Original Article

Elaboration and validation of content on ocular physiotherapy for the curriculum of the undergraduate Physiotherapy course

Elaboração e validação de conteúdos sobre fisioterapia ocular para matriz curricular do curso de graduação em Fisioterapia

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ABSTRACT | INTRODUCTION: Physiotherapy, one of the youngest areas of health, was born in Brazil and has continued to develop through the efforts of a category that, until 2004, comprised approximately 80,000 professionals. Ocular physiotherapy is very important in rehabilitation, as physiotherapists can work on ocular mobility, evaluate by measuring the ocular muscles involved and analyze possible pathological changes. **OBJECTIVE:** To elaborate and validate contents on ocular physiotherapy for matrices of graduation course in Physiotherapy. **METHOD:** The population of the present study consisted of 109 physiotherapists from different regions of Brazil. Participants were contacted via digital platforms online and then in a snowball format. The Informed Consent Form (TCLE) and a questionnaire-type instrument were sent to participate in the online validation. **RESULTS:** 66 participants answered the questionnaire. As for the validity of the contents proposed in the instrument, 100% (n=66) of them obtained a CVI greater than 80. In view of this, all participants (n=66) were evaluated by 100% of the specialists as indispensable. No new content was suggested by the specialists, since most of the comments were not related to the theme, but rather the construction of the syllabus for the Physiotherapy course, which was not the objective of the present study. **CONCLUSION:** This study elaborated and validated 16 main contents and two for evaluation and treatment for ocular physiotherapy in Physical Therapy graduation.

KEYWORDS: Physiotherapy. Ophthalmology. Education.

RESUMO | INTRODUÇÃO: A Fisioterapia, uma das áreas mais jovens da saúde, nasceu no Brasil e continuou a se desenvolver por meio dos esforços de uma categoria que, até 2004, era composta por aproximadamente 80.000 profissionais. A fisioterapia ocular é muito importante na reabilitação, pois os fisioterapeutas podem trabalhar a mobilidade ocular, avaliar medindo os músculos oculares envolvidos e analisar possíveis alterações patológicas. **OBJETIVO:** Elaborar e validar conteúdos sobre a fisioterapia ocular para matrizes de curso de graduação em Fisioterapia. **MÉTODO:** A população do presente estudo foi composta por 109 fisioterapeutas de diversas regiões do Brasil. Os participantes foram contatados via plataformas digitais de forma *online* e em seguida no formato bola de neve. Foi enviado o Termo de Consentimento Livre e Esclarecido (TCLE) e um instrumento tipo questionário para participar da validação *online*. **RESULTADOS:** Responderam ao questionário 66 participantes. Quanto à validade dos conteúdos propostos no instrumento, 100% (n=66) deles obtiveram um IVC superior a 80. Diante disto, todos os participantes (n=66) foram avaliados por 100% dos especialistas como indispensáveis. Nenhum conteúdo novo foi sugerido pelos especialistas, já que a maioria dos comentários não foram relacionados ao tema e sim a construção de ementa do curso de Fisioterapia, o que não era o objetivo do presente estudo. **CONCLUSÃO:** Esse estudo elaborou e validou 16 conteúdos principais e dois para avaliação e tratamento para fisioterapia ocular na graduação de Fisioterapia.

PALAVRAS-CHAVE: Fisioterapia. Oftalmologia. Educação.

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Introduction

The practice of physical therapy in Brazil began at the beginning of the century, in 1919, when the Faculdade de Medicina da Universidade de São Paulo was founded by professor Raphael de Barros.[1]

Only in 2001, a set of National Curriculum Guidelines (NCGs) was approved for use in undergraduate courses in Physiotherapy. The NSGs explain in the text of article 3: "The Graduate Program in Physiotherapy has the image of a graduate/professional physiotherapist, with generalist, humanistic, critical and reflective training, capable of working at all levels of health in nursing, with a scientific base and intellectual rigor". It is also up to the physiotherapist to exercise some practices and skills, including permanent education, which will allow professionals to learn continuously through training and practice.[2]

