English

Elaboration and validation of a photo protocol documentation for Teledermatology in Primary Care

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Abstract

Dermatology uses telemedicine in different ways because the possibility of diagnosis is based on the morphology of the lesions. In view of the need for image quality for the second opinion of a specialist, a digital product was developed aiming at the standardization of the photo documentation of the skin lesions, targeting physicians working at the primary level of health care . The developed digital product adds to the standardization of the digital registry of clinical information to a photo documentation protocol of dermatological lesions for the purpose of care support, offering additional benefits to the traditional methods of dermatological evaluation. The photo documentation protocol developed was evaluated by medical experts in Family and Community Medicine and Dermatology, who also validated it regarding objectives, content, language, relevance, functionality and usability. We used the Content Validit Index, for validation of the protocol in terms of presentation and content; reaching an index of 0.94 for all aspects evaluated. The standardization of photo documentation in teledermatology contributes to the standardization of electronic data exchange, to the research and improvement of diagnostic acuity for a second expert opinion, thus qualifying health care.

Keywords: *Telemedicine; Dermatology; Technological advances; Medical Education.*

Resumen

Desarrollo y validación de un protocolo de documentación fotográfica de Teledermatologia en la Atención Básica.

La Dermatología utiliza la telemedicina de diferentes formas por la posibilidad de que el diagnóstico se base en la morfología de las lesiones. En vista de la necesidad de calidad en la imagen para la segunda opinión remota de un especialista, se desarrolló un producto digital orientado a la estandarización de la foto documentación de las lesiones de piel teniendo como público objetivo a los médicos actuantes en el nivel primario de atención a la salud. El producto digital desarrollado agrega a la estandarización del registro digital de las informaciones clínicas a un protocolo de foto documentación de las lesiones dermatológicas para fines de apoyo asistencial, ofreciendo beneficios adicionales a los métodos tradicionales de evaluación dermatológica. El protocolo de foto documental desarrollado fue evaluado por médicos especialistas en Medicina de Familia y Comunidad y en Dermatología, que también lo validaron en cuanto a los objetivos, contenido, lenguaje, relevancia, funcionalidad y usabilidad. Se utilizó el Content Validit Index, para validación del protocolo en términos de presentación y contenido; alcanzando un índice de 0,94 para la totalidad de los aspectos evaluados. La estandarización de la foto documentación en la teledermatología contribuye a la uniformización del intercambio electrónico de datos, para la investigación y la mejora de la acuidad diagnóstica para segunda opinión remota de un especialista, así, calificando la asistencia a la salud.

Palabras-clave: *Telemedicina; Dermatología; Avances tecnológicos; Educación médica*.

Resumo

Elaboração e validação de um protocolo de foto documentação para Teledermatologia na Atenção Básica.
A Dermatologia utiliza a telemedicina de diferentes formas pela possibilidade do diagnóstico ser baseado na morfologia das lesões. Tendo em vista a necessidade de qualidade na imagem para a segunda opinião remota de um especialista, foi desenvolvido um produto digital visando a orientação para a padronização da foto documentação das lesões de pele tendo como público alvo o médicos atuantes no nível primário de atenção à saúde. O produto digital desenvolvido agrega à padronização do registro digital das informações clínicas a um protocolo de foto documentação das lesões dermatológicas para fins de apoio assistencial, oferecendo benefícios adicionais aos métodos tradicionais de avaliação dermatológica. O protocolo de foto documentação desenvolvido foi avaliado por médicos especialistas em Medicina de Família e Comunidade e em Dermatologia, que também o validaram quanto aos objetivos, conteúdo, linguagem, relevância, funcionalidade e usabilidade. Utilizou-se o Content Validit Index, para validação do protocolo em termos de apresentação e conteúdo; alcançando um índice de 0,94 para a totalidade dos aspectos avaliados. A padronização da foto documentação na teledermatologia contribui para a uniformização do intercâmbio eletrônico de dados, para a pesquisa e a melhoria da acuidade diagnóstica para segunda opinião remota de um especialista, assim, qualificando a assistência à saúde.
Palavras-chave: *Telemedicina; Dermatologia; Avanços tecnológicos; Educação Médica.*

Introduction

Since dermatology is a specialty that has a wide relationship between the morphological characteristics of the lesions and its diagnosis, the iconographic record has its importance established as a component of medical practice in this specialty[1]. Thus, in view of its primarily visual character, the possibility of evaluating a skin lesión has as much value to the dermatologist as the study about it. Given this fact, it is observed the importance of quality in photography for this specialty, as well as the need for standardization of its documentation[2].

