VALIDATION OF AN ONLINE COURSE ON POSTURAL CARE FOR PRETERM NEWBORNS

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ABSTRACT

Objectives: Validation of an online course content on postural care for newborns in the Neonatal Intensive Care Unit and assessment of participant satisfaction.

Method: Methodological study of content validation by 13 judges with expertise in neonatology and online education who responded to the educational content validation instrument, and by 175 course participants who evaluated the course through a satisfaction questionnaire. The criterion for validation was agreement above 80.0%, analyzed through the Content Validity Index (CVI), Content Validation Coefficient (CVC), binomial test, and descriptive statistics for analyzing satisfaction variables. Data collection took place from January to June 2022 for the validation stage, and during June 2023 for the evaluation stage conducted by the course participants.

Results: All items obtained agreement above 80.0% with a total CVI and CVC of 83.3% and 91.0%, respectively. The course participants positively evaluated the course regarding content organization, coherence between theory and practice, navigability, quality of materials, and applicability in professional practice.

Conclusion: The online course was considered valid regarding its objectives, structure/presentation, and relevance. Therefore, it can be offered as an open educational resource in the training of healthcare and nursing professionals to provide postural care to newborns in critical environments, thereby enhancing the performance of developmental care.

DESCRIPTORS: Preterm newborn. Neonatal intensive care units. Education at a distance. Validation studies. Quality of healthcare. Neonatal nursing.

VALIDAÇÃO DE CURSO ON-LINE SOBRE CUIDADOS POSTURAIS AO RECÉM-NASCIDO PREMATURO

RESUMO

Objetivos: Validar o conteúdo de um curso *on-line* sobre cuidados posturais ao recém-nascido na Unidade de Terapia Intensiva Neonatal e verificar a satisfação dos cursistas.
Método: Estudo metodológico de validação de conteúdo por 13 juízes com expertise em neonatologia e educação *on-line* que responderam ao instrumento de validação de conteúdo educacional: e por 175 cursistas que avaliaram o curso mediante um questionário de satisfação. O critério para validação foi concordância superior a 80,0%, analisado por meio do *Content Validity Index* (CVI), Coeficiente de Validação de Conteúdo (CVC), teste binomial e estatística descritiva para análise das variáveis de satisfação. A coleta de dados ocorreu de janeiro a junho de 2022 para a etapa da validação; e no período de junho de 2023 para a etapa de avaliação realizada pelos cursistas.
Resultados: Todos os itens obtiveram concordância superior a 80,0% com CVI e CVC total de 83,3% e 91,0%, respectivamente. Os cursistas avaliaram positivamente o curso quanto à organização do conteúdo, coerência entre teoria e prática, navegabilidade, qualidade dos materiais e possibilidade de aplicação na prática profissional.
Conclusão: O curso *on-line* foi considerado válido no tocante aos objetivos, estrutura/apresentação e relevância. Portanto, pode ser ofertado como recurso educacional aberto no aperfeiçoamento de profissionais de saúde e enfermagem a fim de prestar o cuidado postural aos recém-nascidos em ambiente crítico, elevando o desempenho dos cuidados desenvolvimentais.

DESCRITORES: Recém-nascido prematuro. Unidades de terapia intensiva neonatal. Educação à distância. Estudos de validação. Qualidade da Assistência à Saúde. Enfermagem neonatal.