Physiotherapy is one of the youngest areas of health. It was born in Brazil and has continued to develop through the efforts of a category that, until 2004, comprised approximately 80,000 professionals.[3] The Conselho Federal de Fisioterapia e Terapia Ocupacional - COFFITO (Federal Council of Physiotherapy and Occupational Therapy) recognizes 15 Physiotherapy specialties, namely: Physiotherapy in Acupuncture, Aquatic, Cardiovascular, Dermato-functional, Sports, Gerontology, Work, Neurofunctional, Oncology, Respiratory, Traumato-orthopedics, Osteopathy, Chiropractic, Women's Health, and Intensive Therapy.[4]

A new field of study in search of recognition is ocular physiotherapy.[5] It is extremely important to obtain knowledge in this area of activity, since an ocular alteration can even alter respiratory and circulatory rhythms, in addition to being the cause of dizziness, headaches, and even an increase in tension in the oculocephalic pathway (connection of the eyes with the cervical region, shoulder girdle with cephalic movements).[5]

Ocular physiotherapy is an important aspect of rehabilitation. It allows physicians and physical therapists to measure ocular muscles while working with patients with appropriate exercises and clinical therapy. These treatments help patients improve their ocular mobility, allowing them to analyze their pathology and measure the effects of their treatments.[6]

The importance of eyeball mobility directly interferes with neuropsychomotor development and consequently with the process of learning to read and write, complex activities composed of multiple interdependent processes that involve motor and cognitive skills, not only assessing the individual's visual acuity but also the eye movements by extraocular muscles (coordination, speed, and vergence).[7,8]

The content of oculomotor physiotherapy can, therefore, be inserted within the curricular syllabus of the undergraduate physiotherapy course, taking into account the guidelines that guide teaching in the area. Bringing to the field of ocular physiotherapy, it is expected that the professional will be able to identify the patient with signs and symptoms of ocular dysfunction, evaluate the patient correctly and perform physiotherapeutic methods and techniques with the purpose of restoring, developing and conserve the patient's physical capacity.[9]

Regarding the skills and competencies of the physiotherapist in the field of ocular physiotherapy, the first ordinance published in the official journal of the Ministry of Health in 2007 gives the professional physiotherapist autonomy for the evaluation and treatment of patients with binocularity alterations. In the same year, a new ordinance was published in the official journal, authorizing physiotherapist assistance in Ophthalmology. In 2008, the physiotherapist joined the multidisciplinary team of visually impaired patients.[10-12]

Therefore, the objective of the present study was to develop and validate content on ocular physiotherapy for the course matrix in the Physiotherapy undergraduate course.

Methods

A Content Validation study was carried out using the modified Delphi[13] technique. The study took place from January 2021 to December of the same year, at Faculdade Pernambucana de Saúde (FPS), a higher education institution that has six undergraduate courses in the area of health: Medicine, Psychology, Nutrition, Pharmacy, Physiotherapy, and Nursing,

in addition to two professional master's programs based on active methodology in multiple learning environments. The research was approved by the Research Ethics Committee, CAEE: 5832721.2.0000.5569.

The first stage of this study consisted of a literature review of the thematic content, based on a theoretical investigation, to represent the object of study in the proposed theme to be validated by experts. The terms "Ocular Physiotherapy", "Physiotherapy Curriculum matrix", "Ophthalmic Physiotherapy", "Ocular Exercises", and "Physiotherapy" were used to search for content (articles, essays, debates, interviews, documentaries, reviews, and teaching materials), in the various databases, including: Pubmed, SciELO, CAPES periodicals, and Education Research Complete. The studies that presented contents for the construction of a curricular matrix for ocular physiotherapy were used in the construction of contents for the same. The objective of the review was to identify possible themes, including the legislative apparatus, for ocular physiotherapy. The chosen contents were used in the construction of the questionnaire, structured in 18 thematic axes, being more general subjects about ocular physiotherapy.