The photo documentation in dermatology is present in the evaluation and follow-up of skin lesions, assisting in the choice of the best treatment, in medical education, in clinical research, as a form of legal documentation and occupies a prominent place in the context of teledermatology[2,3], as well as are useful for telemonitoring of chronic conditions such as skin cancer, psoriasis and cutaneous T-cell lymphoma; among others.

In Teledermatology, the images collected, shared and stored through different technologies may enable the diagnostic suspicion of dermatological lesions in patients in remote locations by a specialist physician at a distance, through the Internet.

However, the diversities of work scenarios, the range of dermatological pathologies and limitations in the standardization of photo documentation can impact on quality for the second remote opinion of an expert demonstrating the real need of establishment of specific protocols aimed at standardizing the collection and recording of images as support to increase the diagnostic acuity of the teledermatologist[4].

Instruments for standardization procedures such as this play an important role as a support tool for health related activities, in order to help professionals to understand the information transmitted to them, standardize the practice, besides functioning as a readily available resource to remember whenever it is necessary[5].

In the field of health, the standardization of procedures has its importance in order to ensure the expected result of the action to be implemented, through the technical guidance of the procedure according to scientific principles, as a way to achieve the quality of health care provided, either in person or remotely[6]. In addition, the standardization of the photo documentation gives higher quality to the diagnosis because only in this way the evolutionary images mayn be comparable to each other[2].

In this view, the construction and validation of a protocol for the photo documentation targeting the generalist physician who works in Primary Health Care is an important step for the systematization, expansion and strengthening of the teledermatological practice at the primary level[7] considering that most of the actions currently practiced in teledermatology, at this level of health care, are based on specific aspects related to the impact of dermatological screening and the reduction of costs for the health system in detriment of protocols for the standardization of photo documentation of dermatological Llesions[4].

The objective of this work is to present the report of experience in the elaboration and validation of a digital photo protocol documentation for teledermatology in Primary Care.

Methods

The protocol was elaborated in order to propose guidelines for the photo documentation in teledermatology as a way to support and guide health professionals in the developmentof this practice in a safe and effective way, through the construction of skills and scientific techniques, and thus, to solve failures and provide more accurate diagnoses.

The theoretical procedures for the construction of the Protocol started with bibliographical survey about dermatological lesions, photographic record in dermatology and cosmiatry and photo documentation, also studied aspects related to the car clinical associated with teledermatology, photo documentation and the performance of photographic record in the contexto of teledermatology.

In addition, an immersion was carried out in the processes involving the development of telediagnostic practices of the Telehealth Nucleus of the Federal University of Pernambuco (NUTES-UFPE), responsible for the provision of telehealth services in the state of Pernambuco. NUTES oper-

aties in the primary level of Health Care with the prospect of contributing to the improvement of health professionals and as a mediator of remote assistance through the second opinion of specialists for the general practitioners who work in the tip, including teledermatology.

For the realization of teledermatology, NUTES developed an application focused on this specialty in the HealthNet Telehealth Platform – e-health tool developed by NUTES, wich was incorporated into the Protocol containing specific aspects regarding the submission of the telediagnostic request in dermatology by HealthNet Telehealth Platform.

Fig 01: Photo protocol documentation for Teledermatology in Primary Care. Source: Own authorship.

After the definition of the guidelines for the photo documentation in teledermatology, we proceeded to the records of the images that began to illustrate the Protocol, through free and informed consent of the model. Images were also collected from the teledermatology environmentof the HealthNet Telehealth Platform. Overall, the form and structure of the Protocol comprised the gathering of information concerning the dermatological anamnesis, the photo documentation of lesions and the registration and submission of these data in the Teledermatology environment of the HealthNet Telehealth Platform.

