Validation of the handbook "Endocrinology for Primary Care Physicians"

Validação do manual "Endocrinologia para o Clínico da Atenção Primária à Saúde"

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ABSTRACT: *Introduction*: handbooks' elaboration and validation have been important as far as the concept of Evidence-Based Medicine is consolidated, allowing the creation of protocols or guidelines. *Objective*: to validate the handbook "Endocrinology for Primary Care Physicians". *Method*: The handbook was developed in eight chapters (pre-diabetes, diabetes, gestational diabetes, dyslipidemias, thyroid nodules, hypo and hyperthyroidism, climacteric and menopause, overweight and obesity) based on international and current guidelines. The chapters dealt with the diagnosis, treatment, follow-up and referral of each disease and had their technical content reviewed by experts in endocrinology, and with experience in medical education. The handbook was validated by the Likert scale method, regarding the scientific adequacy of the content, as well as method-pedagogical adequacy. *Results*: the handbook was validated with 98% of scientific adequacy and 96% of method-pedagogical adequacy. *Conclusion*: the handbook "Endocrinology for Primary Care Physicians" was validated with an average of 97% of scientific and methodological-pedagogical adequacies.

Keywords: Education, medical; Endocrinology/education; Endocrinology/standards; Manuals as topic; Primary health care/standards.

RESUMO: *Introdução*: a inserção e a valorização de manuais vêm sendo importante na medida em que o conceito de Medicina Baseada em Evidências se consolida, permitindo a confecção de protocolos ou de *guidelines*. *Objetivo*: Elaborar e validar o manual "Endocrinologia para o clínico da Atenção Primária à Saúde". *Métodos*: o manual foi elaborado em oito capítulos (pré-diabetes, diabetes, diabetes gestacional, dislipidemias, nódulos de tireóide, hipo e hipertireoidismo, climatério e menopausa, sobrepeso e obesidade) com base em diretrizes e *guidelines* internacionais e atuais. Os capítulos abordam com ênfase o diagnóstico, tratamento, seguimento e encaminhamento de cada doença e tiveram seu conteúdo técnico revisado por especialistas em endocrinologia e com experiência no ensino médico. O manual foi validado pelo método de escala de Likert quanto à adequação científica do conteúdo, bem como adequação método-pedagógica. *Resultados*: o manual foi validado com 98% de adequação científica e 96% de adequação método-pedagógica. *Conclusão*: o manual "Endocrinologia para o clínico da Atenção Primária à Saúde" foi elaborado e validado com média de 97% de adequação científica e método-pedagógica.

Descritores: Educação médica; Endocrinologia/educação; Endocrinologia/normas; Manuais como assunto; Atenção primária à saúde/normas.

This study was presented in the scientific event: 3rd International Conference on Diabetes and Endocrinology, London, UK, June 22-23, 2020.

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INTRODUCTION

Physicians, in their clinical practice, experience the need for very specific information whose characteristics such as accuracy, reliability and readiness are fundamental. Given the increasing volume of current medical literature, these professionals have found difficulties to obtain information access that would facilitate their patients' care[1].

According to Castiel and Póvoa[2], the so-called 'evidence-based medicine' (EBM) originated from the Anglo-Saxon clinical epidemiology movement, started at the McMaster University in Canada, in the early 1990s. It is defined in generic terms as the process of systematically discovering, evaluating, and using research findings as the basis for clinical decisions[2].

Transmitting evidence to practice, which consists of implementation, is an active process involving individuals, groups, and organizations. The knowledge transmission is an evidence-based practice essential phase, whose challenge is to involve changes in knowledge, attitudes and behavior[3].

Manual means any set of norms, procedures, functions, activities, instructions and guidelines, substantial or essential, that make it possible to define and guide the activities to be developed, reproducing, diffusing and consolidating knowledge and experience. Therefore, manuals insertion and valorization have been important insofar as the concept of EBM is consolidated, allowing protocols or guidelines elaboration[4].

Carballo et al.[5], in a study conducted through interviews with endocrinology service users in an outpatient specialty center in the city of Belém-PA-Brazil, noticed that although 80.2% of the interviewees had a diagnosis informed by the Primary Care physician at the time of their first consultation with the endocrinologist, only 35.3% had already begun some treatment for the disease that caused their referral, demonstrating the need for greater resolution by the clinician in attending pathologies associated with this specialty in the Primary Care scope[5].

Considering the importance of specific technical information prompt access to clinical doctors in their routines, both for best consultation use and for greater capacity in their decisions' making proccess in Primary Health Care, together with the EBM methodology, it is important to validate an endocrinology handbook (manual) for Primary Care physicians, which is the objective of this present study.

OJECTIVE

To validate the handbook "Endocrinology for Primary Care Physicians".