Once the selection of contents was completed, a questionnaire was prepared for the participants' profile, divided into two sections. Section 1, containing structured questions about the academic and professional characteristics of the participants; and section 2, with 16 contents and two of evaluation and treatment (totaling 18) related to ocular physiotherapy.

The population of the present study consisted of 109 physiotherapists from different regions of Brazil, including professors, who were initially intentionally selected via e-mail or WhatsApp/Instagram and followed by a snowball sampling, in which professionals who were selected, could indicate other professionals who had the appropriate profile to participate in the study, for example, who has worked in the area of ocular physiotherapy or who have been professors of the subject in question. Of the invited participants, 66 answered the questionnaire, therefore being the total population of the study sample.

Inclusion criteria were: physiotherapists enrolled in the Physiotherapy Council and with at least one year of experience in ocular physiotherapy; physiotherapists with specialties in Posturology and/or teacher training in posture or ocular physiotherapy and osteopathic physiotherapists with proof of title from the COFFITO or proof of title from a school of osteopathy. Exclusion criteria were: the professional guests who were away from their teaching activities due to illness or maternity/paternity leave.

Participants were contacted by e-mail or message via applications (WhatsApp and/or Instagram) and invited to participate in the study. The invitation letter was sent, followed by the link containing the electronic Free and Informed Consent Form (FICF) and the electronic questionnaire using Google® Forms.

The questionnaire was sent in a single way to the specialists, where each content was evaluated for relevance on a five-point Likert-type scale, containing the following options: "I totally agree: TA", "I partially agree: PA", "Neither agree nor disagree: NAND", "Strongly disagree: SD", "Partially disagree: PD". At the end of the questionnaire, specialists had a space for suggestions for new content and comments. The collected data were stored in Google® Forms and later organized in an Excel® spreadsheet.

The software used for the statistical analysis was SPSS 13.0 (Statistical Package for the Social Sciences) for Windows and Excel 2010. The academic and professional data of the specialists were analyzed using descriptive statistics. In the Delphi method analysis of responses the criterion of a simple majority of the evaluations, such as "totally agree" or "partially agree" was used for inclusion of the contents, and as a criterion for exclusion simple majority of the evaluations, such as "totally disagree" and "partially disagree". Responses assessed as "neither agree nor disagree" were not considered for consensus.

Results

The analysis of the contents resulted in 100% approval of the proposed contents, with no need for new execution cycles. In addition, there was also no suggestion for new content. The experts' agreement on the relevance of the items is validated using the Content Validity Index (CVI). As an acceptance criterion, an agreement ≥ 0.80 was established for the CVI for the assessment of each item and the overall assessment of the instrument.

The study population consisted of 66 volunteers, of both genders, with a predominance of females, corresponding to 84.8%, and males, 15.2%. In terms of age, 3% were between 22 and 25 years old, 12.1% were between 26 and 30 years old, 51.5% were between 30 and 40 years old, and 33.3% were 40 years old or older.

Regarding academic and professional experience, 3% (n=2) have a degree in Osteopathy (DO), while 12.1% (n=8) have a certificate in Osteopathy (CO), and 4.5% (n=3) are specialists by COFFITO in Osteopathy. 6.1% (n=4) are doctors, 12.1% (n=8) have a Master's in Education, Health or Neurofunctional Science, 36.4% (n=24) are osteopathic physiotherapists, specialists in Posturology, Visual Rehabilitation and/or Health Education. 1.5% (n=1) have a thesis or dissertation in the ocular physiotherapy area. 1.5% (n=1) with monograph in the same area. 4.5% (n=3) published an article in the area of ocular physiotherapy, while 13.6% (n=9) have experience as a professor in the area of study. 60.6% (n=40) have practical experience in the area, and 6.1% (n=4) provide guidance on works in this field. Finally, 24.2% (n=16) are specialists in the area of higher education or are studying (Table 1).

Table 1. Academic and professional characteristics of the physiotherapists included in the research. Recife, 2022.