VALIDACIÓN DEL CURSO ONLINE SOBRE CUIDADOS POSTURALES DEL RECIÉN NACIDO PREMATURO

RESUMEN

Objetivos: Validar el contenido de un curso online sobre cuidados posturales del recién nacido en la Unidad de Cuidados Intensivos Neonatales y verificar la satisfacción de los participantes del curso.
Método: Estudio metodológico de validación de contenido realizado por 13 jueces con experiencia en neonatología y educación en línea que respondieron al instrumento de validación de contenido educativo: y por 175 participantes del curso que evaluaron el curso mediante un cuestionario de satisfacción. El criterio de validación fue una concordancia mayor al 80,0%, analizado mediante el *Content Validity Index* (CVI), Coeficiente de Validación de Contenido (CVC), prueba binomial y estadística descriptiva para analizar las variables de satisfacción. La recolección de datos se realizó de enero a junio de 2022 para la etapa de validación; y en junio de 2023 para la etapa de evaluación realizada por los participantes del curso.
Resultados: Todos los ítems lograron una concordancia superior al 80,0% con un CVI y un CVC total de 83,3% y 91,0%, respectivamente. Los participantes del curso coincidieron en una evaluación positiva en términos de organización de contenidos, coherencia entre teoría y práctica, navegabilidad, calidad de los materiales y posibilidad de aplicación en la práctica profesional.
Conclusión: El curso en línea se consideró válido en términos de objetivos, estructura/presentación y relevancia. Por lo tanto, puede ofrecerse como un recurso educativo abierto para el perfeccionamiento de los profesionales de la salud y de enfermería con el fin de brindar cuidados posturales a los recién nacidos en ambientes críticos, y elevar la prestación de los cuidados del desarrollo.

DESCRIPTORES: Recién nacido prematuro. Unidades de cuidados intensivos neonatales. Educación a distancia. Estudios de validación. Calidad de la atención en salud. Enfermería neonatal.

INTRODUCTION

The birth of a preterm newborn (PTNB) demands a conducive environment, consisting of a qualified healthcare team that ensures not only their survival but primarily promotes the continuity of healthy development outside the maternal womb, minimizing risks[1]. Nurses play a crucial role in enriching environmental interventions in Neonatal Intensive Care Units (NICUs) as they are the professionals who spend the most time in direct care within the units. Therefore, they act as a link to initiate dialogues about individualized and family-centered care proposals[2].

One of the first interventions for neurodevelopmental support in the NICU is therapeutic positioning, where strategies are applied to nestle, contain, or swaddle babies, promoting better musculoskeletal, postural, and biomechanical alignment development[3]. Therefore, it is necessary for nurses and healthcare teams to enhance their knowledge about postural care management and its benefits, as the literature highlights obstacles to incorporating these practices in the NICU environment[3–4].

Evidence demonstrates the effect of online educational programs in improving knowledge and acquiring competency in developmental care among neonatal nurses[4–5]. Most studies focus on the implementation of environmental interventions, one of which is fostering a culture of postural support in the NICU, minimizing stress, pain, and stimuli that hinder the development of preterm infants. Regarding educational resources, a significant portion utilized web-based platforms offering theoretical materials, videos, or recorded lectures[5].

Offering an online course on postural care in the NICU contributes to expanding knowledge that enriches the experience of caring for preterm infants, as well as ensuring significant adherence from nurses and healthcare professionals through the utilization of dynamic learning strategies facilitated by increasingly efficient and interactive Virtual Learning Environments (VLEs)[6]. This online teaching modality has been supported by facilitators such as Open Educational Resources (OER) and Massive Open Online Courses (MOOCs), produced with specific learning objectives and democratized access through teaching and research materials released into the public domain and/or licensed openly[6].

The advantages of online teaching in the context of neonatal health and nursing are related to the specialized knowledge required by the field, along with the development of specific competencies[7], as well as the rapid updates of clinical recommendations. Regarding the most addressed topics, the literature emphasizes that there is a scarcity of content on postural support care[4]. Therefore, the development of this research is justified by the possibility of promoting, through the creation of an online course, in-service education focused on meeting the care needs of at-risk newborns. The objective of this article was to validate the content of an online course on postural care for newborns in the Neonatal Intensive Care Unit and assess the satisfaction of the course participants.

METHOD

Methodological research guided by the theoretical framework of instrument validation recommended by Pasquali[8] and the methodological framework of Design Thinking (DT) proposed by Brown. DT can be implemented both as a teaching methodology and as a tool for innovation construction, using five stages: empathize, interpret, ideate, experiment/prototype, and evolve[9].