MATERIAl AND METHODS

The present is a descriptive study and all actions towards its participants were carried out and guided according to the precepts of the Helsinki Declaration and the Nuremberg Code, respecting the Norms of Research Involving Human Beings. Approval was obtained by the UEPA Ethics Committee (CEP-UEPA) through Plataforma Brasil (Brazilian online platform for research's ethics approvals), with CAEE n° 77465417.8.0000.5174.

To elaborate this handbook, eight chapters had been chosen once they represent the most prevalent endocrine diseases in the population attended in the Primary Care Center where this study was realized (Escola Marco, Belém-PA-Brazil) and, consequently, generate a significative demand of Primary Care Physicians consultations. They are:

1. Prediabetes;
2. Diabetes;
3. Gestational Diabetes;
4. Dyslipidemias;
5. Thyroid nodules;
6. Hypo and hyperthyroidism;
7. Climacteric - Menopause;
8. Obesity.

In order to define this handbook theoretical content, the authors consulted the latest versions of international medical society's guidelines in the endocrinology area, as well as updated scientific articles indexed in international online medical literature databases that contain important information about the subjects selected from April 2017 to April 2018. The manual was aimed at the diagnosis, treatment, Primary Care follow-up and patient's referral regarding the endocrine diseases that are mentioned in each chapter.

A technical, but at the same time, simple and concise language was used for the handbook writing, allowing a quick reading by physicians in their clinical routine, including during patient's consultation. The handbook writing was also carried out from April 2017 to April 2018.

After completing the chapters, the handbook was sent to three reviewers for eventual corrections and technical-scientific content review: two experts in endocrinology with experience in medical teaching (master degree) and a PhD medical doctor, with extensive experience in both teaching and medical education programs coordination, as well in scientific research.

At the end of all reviews, the handbook was given to six Primary Care physicians and Endocrinologists to evaluate the handbook's technical content and its capacity in transmit all the information proposed in an effective way to permit a better Primary Health Care practice in the endocrinology field, in addition to its pedagogical adequacy.

This evaluation was performed using the Likert Scale method, using a ten assertions questionnaire to be considered below (Board 1).

The responses obtained by the Likert Scale evaluation were noted in a Microsoft Excel spreadsheet to calculate the average of the response values provided by the evaluators. The absolute numerical values were later transformed into percentage values to ensure better visualization and understanding of the results.

Board 1: Assertives to be considered for the Handbook "Endocrinology for Primary Care Physicians" evaluation by Likert method - 2018

Assertives	Common considerations for all assertives
1. The handbook is coherent from the point of view of the diagnosis process, treatment, follow-up and referral of patients with endocrine diseases in Primary Health Care scope.	
2. The handbook is consistent from the point of view of health education process.	
3. The handbook is able in promoting behavioral and attitude changes by readers.	
1. The handbook may circulate in scientific environment of Primary Health Care clinical field.	1. Totaly disagree
2. The information in the handbook is well structured and easy to read.	2. Partially disagree
3. Information presented in the handbook is scientifically correct.	3. Indifferent
4. There is logical sequence in this handbook content.	4. Partially agree
5. The handbook's chapters portray prevalent endocrine diseases that are frequently assisted by Primary Health Care services.	5. Totally agree
6. The handbook allows clinical practice learning transferring in Primary Care scope.	
7. The handbook is suitable for use as an educational technology in Primary Health Care professionals' practice.	

Source: study's protocol.

RESULTS

For the handbook "Endocrinology for Primary Care Physicians" validation, the approval of two criteria was evaluated by the participants: the adequacy and scientific contribution of its content and its pedagogical adequacy (Tables 1, 2 and 3).

Table 1: Contents adequacy and scientific contribution of the handbook "Endocrinology for Primary Care Physicians". Belém-PA, 2018

Handbook's contents adequacy and scientific contribution	Approval achieved
Diagnosis processes, treatment, follow-up and referral coherence	96,7%
Suitability for circulation in scientific environment.	100,0%
Information is scientifically correct.	96,7%
Chapters correspond to the most prevalent endocrine diseases.	100,0%
It allows learning transferring into clinical practice.	96,7%
SUBTOTAL 1	**98,0%**

Source: study's protocol.

Table 2: Pedagogical adequacy of the handbook "Endocrinology for Primary Care Physicians" as a medical education instrument model. Belém-PA, 2018

Pedagogical adequacy as a medical education instrument model	Approved achieved
Health education process coherence.	100,0%
Promoting behavior and attitude changes.	90,0%
Information is easy to read.	96,7%
There is content logical sequence.	96,7%
It is suitable as an educational technology sample.	96,7%
SUBTOTAL 2	**96,0%**

Source: study's protocol.