PROFESSIONAL EXPERIENCES AND ACADEMIC EDUCATION	**N**	**%**
Diploma in Osteopathy (DO)	2	3
Certificate in Osteopathy (CO)	8	12.1
Specialist in Osteopathy by COFFITO	3	4.5
Doctorate	4	6.1
Master's in Education, Health or Neurofunctional Science	8	12.1
Osteopathic physiotherapist, specialist in Posturology, Visual Rehabilitation, and/or Health Education	24	36.4
Thesis or Dissertation in the area of ocular physiotherapy	1	1.5
Monograph in the area of ocular physiotherapy	1	1.5
Article published in the area of ocular physiotherapy	3	4.5
Teaching experience in the study area	9	13.6
Practical performance in the area of ocular physiotherapy	40	60.6
Orientation of works in the area of ocular physiotherapy		6.1
Qualification (specialization) in the teaching area or to be studying	16	2.2

Source: The authors (2023).

In the Analysis of the relevance of the contents for the construction of a matrix of contents for graduation in Physiotherapy on the theme of Ocular Physiotherapy, the following was observed:

Regarding the insertion of the anatomical review of the visual system, 98.48% (n=65) completely agreed (CA) with it. In terms of visual development in children and syndromes, 87.88% (n=58) CA. In the neurophysiology aspect of vision, 96.96% (n=64) CA. In the etiology of oculomotor disorders, 96.96% (n=64) CA. The physiology of oculomotor disorders, 95.45% (n=63) CA. Sensory adaptations found in individuals with oculomotor dysfunction, 95.45% (n=63) CA. Oculomotricity, 96.96% (n=64) CA. Vergence changes, 96.96% (n=64) CA. Phorias and Tropias, 96.96% (n=64) CA. Posturology, 90.9% (n=60) CA. As for postural control, 93.94% (n=62) CA. Integration of the visual, proprioceptive, and vestibular systems, 96.96% (n=64) CA. Orbital fracture, 90.9% (n=60) CA. Regarding how to identify a patient with oculomotor dysfunction, 95.45% (n=63) CA. Regarding evaluation, 98.48% (n=65) CA. In treatment – exercises, muscular techniques, and manual techniques, 98.48% (n=65) CA (Table 2).

Table 2. Analysis of the content relevancy for the construction of a content matrix for graduation in Physiotherapy on the theme of ocular physiotherapy. Recife, 2022.

	CONTENTS	CA		PA		NAND		CD		PD	
		N	%	N	%	N	%	N	%	N	%
OCULAR PHYSIOTHERAPY	1. Anatomical review of the eyes	65	98.48	1	1.52						
	2. Visual development in children and syndromes	58	87.88	5	7.57	1	1.52	2	3.03		
	3. Neurophysiology of vision	64	96.96	2	3.03						
	4. Etiology of oculomotor disorders	64	96.96	2	3.03						
	5. Pathophysiology of oculomotor disorders	63	95.45	2	4.55						
	6. Sensory adaptations found in individuals with oculomotor dysfunction	63	95.45	3	4.55						
	7. Oculomotricity	64	96.96	3	3.03						
	8. Vergence changes	64	96.96	1	1.52	1	1.52				
	9. Phorias and Tropies	64	96.96	1	1.52	1	1.52				
	10. Posturology	60	90.9	4	6.06	1	1.52			1	1.52
	11. Postural control	62	93.94	3	4.54					1	1.52
	12. Integration of the visual, proprioceptive, and vestibular system	64	96.96	1	1.52					1	1.52
	13. Orbital fracture	60	90.9	5	7.57	1	1.52				
	14. How to identify a patient with oculomotor dysfunction	63	95.45	3	4.55						
	15. Evaluation	65	98.48	1	1.52						
	16. Treatment - Exercises, muscle techniques, and manual techniques	65	98.48	1	1.52						

Caption: CA: Completely Agree. PA: Partially Agree. NAND: Neither Agree Nor Disagree. CD: Completely Disagree and PD: Partially Disagree.
Source: The authors (2023).