In this research, the fifth stage of DT, "evolve," will be presented, with a description of the procedures related to the refinement and validation of the open educational resource through feedback from a team of experts, aiming to discuss the purpose of the course and identify solutions collectively to add value to the technological tool.

In the content validation process, judges were selected through a search strategy based on the following criteria: subject (title or keyword of production) – neonatal nursing, validation studies, and distance education, with options for "Ph.D." and "other researchers (masters, specialists)"; and through the snowball technique by consulting the Lattes Platform and contacting existing leaders and members of research groups registered in the CNPq Research Groups Directory, specifically in the field of health informatics.

To include the judge in the sample, the criteria of Jasper[10] were used as a basis, according to which the judge must meet at least two of the five inclusion criteria: have skills/knowledge acquired through experience; have specialized skills/knowledge that make them an authority on the subject; have special skills in a particular subject; have passed a specific test to identify specialists; and have a high rating given by an authority in the study's area of interest. For professionals in the design field, the following criteria were considered: academic qualifications, professional experience, research background, and knowledge of the construction and validation of assistive/educational technology.

A total of 60 judges were invited, and 13 responded, including 9 nurses, 1 physician, 1 physiotherapist, and 2 educational designers. This number falls within the range recommended by the theoretical framework, which suggests a minimum of 6 judges and a maximum of 20[8]. A decision was made intentionally to use an odd number of evaluators to avoid ambiguous questions and tie opinions.

Thus, the selected judges received an invitation via email containing two exclusive access links. In the first link, instructions for accessing the VLE platform, login information, temporary password, the invitation letter, and the Informed Consent Form were provided. In the second link, the evaluator's profile characterization data and the Educational Content Validation Instrument in Health were included[11]. In this, the judges evaluated the course regarding the objective, structure/presentation, and relevance, distributed across 18 items with response options using the Likert scale, where 0 = disagree, 1 = partially agree, and 2 = fully agree. A deadline of 15 days was set for the return of the data collection material. In cases of delay, a follow-up contact was made with the respective judge, emphasizing the importance of participation and course evaluation, and an additional seven-day extension was granted. Then, the form was closed, and no further responses were received. In total, the data collection period for content validation spanned from January to June 2022.

Regarding the final structure of the course, the first and second modules emphasize the importance of nurses and healthcare teams in developmental care, revisiting Florence Nightingale's Environmental Theory to highlight the interconnections between care and the social environment, a first-order dimension that integrates the universe of care for at-risk newborns. The third module broadly covers knowledge about the application of positioning techniques, understanding them within a care continuum that should be part of the assistance provided to preterm infants, helping them better cope with the NICU environment. Finally, the fourth module includes useful information to enhance guidance and strengthen monitoring programs for at-risk babies, such as: organizing care plans, home visits, integration between health services, and providing support to families, especially those in vulnerable situations. At the end of each module, the learner completes a learning exercise, in addition to the final test for course completion.

The next step was the course launch, which took place in December 2022, through a webinar organized by the State Telehealth Center. A schedule was prepared with presentations by nurses who are references in the field of neonatal management and care, as well as the presentation of an educational video about the course structure, its objectives, requirements, and platform access instructions. After the launch, access to the course was made available for the learners to register on the Telehealth VLE platform through the link https://telessaude.pe.gov.br/ead/, and then enroll in the

course. Thus, by June 2023, there were 1,347 registered participants, of whom 175 had completed the course, and 1,172 were still enrolled. At the end, the completers respond to a satisfaction questionnaire that generates indicators of overall course quality, content relevance, learning enhancement, and practical applicability.

In the evaluation of learner satisfaction, an adapted form based on Donald Kirkpatrick's Model[12] was used to measure satisfaction regarding the VLE, content, and applicability in their work context. The model encompasses four levels of evaluation: reaction, learning, behavior, and results. In this course, the level of reaction evaluation was used, which focuses on collecting feedback from the learners. The reaction evaluation is crucial for identifying both positive and negative aspects of the course, enabling the management team to envision opportunities for improvement regarding content, format, and teaching methodology to better meet the needs of the learners.