After the establishment of the process for the photo documentation this was submitted to validation in content and appearance, which had the purpose of verifying the quality level of the material produced[8,7].

The validation of the protocol was performed by seven evaluators with criteria regarding the specialist title and the time of professional practice. Of these, 6 (six) were females and 1 (one) was male, with a mean age of 41.4 years (29 and 62 years), 2 with the title of PhD in Dermatology and 3 Master's degree. Of the total, 5 physicians specialists in dermatology and with average time of work in the area of 21.2 years and 2 physicians specialists in Family and Community Medicine with average time of specific activity in the area of 6 years. Of the evaluators, only one mentioned time of experience in other areas (Medical Clinic) with 09 years of work.

The choice of an interdisciplinary profile of the evaluators (dermatologists and physicians of family and community) resulted from the need to validate the protocol by the two target audiences of this work, the generalist physician at the tip and the dermatologist for the second remote opinion by teledermatology.

The protocol was evaluated through a Validation Questionnaire, elaborated based on the adaptation of the instrument used by Souza Junior[7]. The Protocol and the Validation Questionnaire were sent to the evaluators, both in electronic form, with a deadline for the return of up to twenty days.

The questionnaire has a Likert scale with the items: "Strongly agree", "Agree", "Disagree", "Strongly disagree"

and “do not know”, where the evaluator marks his level of agreement in the evaluation items from his/her perception after reading the Protocol. The aspects that were evaluated were:objectives, content, language, relevance, functionality and usability.

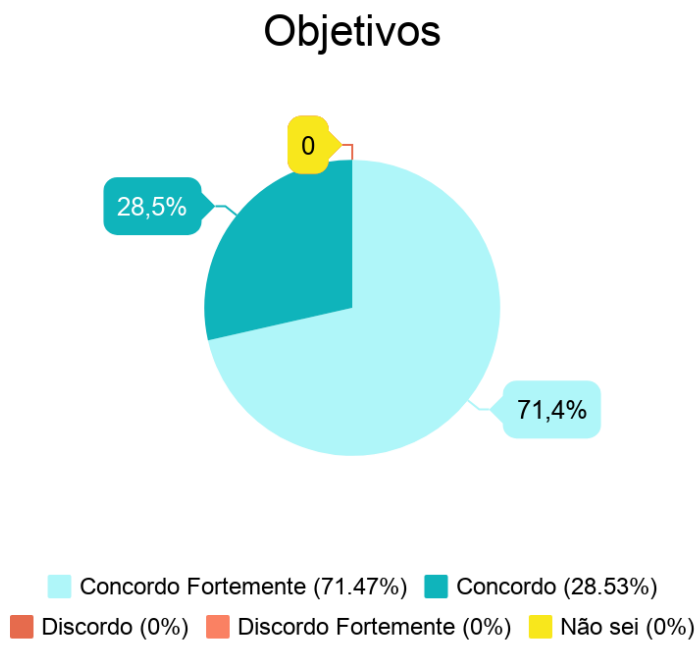
For validation of the Photo Protocol Documentation for Teledermatology in the AB, we used Content Validity Index (CVI), which measures the proportion or percentage of evaluators that are in agreement on certain aspects of the instrument and their items, being thus, the index applied to each of the items and the totality of the protocol[9]. Considering the number of six or more evaluators, the protocol is considered valid when it reaches a rate of not less than 0.78[9,10,11].

Results

The Photo Protocol documentation for Teledermatology in Primary Care elaborated consists of 4 items that advocate recommendations for health professionals regarding teledermatology practices, these items encompass the recommendations for the clinical care associated with teledermatology, recommendations for photo documentation in teledermatology, realization of photographic record and recommendations for the submission of dermatological exams by the HealthNet Telehealth Platform – Figure I.