As for the content analysis, 100% approval of the proposed contents was obtained (Table 2), with no need for new execution cycles. In addition, there was also no suggestion for new content.

As for the validity of the contents proposed in the instrument, 100% (n=66) of them obtained a CVI greater than 80. In light of this, all participants (n=66) were assessed as indispensable (Table 3).

Table 3. Agreement of the experts regarding the validation of the contents for the construction of a matrix of contents in ocular physiotherapy in the undergraduate Physiotherapy course. Recife, 2022.

Contents	Mean ± SD	CVI
OCULAR PHYSIOTHERAPY		
1. Anatomical review of the visual system	4.98 ± 0.12	100.0
2. Visual development in children and syndrome	4.8 ± 0.61	95.4
3. Neurophysiology of vision	4.97 ± 0.17	100.0
4. Etiology of oculomotor disorders	4.95 ± 0.21	100.0
5. Pathophysiology of oculomotor disorders	4.95 ± 0.21	100.0
6. Sensory adaptations – changes that can be found in individuals with oculomotor dysfunction	4.95 ± 0.21	100.0
7. Oculomotricity	4.97 ± 0.17	100.0
8. Vergence changes	4.95 ± 0.27	98.4
9. Phorias and Tropias	4.95 ± 0.27	98.4
10. Posturology	4.85 ± 0.59	96.9
11. Postural control	4.89 ± 0.53	98.4
12. Integration of the visual, proprioceptive, and vestibular system	4.92 ± 0.5	98.4
13. Orbital fracture	4.89 ± 0.35	100.0
14. How to identify a patient with oculomotor dysfunction	4.95 ± 0.21	100.0
15. Evaluation	4.98 ± 0.12	100.0
16. Treatment – Exercises, muscle techniques, and manual techniques	4.98 ± 0.12	100.0

General CVI of the table: 96%.
Source: The authors (2023).

No new content was suggested by the specialists, since most of the comments were not related to the theme, but to the construction of the syllabus for the Physiotherapy course, which was not the objective of the present study. Table 4 presents the experts' comments that were considered relevant to the research.

Table 4. Relevant comments from experts. Recife, 2022 (to be continued).

	OCULAR PHYSIOTHERAPY
1.	Mouth x vestibule x eye relationship
2.	Gaze Evoked Tinnitus
3.	Assessment of functional vision; low vision and cortical visual impairment
4.	Integration with other areas of Physiotherapy
5.	Hello! I found the idea very interesting of inserting the visual system into the base of the physiotherapist, I just don't know if it would be feasible to put it completely in the curriculum, because if we add everything that we deem important in the training of the physiotherapist, the graduation would become unfeasible, because the working hours would increase a lot. I wish you all success in this challenging endeavor!
6.	Resources used for treatment
7.	Oculomotor exercises
8.	It is extremely important to include this discipline in the Physiotherapy graduation. It opens up a range of opportunities to treat patients. It's amazing how we can help through the eyes.
9.	The importance of knowledge of oculomotricity in specific situations such as neuropathic patients, postural correction, etc.

Table 4. Relevant comments from experts. Recife, 2022 (conclusion).