The data were stored and organized in Microsoft Excel for Windows and subsequently processed in the Statistical Package for the Social Sciences (SPSS), version 23.0. Descriptive statistics were used to analyze the social and professional variables of the judges and the responses from the learners' satisfaction questionnaire. Content analysis employed the Content Validity Index (CVI) and the Content Validation Coefficient (CVC). The use of CVI followed three approaches: I-CVI (Item-Level Content Validity Index): for each item, the I-CVI was computed by the number of judges who rated the item positively, i.e., responded "agree" and "strongly agree"; b) S-CVI/AVE (Scale-Level Content Validity Index, Average Calculation Method): the average of the I-CVIs of all items on the scale; c) S-CVI/UA (Scale-Level Content Validity Index): proportion of items rated as "agree" and "strongly agree" by all judges[13].

The objective of the CVC is to examine items that may not be suitable for the instrument's objectives. For this study, the CVC was calculated for each item (CVC_i) and for the instrument as a whole (CVC_T). The CVC for each item (CVC_i) is calculated by dividing the mean of the judges' ratings ($\sum x/j$) by the maximum value of the last category of the Likert scale (Vmax). The total CVC (CVC_T) is obtained by subtracting the mean of the judges' CVCs (CVC_j) for the entire instrument from the standard error (PEj) of judge polarization[12]. Additionally, the exact binomial distribution test was conducted, recommended for small samples, with a significance level of 5% ($p > 0.05$), and a proportion of 0.80 for response agreement among judges, in order to estimate the statistical reliability of the CVI and CVC. Values of CVI and CVC equal to or greater than 0.80 were considered valid, with a preference for values greater than 0.90[13–14].

In all data collection stages involving human subjects, the signing of the Informed Consent Form was requested. The research was approved by the Research Ethics Committee.

RESULTS

Regarding the characterization of the judges who validated the course, 12 were female, and 1 was male. Regarding their academic qualifications, five had post-doctoral degrees, four had doctoral degrees, two had master's degrees, and two were specialists in the field of neonatology. In terms of professional practice, nine had an average of 12 years of experience in providing care for preterm newborns, while two had an average of five years of experience. In terms of professional experience, nine had an average of 12 years of experience in providing care for preterm newborns, while two had an average of five years of experience.

As shown in Table 1, the judges considered the course content adequate, with CVI and CVC measures per item being greater than 0.80 ($p > 0.05$ – binomial distribution test). The course evaluation encompassed three aspects (objective, structure/presentation, and relevance), with an average agreement per aspect greater than 80.0%, at 95.2%, 100.0%, and 100.0%, respectively. The proportion of items on the instrument that achieved total agreement (strongly agree or partially

agree) from all judges (S-CVI/UA) was 83.3%, and the total CVC (CVC$_T$) was 91.0%. Even with this result, the suggestions made by the judges in the comments section of the collection instrument were taken into account. Since these were changes that did not compromise the course content, the course was considered validated in the first round. The judges suggested reversing the order of video lectures with the inclusion of reminders and keywords throughout the recording, revising the clinical case and exercise questions for grammatical correctness, as well as providing suggestions for bibliographic references for consultation. All the modifications allowed to enhance the quality of the content provided in the course.

Table 1 – Concordance of judges regarding the objectives, structure, presentation, and relevance of the online course (n = 13) Recife, Pernambuco, Brazil, 2023.

