worsens toward the end of the workday, under treatment with analgesics. Currently limited for lifting heavy objects and ironing. At the end of the working day, pain intensity is very strong.
Expectations: to be able to complete his working day without pain.
Diagnostic aids: lumbosacral spine X-ray

Case Name: Low back pain
Learning objectives: • To illustrate the physical therapy interaction process during the examination, evaluation, and diagnosis of a patient with low back pain. • To illustrate physical therapy interaction process during the intervention of a person with low back pain. • To demonstrate humanized treatment and communicative skills during the physical therapy approach.
Description of the situation: 55-year-old man, from Bogotá, a public service bus driver, with a two-month history of low back pain. The patient attended a consultation with general medicine, and physical therapy is requested. The student will wait for the person to be admitted to an outpatient service to initiate the physical therapist-patient interaction process.
Information provided to students: In order to lay the groundwork in the scenario and help participants achieve the learning objectives, they will be provided with information about the learning objectives and a general description of the health condition of a person with low back pain, including a summary of the medical record provided by general medicine to initiate assessment and management by physical therapy.
Patient examination: data concerning the individual who visits the physical therapy service and that will be examined by the student are: **Medical Record** Gerardo Monroy: two-month history of low back pain. Family context: single, living alone, no children. Socio-economic level: 3 Schooling: high school degree Health insurance entity: Salud Total. Place of dwelling: Bosa Compartir.

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Family history: mother with gastric cancer, father with arthritis. Personal history: gout arthritis in the first metatarsophalangeal joint of the right toe (no pain currently) and high blood pressure. Drug history: colchicine, losartan, and ibuprofen. Physical activity habits: walking for half an hour 5 days a week. Leisure activities: watching television and playing soccer on Sundays. Work activity: driving a vehicle (bus) for an average of 10 hours a day, 6 days a week, sitting during the entire shift and resting in intervals of approximately fifteen minutes between route changes. Home activities: house chores include doing the laundry and ironing on weekends. Medical diagnosis: Lower back pain (referral-interconsultation form). Reason for consultation: referred by general practitioner with a diagnosis of low back pain. Pain in the lower back for approximately 2 months, which starts mid-shift and worsens toward the end of the workday, under treatment with analgesics. Currently limited for lifting heavy objects and ironing. At the end of the working day, pain intensity is very strong. Expectations: to be able to complete his working day without pain. Diagnostic aids: lumbosacral spine X-ray. **Review of systems** (The student will be informed of the results of the pulmonary cardiovascular system review and will conduct a review of the musculoskeletal system.) PULMONARY CARDIOVASCULAR: no involvement NEUROMUSCULAR: no involvement MUSCULOSKELETAL: gross range of motion in upper limbs, altered trunk, altered lower quadrant. Normal gross strength in upper limbs, involved trunk, involved lower quadrant. Gross symmetry compromised. INTEGUMENTARY: no involvement. **Tests and measures** Pain: location of pain in the bilateral lumbar area, dull, intensity on the visual analogue scale at rest of 6/10 (presenting at the middle of the working day), trunk flexion movement of 5/10, trunk extension movement of 4/10, palpation of the L5-S1 paraspinal muscles of 5/10. With a 2-month history of intermittent pain, which increases during his work shift and decreases with medication. Peripheral Nerve Integrity: Negative Lasègue sign. Joint range of motion: trunk flexion with 13cm Schober's, trunk extension with 8cm Schober's (10/13/8 cm), right lateral tilt at 25°, left lateral tilt at 20°. Posture: examination by plumb and grid lateral plane: forward head position, lumbar hyperlordosis, protrusion of the abdomen, hip anteversion, hyperextended knee. Anterior plane: dropped left shoulder, pelvis aligned. Posterior plane: dropped left shoulder. Flexibility: 90-90 test: -40° to complete knee extension, positive Thomas, negative Duncan-Ely, negative Ober's. Muscle performance: abdominal muscle strength of 3/5, spinal of 3/5, gluteus maximus of 4/5, gluteus medius of 3+/5, iliopsoas of 4/5. Joint integrity: lumbar spine X-ray within normal limits. Tests are performed at the sacroiliac region: Gillette's, Patrick's, or Gaenslen's with negative results. Anthropometric characteristics: real and apparent length of lower limbs without difference, BMI= 29kg/m. **Evaluation** (Expresses clinical judgment to the patient) The patient will be verbally explained about his current health condition. **Diagnosis** A physical therapy diagnosis will be made in writing. **Prognosis** A physical therapy prognosis will be issued in writing.	
Other professional/paramedical support: A service assistant who will inform students of the need to make a physical therapy diagnosis and prognosis before proceeding. This individual will also assist students regarding elements and requirements while the individual is in their care.	
Evidence-based intervention (The student will find in the office some documents that should be previously reviewed to verify if the intervention is based on evidence). Students are expected to perform an evidence-based intervention aimed at pain management with the application of manual techniques (sedative massage, myofascial induction); for correction of mechanical or postural defects, therapeutic exercise (Williams, Mèzières, stretching).	
Education and care plan. Situation/case evolution: Throughout the interaction between the physical therapist and the patient, the latter will ask about ways to alleviate symptoms at home, as well as recommendations for managing his body mechanics at work and at home. At the end of the session, the patient will show improvement in symptoms and will express gratitude for the intervention.	
Description of the setting: Outpatient physical therapy office.	**Simulated patient and characterization:** A 55-year-old obese man
Material and equipment: general medicine referral form containing the medical diagnosis of low back pain. Physical therapy supplies: measuring tapes, scales, stadiometer, goniometer, plumb, grid, stretcher, training stairs, strength training bands, therapy balls, gait belt, oil, towels, alcohol, absorbent cotton, book chapters and articles with different levels of evidence containing intervention strategies for low back pain.	

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Debriefing for simulated practice in people with low back pain

Ideal performance based on the objective	Observed performance (no value judgments – what the student achieved)	How it was expressed: I saw that... I think that... I wonder...	What worked well Teaching point	What they learnt
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