OCULAR PHYSIOTHERAPY	
10.	I think there is a lack of complete information about the visual system, about the performance of Physiotherapy and how much it can help to improve the patients' symptoms. All content is necessary and relevant
11.	Eye and *Temporomandibular disorder* (*TMD*)
12.	Relationship between the visual system and the auditory system? Treatment theory and practice by alteration. Stimulate clinical reasoning with the presentation of clinical cases for each disorder of the content and group discussion after general discussion. Assessment and treatment approach with basic instruments.
13.	Relationship between the eyes and headaches
14.	Ocular Prostheses and Scleral Lenses: *Physical, chemical, and pathological events; *Safety at work, ergonomics, and Personal Protective Equipment (PPEs); *Associated ICDs; *Evaluation and prescription; postoperative evisceration and nucleation; *Conformation, adaptations of ocular prostheses and ocular expanders; *Congenital diseases/microphthalmia and anophthalmia: treatment and intervention in viscerocranial malformation.
15.	I believe that a specific subject would cover all the subjects, and in this case, I completely agree with all the items, but if that were not possible, most of these subjects could be inserted into other subjects in the curriculum, such as anatomy, kinesiotherapy, neurology, pediatrics, orthopedic trauma, as it already happens with other areas of the body, in order of conceptual priority, basic knowledge, adherence to the discipline and assistance in the construction of knowledge. I see that all the subjects discussed above are fundamental for training in this subject, but some offer basic knowledge so that the student can understand the importance of the visual system, recognize the problem, assess, and have notions of treatment. That way you can opt for an extension course when you graduate.
16.	Embryology of the Visual System
17.	Integration of the ocular system with other body systems
18.	Pathologies and surgeries that interfere with oculomotricity
19.	Oculomotricity and TMD/tinnitus relationship; Oculomotricity and special groups (neonatology, pediatrics, geriatrics, neurology, rheumatology, and sports)
20.	Guidance in schools on oculomotor and posture exercises as prevention
21.	Visual disorders in neurological patients
22.	Include other therapy possibilities in the treatment, such as dry needling, digital resources, game therapy, etc.

Source: The authors (2023).

Discussion

Within the items of the validation instrument, the proposal of an anatomical review of the eyes was well accepted by the participants, with 95% of agreement. This is due to the importance of initially knowing the anatomy of the eyes, since it is a very complex structure in relation to its functions, given that each eye continuously adjusts the amount of light that enters, focusing on close and distant objects and producing continuous images that are instantly transmitted to the brain.[14]

Another relevant aspect was the subject of visual development in the child and syndromes (87.88%), since it is from six months of age that the child's development is marked by the exploration and improvement of visual skills and by the stages of sensory integration. The eyes work together, without deviations, to begin to see a three-dimensional world in synchrony, with better control over the movement and extension of their limbs to capture what pleases them.[15] In approximately 10 months, depth vision (3D/stereoscopic vision) can be achieved, thanks to well-developed binocular vision, contrast sensitivity, and perception.

At one year of age, it is already possible to observe good fixation and good eye tracking; good focus for seeing closer and farther objects; focus more on stimuli of interest; interact with people, animals, and objects and maintain eye contact and good social interaction.[15]

When outlining the methodology to conduct the elaboration of contents for validation of a proposal of curricular content on ocular physiotherapy in Physiotherapy graduation aimed at the training of health professionals, the non-approach of the theme in the training of physiotherapists was taken into account. Currently, according to the National Curriculum Guidelines prepared by the Ministério da Educação - MEC (Ministry of Education), the Physiotherapy course must cover four areas: Biological and Health Sciences, Social and Human Sciences, Knowledge in Biotechnology, and Knowledge in Physiotherapy.[14] Among them are present: Anatomy; Cellular and molecular biology; Biochemistry; Professional Ethics; Human Physiology; Physiotherapy Applied to Public Health; Pathology. With this, it is possible to notice that ocular physiotherapy is not part of the course as a discipline, perhaps because it is an unknown area for some students and professionals.[16]

With regard to undergraduate courses in Physiotherapy, it is understood that Ocular Physiotherapy must be included in the curricular matrix of the undergraduate course, as it aims to re-educate eye movements, which are performed by six pairs of extrinsic muscles and receive nerve stimulation from three pairs of cranial nerves. Any sensory or motor visual dysfunction can lead to oculomotor deficits, and individuals can develop a pathology with characteristics and symptoms.[17]

It is important to emphasize the proposed content validated in this study, since when students enter the disciplinary area that covers ocular physiotherapy, the scarcity of content in this area is apparent, as the theme does not appear in the curriculum of the different undergraduate and graduate health courses. As such, it is an obscure subject that is largely ignored by academia and health professionals.[17]