Evaluated Aspects	Agreement n (%)			I-CVI*	CVCi†	p-value‡
	I disagree	Partial Agreement	I totally agree			
Objectives						
1. It addresses the topic proposed	0 (0.0%)	2 (15.4%)	11 (84.6%)	1.0	0.92	0.055
2. It is suitable to the teaching-learning process	0 (0.0%)	4 (30.8%)	9 (69.2%)	1.0	0.85	0.055
3. It clears doubts about the topic addressed	1 (7.7%)	0 (0.0%)	12 (92.3%)	0.92	0.92	0.234
4. It provides a reflection on the topic	1 (7.7%)	0 (0.0%)	12 (92.3%)	0.92	0.92	0.234
5. It encourages a change in behavior	1 (7.7%)	2 (15.4%)	10 (76.9%)	0.92	0.85	0.234
(S-CVI/Ave)‖		95.2%				
Structure/Presentation						
6. Adequate language for the target audience	0 (0.0%)	1 (7.7%)	12 (92.3%)	1.0	0.96	0.055
7. Appropriate language for the educational material	0 (0.0%)	2 (15.4%)	11 (84.6%)	1.0	0.92	0.055
8. Interactive language, allowing for active involvement in the educational process	0 (0.0%)	3 (23.1%)	10 (76.9%)	1.0	0.88	0.055
9. Correct information	0 (0.0%)	3 (23.1%)	10 (76.9%)	1.0	0.88	0.055
10. Objective information	0 (0.0%)	4 (30.8%)	9 (69.2%)	1.0	0.85	0.055
11. Clarifying information	0 (0.0%)	2 (15.4%)	11 (84.6%)	1.0	0.92	0.055
12. Necessary information	0 (0.0%)	3 (23.1%)	10 (76.9%)	1.0	0.88	0.055
13. Logical sequence of ideas	0 (0.0%)	3 (23.1%)	9 (69.2%)	1.0	0.85	0.055
14. Current topic	0 (0.0%)	1 (7.7%)	12 (92.3%)	1.0	0.96	0.055
15. Adequate text size	0 (0.0%)	3 (23.1%)	9 (69.2%)	1.0	0.85	0.055
(S-CVI/Ave)‖		100.0%				
Relevance						
16. Promotes learning	0 (0.0%)	1 (7.7%)	12 (92.3%)	1.0	0.96	0.055
17. It contributes to knowledge in the area	0 (0.0%)	1 (7.7%)	12 (92.3%)	1.0	0.96	0.055
18. It arouses interest in the topic	0 (0.0%)	1 (7.7%)	12 (92.3%)	1.0	0.96	0.055
(S-CVI/Ave)‖		100.0%				

* I-CVI – Item-Level Content Validity Index; † CVC$_i$ – Content Validation Coefficient of item i; ‡ p – binomial distribution test; ‖ S-CVI/AVE – Scale-Level Content Validity Index (average calculation method).

Table 2 presents the satisfaction and quality indicators of the course obtained from the responses of the learners who completed the course by June 2023. High rates of satisfactory responses are observed regarding the content covered in the course, navigability, materials provided, knowledge acquired, and its applicability in practice. Regarding the profile of the completers, 75 (42.9%) were aged between 25 and 35 years, 79 (45.1%) had completed higher education, and 126 (72.0%) were healthcare professionals (nurses, physiotherapists, speech therapists, and doctors). When asked about their motivation to participate in the course, 98 (56.0%) reported the need to improve their professional practice, and 50 (28.5%) mentioned their interest in learning the content. Professionals from the states of Pernambuco, Bahia, Alagoas, Ceará, Pará, Amazonas, Minas Gerais, Espírito Santo, São Paulo, Distrito Federal, Rio de Janeiro, and Rio Grande do Sul participated.

In the final part of the questionnaire, there is an open field where the learners justify the reason for marking "dissatisfied" or "very dissatisfied" in some of the assessed items. The majority of responses in this field were about difficulties in visualizing slides on smartphones and issues with the final assessment that were not identified in the content, aspects that can be improved in the next version of the course. Additionally, many other learners took advantage of the space to provide a positive evaluation and commented on the organization and clarity of the course, the good distribution of educational materials, and the balanced workload for completion. Another field inquired about the possible impacts of completing the course on the healthcare service where they work, with responses related to the acquisition of knowledge and improvement of clinical practice and care.