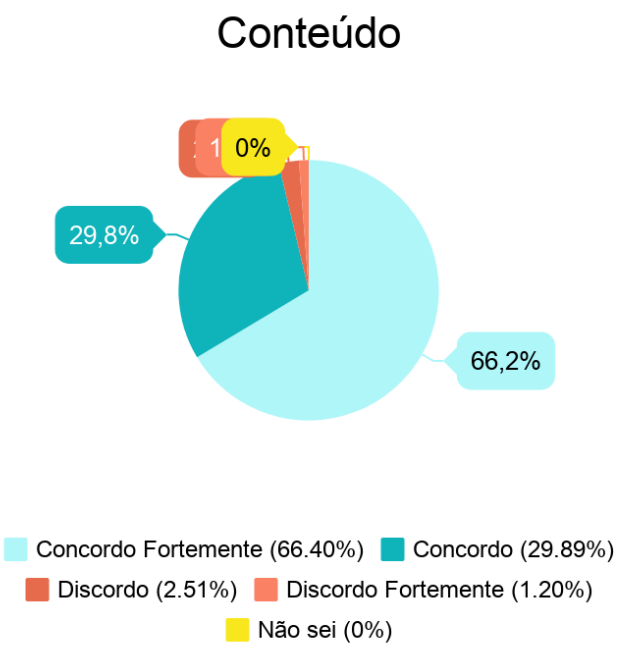
As the effect of the validation process to which it was submitted, the following results were obtained: in relation to the item “objectives”, which correspond to the purposes, goals or ends that are to be attained with the protocol, the evaluators responses presented a CVI equal to 1.0, there is, therefore, no answer “disagree”, “strongly disagree” and “do not know”.

Chart I: Evaluation Item - Objectives

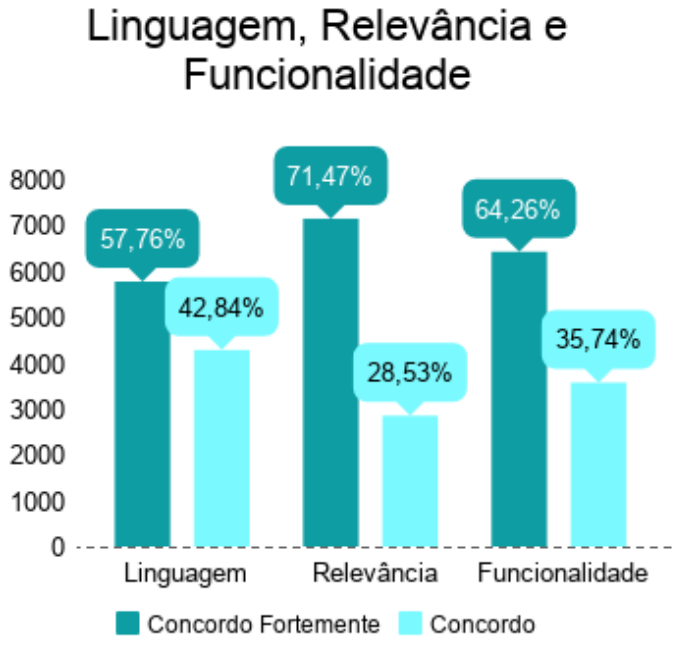


Regarding the approach of the protocol in terms of Content – sufficiency for the understanding of its users, as well as in terms of its appearance as the general organization, structure, presentation strategy and form – a CVI of 0.96 was obtained, with two answers “disagree” and one “strongly disagree” answer.