In view of the results presented above, it appears that the implementation of ocular physiotherapy as a discipline in the Physiotherapy undergraduate matrix favors the teaching and learning process of the contents of the curricular component in question, as well as presenting an organization and writing favorable to the understanding of the items.[18] Furthermore, they learn to use the knowledge acquired in a creative way for each specific situation, therefore improving their skills in learning the content presented.[19] The activities developed in the classroom need to be linked to the field of study, through which students can learn through conversations with their future careers and become active and trained professionals.[19]

Conclusion

This study elaborated and validated 16 main contents on ocular physiotherapy and two on evaluation and treatment for the validation of contents for Ocular Physiotherapy in undergraduate Physiotherapy. The group composed of experts and professors validated 100% of the subjects proposed in the content matrix.

The impact of the content matrix on the Physiotherapy student's learning cannot be measured here, thus being the subject of future research. However, even demonstrating the relevance of the topics discussed, the literature still lacks studies focusing on ocular physiotherapy.

The limitations of the study are the scarcity of recent studies and publications on ocular physiotherapy, consequently making it difficult to discuss it.

Authors' contributions

Nascimento TO carried out her master's thesis, which formed the basis for the article. She worked on research design, data collection, as well as statistical analysis of the data and in the writing of the article. Vieira JSBC gave support as an advisor in the planning of the study, advised the data collection, part of the statistical analysis, and writing of the article. Silva Júnior JR supported as co-advisor in the planning of the study and advised in the article writing.

Conflicts of interest

No financial, legal or political conflicts involving third parties (government, private companies and foundations, etc.) has been declared for any aspect of the submitted work (including, but not limited to, grants and funding, advisory board participation, study design, manuscript preparation, statistical analysis, etc.).

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References

1. Sanches EL. Histórico de fisioterapia no Brasil e no mundo. Rev. Atual. Bras. Fisioter. 1984;29-36.

2. Barros FBM. Autonomia profissional do fisioterapeuta ao longo da história. Rev FisioBrasil [Internet]. 2003;59:20-31. Available from: https://www.researchgate.net/publication/321186076_AUTONOMIA_PROFISSIONAL_DO_FISIOTERAPEUTA_AO_LONGO_DA_HISTORIA/link/5a1417d6aca27240e3085c4a/download

3. Haddad AE, Pierantoni CR, Ristoff D, Xavier IM, Giolo J, Silva LB. A trajetória dos cursos de graduação na área de saúde: 1991-2004 [Internet]. Brasília: Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira; 2006. Available from: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-876869

4. Conselho Nacional de Educação/Câmara de Educação Superior (Brazil). Resolução CNE/CES 4, de 19 de fevereiro de 2002. Institui Diretrizes Curriculares Nacionais do Curso de Graduação em Fisioterapia [Internet]. Diário Oficial da União. 2002 mar. 4. Available from: http://portal.mec.gov.br/cne/arquivos/pdf/CES042002.pdf

5. Lowen A, Lowen L. Exercícios de bioenergética: um caminho para uma saúde vibrante. São Paulo: Ágora; 1985.

6. Conselho Federal de Fisioterapia e Terapia Ocupacional. Especialidades reconhecidas pelo COFFITO [Internet]. Available from: https://www.coffito.gov.br/nsite/?page_id=2350

7. Bicas HEA. Fisiologia da visão binocular. Arq Bras Oftalmol. 2004;67(1):172-80. https://doi.org/10.1590/S0004-27492004000100032

8. Mezzalira R, Neves LC, Maudonnet OAQ, Bilécki MMC, Ávila FG. Oculomotricidade na infância: o padrão de normalidade é o mesmo do adulto? Rev Bras Otorrinolaringol. 2005;71(5):680-85. https://doi.org/10.1590/S0034-72992005000500021

9. Lorenzetto LA. Treinando seus olhos: saúde e educação corporal. Rev Bras Ativ Fís Saúde [Internet]. 2006;11(2):39-46. Available from: https://rbafs.org.br/RBAFS/article/view/837