Table 2 – Indicators of satisfaction and quality of the course evaluated by the completing learners (n=175) Recife, Pernambuco, Brazil, 2023.

Evaluated Items	Satisfaction Indicators n (%)			Dissatisfied	Indifferent
	Very satisfied	Satisfied	Very dissatisfied		
1. Course content coherent with learning needs	115 (65.7%)	56 (32.0%)	2 (1.1%)	1 (0.6%)	1 (0.6%)
2. Course content coherent with professional practice	115 (65.7%)	55 (31.4%)	0 (0.0%)	2 (1.1%)	3 (1.7%)
3. Sequence in which the contents were presented	118 (67.4%)	54 (30.8%)	2 (1.1%)	1 (0.6%)	0 (0.0%)
4. Resources (texts, videos, images, virtual library)	111 (63.4%)	60 (34.2%)	2 (1.1%)	0 (0.0%)	2 (1.1%)
5. Assessment activities	100 (57.1%)	68 (38.8%)	2 (1.1%)	3 (1.7%)	2 (1.1%)
6. Navigation in the VLE	105 (60.0%)	63 (36.0%)	2 (1.1%)	2 (1.1%)	3 (1.7%)
7. Support for issues with the VLE	96 (54.8%)	62 (35.4%)	0 (0.0%)	2 (1.1%)	15 (8.6%)
8. Time to complete the course	111 (63.4%)	60 (34.2%)	0 (0.0%)	2 (1.1%)	2 (1.1%)
9. Understanding of postural care for preterm newborns after participating in the course	104 (59.4%)	68 (38.8%)	0 (0.0%)	2 (1.1%)	1 (0.6%)
10. Application of the acquired knowledge from the course in professional practice	111 (63.4%)	60 (34.2%)	0 (0.0%)	3 (1.7%)	1 (0.6%)

DISCUSSION

Online courses have gained significant prominence in education and professional training practices in healthcare, integrating educational platforms of important public institutions. As a technological tool, it is capable of instructing with interactivity and motivation, essential requirements to create favorable conditions for a learning process committed to knowledge generation[15]. However, it is necessary to rigorously provide content on platforms to achieve the desired quality in professional training offered in the online format. Therefore, the knowledge conveyed in the course needs to be reliable, accurate, and based on secure scientific evidence and undergo a validation process with experts to contribute to the quality of the developed material[15].

Specifically, courses in this modality have aroused the interest of healthcare professionals and nurses to drive improvements in care practices, while offering a promising field for nursing to develop and lead continuous education programs through digital technologies in online teaching. A study demonstrated that when healthcare institutions and educational establishments foster a conducive creative environment for nurses to express their ideas and opinions and devise strategies to enhance participation in training/updating courses, including those delivered remotely, improvements occur in care skills and the efficiency of time dedicated to care[16].

The implementation of integrative developmental care models in the NICU, considered a standard of excellence in care for preterm infants, is essential for individualized care and support for neurological development. This model proposed by scholars Altimier and Phillips[17] consists of seven components: 1) Healing environment; 2) Partnership with families; 3) Positioning and handling; 4) Sleep protection; 5) Minimization of stress and pain; 6) Skin protection; and 7) Optimization of nutrition. However, in the clinical practice of healthcare professionals, the focus on developmental care seems to be underexplored, leading to a greater concentration of care on the oxygenation, circulation, and nutrition needs in the early hours of life of PTNBs[6]. In a study from Portugal, it was found that among developmental care practices, positioning was the least frequent and sometimes neglected by nurses, indicating the need for greater emphasis on education[18], which aligns with the proposal of offering the course under investigation in this study.

Studies have reported advantages in offering online courses to enhance knowledge, skills, and the development of specific competencies in nurses and other team members, especially when structured modularly and enriched with demonstrative videos and case studies[4,19]. The online course on postural care for preterm newborns in the Neonatal Intensive Care Unit provided theoretical content and skills to help develop the clinical competence of healthcare professionals and nurses who provide care to at-risk babies. In its development, digital resources for educational purposes were considered, including the organization, interpretation, and visualization of the presented content, to ensure that the final product is engaging and conducive to reflection on practice, while also adding more knowledge[20]. In this study, the course followed a concise pattern in the arrangement of these aspects across its modules.