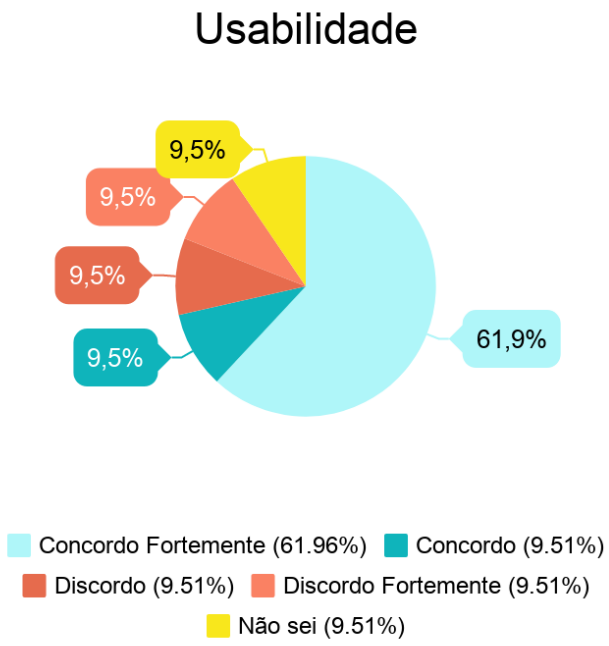
Chart II: Valuation Item – Content



Regarding the Language items in which the style of writing used in the protocol was evaluated, relevance where the characteristics that measure the degree of signification of the items presented in the protocol and functionality that measure the usefulness of the functions and/or objectives of the protocol in order to provide subsidies for the physician to carry out the process of photo documentation in teledermatology, obtained the CVI equal to 1.0, being the totality of the responses of the evaluators in the respective items corresponding to “agree” or “ strongly agree”.



In terms of usability, the effort needed to use the protocol was measured, as well as the judgment of this use. In this item, the CVI was obtained equal to 0.71, with two answers corresponding to "disagree", where the evaluators portrayed that there would be difficulties in the implementation of Teledermatology in view of the limitation of technological infrastructure in the health units and two evaluators responded "do not know".



The Photo Protocol documentation for Teledermatology in Primary Care was, therefore, considered validated in appearance and content considering the Content Validit Index of 0.94 for the totality of the items assessed by the questionnaire, since it is considered, in case of an assessment carried out by six or more evaluators, a rate of 0.78[9,10,11].

Discussion

The elaboration of a protocol that subside the Primary Care professional regarding the use of teledermatology as a tool to aid the work process is fundamental to provide these professionals with greater technical and scientific appropriation about this tool, as well as promotes the consolidation of this practice, which directly affects the quality of care and adds greater resolubility to this level of health care. In addition, it allows remote monitoring of the lesions themselves by standardization, in order to provide a timely intervention and a longitudinal care to the patient with dermatological lesions.

The use of standardized and validated instruments has been advocated by the American Telemedicine Association, since they increase the diagnostic accuracy of procedures and allow the definition of interventions in an early[12].

In this sense, this protocol is the first instrument that proposes guidelines for the photo documentation for teledermatology focused on Primary Care, constituting a material of technical and scientific support to the development of the practice of teledermatology in this field.

Regarding the aspects evaluated in the validation process of the Protocol, it was verified, therefore, the agreement of the evaluators regarding the achievement of the objectives proposed by it, understanding this, endorsed by Paim et al[5] and Barbosa et al[6] who approach the importance of the development of instruments such as this from the perspective of the role it plays in supporting activities related to the health area, in order of helping the professional to understand the information transmitted to them, to standardize the practice in addition to working as a readily available resource to remember whenever necessary.

In addition, its relevance lies, primarily, in the fact that they confer greater credibility to the diagnetics[2].

In this context, the use of the protocol is also related to the evaluation and follow-up of skin lesions, assisting in the choice of the best treatment, in medical education, in clinical research, as a form of legal documentation and for use in teledermatology[2,3].

It is important to highlight the position of the evaluators regarding the possible difficulty of using this protocol in the context of Primary Care due to the known limitations of this level of attention in terms of technological infrastructure, a factor complicator to the implementation of teledermatology in the AB.

The availability of access infrastructure – understood as the availability of equipment and internet – has been approached by the debate that relates ICTs with the development of the health sector – precisely because it is a basic assumption for the effective adoption of information and communication technologies. The importance of access was highlighted by the World Summit on the Information Society (WSIS), which established among its objectives and goals, the need to offer this infrastructure to the health units in order to to improve medical care, training, education and health research[13], being, therefore, indispensable to the consolidation of teledermatological practice in the AB, as well as the adoption of standardized measures of the process of photo documentation.

Conclusion

The standardized practices in teledermatology are consubstantially important for its implementation, so teledermatology should be developed in the light of a well established work process as well as must rely on technological tools and operational models that are clearly structured and recognized as valid, especially at the primary level of health care, known as the gateway to the Unified Health System (Sistema Único de Saúde), where the Basic Health Units are. The establishment and validation of this photo protocol documentation for Teledermatology in Primary Care should contribute to the quality of health care, and should also be applied and tested in practice in the Family Health Strategy.

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