10. Ministério da Saúde (Brazil). Portaria nº 709, de 27 de dezembro de 2007. No que se refere às competências da União, estados, municípios e Distrito Federal, na área de atendimento fisioterapêutico de pacientes com alterações de binocularidades [Internet]. Diário Oficial União. 2008 jan. 21. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/sas/2007/prt0709_27_12_2007.html

11. Ministério da Saúde (Brazil). Portaria nº 2.916, de 13 de novembro de 2007. No que se refere às competências da União, estados, municípios e Distrito Federal, na área de assistência fisioterapêutica em oftalmologia no SUS. Diário Oficial União. 2007 nov. 14. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2007/prt2916_13_11_2007.html

12. Conselho Federal de Fisioterapia e Terapia Ocupacional (COFFITO). Portaria nº 3.128, de 24 de dezembro de 2008. Define que as Redes Estaduais de Atenção à Pessoa com Deficiência Visual sejam compostas por ações na atenção básica e serviços de Reabilitação Visual [Internet]. Available from: https://www.coffito.gov.br/nsite/?p=3337

13. Silva RF, Tanaka OY. Técnica Delphi: identificando as competências gerais do médico e do enfermeiros que atuam em atenção primária de saúde. Rev Esc Enferm USP. 1999;33(3):207-16. https://doi.org/10.1590/S0080-62341999000300001

14. Leão MF, Dutra MM. Influências do comportamentalismo, cognitivismo e humanismo na prática pedagógica de alguns professores de ciências da região do baixo Araguaia (MT). Educ. em Debate [Internet]. 2018;40(76):146-162. Available from: http://periodicos.ufc.br/educacaoemdebate/article/view/72754

15. Franco MAM. Desenvolvimento infantil: um olhar para a visão [Internet]. Visão na infância. 2020. [cited 2023 Apr 5]. Available from: https://www.visaonainfancia.com/desenvolvimento-infantil-visao/

16. Rubio DM, Berg-Weger M, Tebb SS, Lee ES, Rauch S. Objectifying content validity: conducting a content validity study in social work research. Soc Work Res. 2003;27(2):94-104. https://doi.org/10.1093/swr/27.2.94

17. Polit DF, Beck CT, Owen SV. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. Res Nurs Health. 2007;30(4):459-67. https://doi.org/10.1002/nur.20199.

18. Cidade Verde. Fisioterapia ocular melhora a concentração e auxilia no tratamento de doenças [Internet]. 2022. [cited 2023 Apr 5]. Available from: https://cidadeverde.com/noticias/370869/fisioterapia-ocular-melhora-a concentracao-e-auxilia-no-tratamento-de-doencas.

19. Guia da carreira. Fisioterapia: saiba tudo sobre o curso e veja onde estudar [Internet]. 2018. [cited 2023 Apr 5]. Available from: https://www.guiadacarreira.com.br/blog/fisioterapia.

Attachment

FACULDADE PERNAMBUCANA DE SAÚDE - AECISA

COMPROVANTE DE ENVIO DO PROJETO

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: FISIOTERAPIA OCULAR: ELABORAÇÃO E VALIDAÇÃO DE UMA MATRIZ CURRICULAR PARA O ENSINO NA GRADUAÇÃO EM FISIOTERAPIA

Pesquisador: THAYNARA DE OLIVEIRA NASCIMENTO

Versão: 1

CAAE: 45832721.2.0000.5569

Instituição Proponente: ASS. EDUCACIONAL DE CIENCIAS DA SAUDE - AECISA

DADOS DO COMPROVANTE

Número do Comprovante: 038829/2021

Patrocionador Principal: Financiamento Próprio

Informamos que o projeto FISIOTERAPIA OCULAR: ELABORAÇÃO E VALIDAÇÃO DE UMA MATRIZ CURRICULAR PARA O ENSINO NA GRADUAÇÃO EM FISIOTERAPIA que tem como pesquisador responsável THAYNARA DE OLIVEIRA NASCIMENTO, foi recebido para análise ética no CEP Faculdade Pernambucana de Saúde - AECISA em 20/04/2021 às 16:26.

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