Overall, the evaluation of the course conducted by both judges and course participants was positive, with comments highlighting the importance of developmental support care in the NICU and the usefulness of the course in acquiring knowledge that can aid in professional practice. Validation by the judges allowed for the correction of inaccuracies and unclear information, as well as ensuring language that is appropriate and understandable to course participants[11]. This resulted in the final provision of an attractive educational resource with the potential to contribute to in-service training activities and other strategies for ongoing education.

It is worth noting that regarding the objectives, one judge disagreed on the following items: clarification of doubts and reflection on the topic; and behavior change. Although there was agreement of over 80%, this feedback led to a review of the course dynamics and the timing of information delivery to facilitate the construction of contextually relevant knowledge aligned with practical experience and to instigate a sense of bringing about changes in the care environment. With this revision, a positive evaluation was observed from the course participants, who identified coherence between the course content and the learning needs to enhance professional practice. The content of an online course for healthcare professionals with strong technical competence cannot be static and merely filled with information and prescriptive guidelines; it needs to address the concerns of healthcare services and meet the demands and needs of society[20].

The course, in its structure/presentation, considered the language, information, topic, and appropriateness of the text. To achieve this, it utilized various audiovisual resources and tools to stimulate the teaching-learning process, such as video lectures, texts, images, and exercises based on videos and photos. These resources enhance the active involvement of the learner in the educational process and stimulate the exercise of attention and memory in their work, as well as focusing on differentiating elements, concepts, and challenges, thereby contributing to a meaningful practical idea progression[21]. The association of words and images corresponding to practical actions was also adopted. The clinical cases aimed not only to exercise the ability to recognize real-world problems but primarily to provide concrete and applicable solutions.

Authors emphasize that the language used in an online course should be clear, concise, and accessible, in order to promote user understanding and the learning process[22]. The positive evaluation of information clarity by all judges supports this perspective. The judges also considered the items "interactive language" and "logical sequence of ideas" to be of great relevance. Visual information should be conducive to learning, encouraging individuals to progress in their knowledge; however, it should be used to maximize teaching and not cause distractions[22]. In the course, video resources, special markings, and moving images were integrated with text information, either reinforcing or introducing new content. In addition, the interface, colors, and font selected were also well evaluated, as they facilitated the presentation and visualization of the content. A study that validated the layout and content of an online course on neonatal pain assessment highlighted the importance of visual identity in sparking curiosity and connection with knowledge[23].

There was a concern to review the comments and highlights given by the judges, as there are misconceptions regarding the structure and requirements of a distance learning course. One of them is the misconception that ease of access does not require responsibility and dedication to studies. Effort and difficulties are inherent conditions in any situation of new learning, regardless of the mode of education[22]. The convenience of taking an online course does not necessarily imply easier studying, as it requires availability, organization of a work schedule, and commitment to learning.

One strong point mentioned by the judges was the use of video lectures demonstrating posturing techniques using a neonatal mannequin, with the possibility for course participants to replay the material for exercises and reflections on their practical performance. Postural support techniques are underutilized or performed with little safety among the interventions for preterm infants[24]. Studies conducted in South Korea[25] and Saudi Arabia[5] demonstrated an improvement in nurses' knowledge and performance regarding postural care for preterm infants in the NICU after the implementation of a video-based training program. A highlight was the inclusion of information about parental involvement in changes of position, where they start to develop shared care with the support of professionals to achieve not only emotional connections but also positive responses linked to the sensory and motor rehabilitation of infants[26].