Table 3: Validation of the handbook "Endocrinology for Primary Care Physicians" according with chosen criteria. Belém-PA, 2018

Handbook's validation criteria	Evaluation received	Classification
Content adequacy and scientific contribution.	98,0%	Validated
Pedagogical adequacy as a medical education instrument model.	96,0%	Validated
Final Average	**97,0%**	**Validated**

Source: study's protocol.

DISCUSSION

Handbooks' insertion and valuation have been important as the concept of Evidence Based Medicine is consolidated, allowing the elaboration of excellence protocols and guidelines in medical practice.

The Brazil Ministry of Health has invested several years in preparing and disseminating several handbooks and guidelines for medical education, many of them directed to Primary Care level. However, some of these materials have extensive content that, despite their high technical value, sometimes don't prove efficient for quick consultations by medical professionals during their routines.

As an example, in the endocrinology area, there is a book with 160 pages, the "Caderno da Atenção Básica para Diabetes" (Diabetes in Primary Care), which includes information about Diabetes from this disease epidemiological situation to its diagnosis, clinical complications management, treatment and even how insulin should be stored and applied[6].

On the other hand, in 2016, the Brazil Ministry of Health, together with the Rio Grande do Sul Federal University, launched the "Protocolos de encaminhamento da Atenção Básica para a Atenção Especializada à Saúde" (Primary Care Referral Protocols for Specialized Health Care), whose first volume addresses the specialties of endocrinology and nephrology. However, this protocol only determines which clinical conditions should be referred to the specialist, regarding some endocrine diseases and how descriptive content should be included in the physical and complementary exams, and in the clinical history of the patients referred[7].

The present endocrinology handbook aims to allow an easy reading to the reader, in a concise approach to diagnosis, treatment of what cases can be solved by the physician within the structure offered in the Primary Care scope, which situations should be referred to the specialist and what should be included in these referrals. The diseases were chosen because they were the ones in the endocrinology area with the highest prevalence in the population that generated greater demand for consultations in the Health Care Service of this study: Pre-Diabetes, Diabetes Mellitus, Gestational Diabetes, Dyslipidemias, Thyroid Nodules, Hypo and Hyperthyroidism, Climacteric-Menopause and Obesity.

The Likert Scale model was developed in 1932 by Rensis Likert. This model corresponds to an ordinary scale of 5 or 7 points used to measure evaluators' degree of agreement or disagreement regarding a particular product or process. The Likert scale has often been used in medical

education and research, for example, in the evaluation of opinions on medical training and trainers, as well as to obtain a performance validation after some educational intervention[8,9].

For the present handbook, it was verified, after the results obtained by Likert scale validation method, that it is suitable as a medical education tool.

According to the assertions that aimed the evaluators' opinion regarding the technical-scientific content adequacy, the percentage of approval reached was of 98%. Regarding the handbook pedagogical parameter adequacy, the approval reached was 96%. Therefore, with a total approval in both evaluations of 97%, the manual had its validation ratified.

These results corroborate with numerous other validating processes and products papers intended for medical education. Miranda et al. (2008) carried out a study to construct a Likert-type scale to evaluate student's social and ethical attitudes when entering medical schools, in order to stimulate the development of these attitudes during the medical education process. They concluded that the work developed resulted in the definition of a valid and reliable instrument to measure medical students' attitudes according to social knowledge dimensions and ethics[10].

Sharma et al.[11] conducted an online survey of 952 medical surgeons who had undergone the American College of Surgeons' head and neck ultrasound skills course among 2010 and 2014. The study used the Likert Scale as validation model and verified that the majority of the students acquired proficiency in at least one of the skills evaluated[11].

In their turn, Raoof et al.[12] evaluated, through the Likert Scale, the effectiveness of the American College of Surgeons' immersion course in palliative care for resident medical surgeons. The method was to conduct a four-hour training on the contents of the handbook "Palliative Surgical Care: A Guide for Residents". In the end, they concluded that the course based on the handbook enabled the development of knowledge, attitudes and skills by residents and suggested the implantation of such training model in other medical residency programs[12].

Faced with the need for constant renewal in education models, there is a trend in courses training and handbooks application, in live or online formats, in medical education area. The possibility of using different technologies, such as this e-Handbook format "Endocrinology for Primary Physicians" is important to ensure rapid access to knowledge even at a distance from large centers, which is extremely important for physicians that are located in small cities or in rural areas and also faces the lack of specialists availability to provide them agile and adequate support in an integral clinical care of their patients.

CONCLUSION

The handbook "Endocrinology for Primary Care Physicians" was validated by Likert scale, according to the evaluators, with 98% scientific contribution and adequacy of its content and 96% of pedagogical adequacy as a medical education instrument model, counting on an average of 97% of approval.

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