Considered a low-cost technique, postural care requires the adoption of gentle, soft, and delicate touch during professional interventions. For its application, materials available within the unit itself can be used, such as cloths, bands, rolls, mats, and the use of homemade nets, effectively and safely, in different strategies, such as swaddling and kangaroo positioning[18]. As a subject of multiprofessional intervention, postural care for preterm infants should be systematized in care protocols, defining professional responsibilities, clinical criteria, positioning duration, and patient management periods, reducing excessive handling and continuous disruptions of the sleep/wake cycle, which add additional risk for PTNBs[26].

For the participants, the course proved to be a satisfactory tool, as educational aspects (relevance of the topic, clear objectives, as well as static and dynamic materials), interface of the environment (navigability and accessibility), and didactic resources (interactivity and presentation of resources) resulted in percentages above 50.0% for each of the items. The characteristics of the virtual environment are essential for the success of an online course with positive expectations regarding learning and continuity in fulfilling its stages: it must be accessible and organized, visually appealing, and easy to use[6]. In a study validating an online training program[27], high rates of positive responses regarding professional satisfaction were also found, enabling the course to certify healthcare professionals, including their role as multipliers.

It is noteworthy that professionals positively highlighted the possibilities of applying the knowledge acquired in clinical practice. This is due to the differentiated approach of the course, which encourages a collaborative environment in the context of essential care for at-risk newborns. The adherence of professionals to good care practices and health interventions after online training was verified in another study[28]. Even with the workload and professional responsibilities, they are able to easily access these types of courses, including in the workplace, cooperatively with other team members.

Thus, the choice of an online self-instructional format for the course was made due to the target audience, mostly adults and professionals working in or interested in neonatal care, who can access the course content from anywhere, using various electronic devices, and at their desired frequency, according to their work pace and individual availability[29]. This makes it even more important for those facing difficulties accessing continuing education in a country like Brazil, with regional asymmetries in higher education centers and a concentration of professionals with access to better levels of qualification in certain locations[30]. In this context, the presence of well-trained and oriented nurses and professionals is indispensable, as they are capable of advocating for the interests of children and families, using their knowledge and clinical practice to change the environmental culture in the NICU, strengthening multidisciplinary care models and decision-making processes[2,7].

The validation process of the course on postural care for preterm infants in the NICU confirmed the reliability and safety of scientifically grounded information. The partnership with the General Directorate of Telehealth of Pernambuco, linked to the State Health Department (DGT-SES/PE), enabled the creation of an open and massive educational resource that strengthens professional competence programs in neonatal permanent education services, aiming for greater alignment between the provided training and the care models adopted in the public policies of the Unified Health System (SUS).

This study aimed only to conduct content validation of the course with expert judges, and the face validity was not assessed with the professionals of the multidisciplinary healthcare team working in the NICU. However, it presents the opinion of the course participants upon completion as a strategy to verify if the teaching tool is well-received by the participants.

CONCLUSION

The online course on postural care for preterm newborns in the Neonatal Intensive Care Unit had its content validated by judges and was satisfactorily evaluated by the course participants. The quality of the subjects/information regarding objectives, structure/presentation, and relevance was ensured, and agreement exceeding 80.0% was achieved in all items. The positive initial experience of the course participants reinforces the potential of the course in enhancing professional practice with repercussions on meeting essential prerequisites in neonatal care in a comprehensive and singular manner.

The final version of the course has a total duration of 30 hours, featuring tests, mini-games, clinical cases, and video lectures. It provides a logical sequence of knowledge about the humanization of neonatal care in critical environments and the importance of minimal interventions that promote tranquility and comfort, laying the foundation for the implementation of health and nursing care supporting developmental care. Thus, the course consists of a viable technological resource in the form of open education, with the possibility of integrating telehealth platforms to achieve goals such as: promoting the improvement of healthcare professionals providing care to PTNBs, acting as multipliers of good neonatal care practices in their clinical contexts; and collaborating with management strategies focused on the quality of care and safety of care for preterm infants.

Finally, it is emphasized the need for evaluation of the course in clinical practice, assessing the advantages of this educational offering in bringing about positive changes in professional performance and enhancing the formative process, which stands as an objective for future studies.

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NOTES

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