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Validation of a technical product to evaluate clinical skills of nursing students in realistic simulation in pre-hospital care

Validación de un producto técnico para evaluar habilidades clínicas de estudiantes de enfermería en simulación realista en atención prehospitalaria

Validação de um produto técnico para avaliação de habilidades clínicas dos estudantes de enfermagem na simulação realística em atendimento pré-hospitalar

ABSTRACT

Objective: To validate an instrument for assessing the skills, abilities, and attitudes of nursing students during the practice of realistic simulation in pre-hospital care. **Methodology:** Methodological study carried out through the Delphi Method at a Private Faculty in Recife from March to June 2019. Eleven teachers participated in the content validation using the Likert Scale, through the application of a self-responsive form with 21 items. Data analysis was performed using the Content Validation Index and Cronbach's Alpha. **Results:** The content validation had scores of 0.8 indicating high validity of the instrument regarding questions of realistic simulation in pre-hospital care. The instrument's reliability obtained a value of 0.79 assessed as substantial, considering the reliability classification table of Cronbach's alpha. **Conclusion:** The technical product called "Form for evaluating knowledge, skills and attitudes in pre-hospital care in Realistic Simulation" was validated, with 21 items evaluated with satisfactory Content Validity and Cronbach's Indexes.

DESCRIPTORS: Nursing Evaluation; Patient Simulation; Simulation Training.

RESUMEN

Objetivo: Validar un instrumento para evaluar las habilidades, habilidades y actitudes de estudiantes de enfermería durante la práctica de simulación realista en la atención prehospitalaria. **Metodología:** Estudio metodológico realizado mediante el Método Delphi en una Facultad Privada de Recife de marzo a junio de 2019. Once profesores participaron en la validación de contenido mediante la Escala Likert, mediante la aplicación de un formulario de respuesta propia con 21 ítems. El análisis de los datos se realizó mediante el Índice de Validación de Contenido y el Alfa de Cronbach. **Resultados:** La validación de contenido obtuvo puntuaciones de 0,8 indicando alta validez del instrumento en cuestiones de simulación realista en la atención prehospitalaria. La confiabilidad del instrumento obtuvo un valor de 0,79 evaluado como sustancial, considerando la tabla de clasificación de confiabilidad del alfa de Cronbach. **Conclusión:** Se validó el producto técnico denominado "Formulario para la evaluación de conocimientos, habilidades y actitudes en la atención prehospitalaria en Simulación Realista", con 21 ítems evaluados con Validez de Contenido e Índices de Cronbach satisfactorios.

DESCRIPTORES: Evaluación de Enfermería; Simulación de Pacientes; Entrenamiento de Simulación.

RESUMO

Objetivo: Validar um instrumento de avaliação de competências, habilidades e atitudes de estudantes de enfermagem durante a prática de simulação realística em atendimento pré-hospitalar. **Metodologia:** Estudo metodológico realizado através do Método Delphi em uma Faculdade Particular do Recife no período de março a junho de 2019. Onze docentes participaram da validação de conteúdo utilizando a Escala de Likert, através da aplicação de um formulário auto-responsivo com 21 itens. A análise dos dados foi realizada através do Índice de Validação de Conteúdo e do Alpha de Cronbach. **Resultados:** A validação de conteúdo apresentou escores de 0,8 indicando alta validade do instrumento acerca das questões de simulação realística em atendimento pré-hospitalar. A confiabilidade do instrumento obteve valor de 0,79 avaliado como substancial, considerando a tabela de classificação de confiabilidade do alpha de Cronbach. **Conclusão:** Foi validado o produto técnico denominado "Formulário de avaliação de conhecimentos, habilidades e atitudes em atendimento pré-hospitalar na Simulação Realística", com 21 itens avaliados com Índices de Validade de Conteúdo e Cronbach satisfatórios.

DESCRITORES: Avaliação em Enfermagem; Simulação de Paciente; Treinamento por Simulação.

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INTRODUCTION

Considering the aspects of the contemporary world of work and the adequacy of new types of assistance in the health sector in Brazil, it is necessary to reflect on the training of nurses. Since the implementation of the National Curriculum Guidelines (DCN) of the undergraduate nursing course, changes in the health training process have been taking place, specifically regarding the curricula and the implementation of innovative learning methodologies⁽¹⁾. The use of active methodologies, with a focus on realistic simulation, stands out⁽²⁻³⁾.

The use of innovative methodologies favors the teaching and learning process and directs the exposure of students to the realistic simulation environment, providing an increase in competence and dexterity in the execution of procedures when compared to traditional methods of clinical practices⁽³⁾. Simulation also favors the creation of means for assessing multiple professional competencies and skills, which are fundamental for the professional training of nurses,

how to act and think critically, as well as decision-making skills⁽³⁻⁴⁾.

The simulation process begins with the presentation by the teacher to the student or to a group of students of a real case, where he will fully assume responsibility for the conduct of the case in question⁽⁴⁻⁵⁾. The technique can be performed using high-fidelity, extremely realistic mannequins, with real-time responses; medium fidelity, more realistic and can offer auscultation of breathing, heart, pulse or low fidelity sounds, with static materials, less realistic and used for specific procedures⁽⁶⁾.

The main situations present in pre-hospital care demonstrate that the professional's agility minimizes the risk of sequelae and increases the victim's chance of survival. However, what is perceived in practice is a feeling of insecurity of the newly graduated nurse to work in the urgency and emergency services secondary to an insipient academic formation of effective training to assist the critical patient. The nurse's profile to work in these sectors must demonstrate agility, skill and capacity to establish conscious and safe priorities and attitudes⁽⁷⁾.

Due to the high demand for practical knowledge of the graduates, the assisted training method, which was previously performed with real patients during the clinical internship, has been replaced, in part, by realistic simulation, which provides the advantage of consistent learning, decreasing unfavorable outcomes in actual practice⁽⁶⁾.

For the simulation to be effective, the assessment instrument must be well structured, encompassing all the knowledge, attitudes and skills presented by the students. In this sense, making use of a validated instrument gives methodological rigor to the process, well-defined steps and precise procedures. Content validation consists of assessing whether the selected items can measure the concept to be measured. On the other hand, semantic validation aims to identify whether the items of the instrument have an acceptable level of understanding of technical terminology⁽⁷⁻⁹⁾.

In this way, the importance of thinking about the realistic simulation methodology as a technology applicable to educational actions in the academies is visible, since it allows the student the opportunity to expand skills not pre-

viously explored and become a differentiated professional in the education market. job. That said, this study aimed to validate a technical product for assessing the skills, abilities and attitudes of nursing students during the practice of realistic simulation in pre-hospital care.

METHODOLOGY

Methodological study for validation of technical product, developed in three stages: construction of the instrument, content validation and semantic validation⁽¹⁰⁾. The research was developed at a Private Faculty of the State of Pernambuco from March to June 2019.

In the first stage, construction of the instrument, the definition of the object and identification of items corresponding to the skills, abilities and attitudes needed by the nursing student in assistance in pre-hospital care through a literature review on the specific area in the Bases of CAPES journals. The Form was divided into two parts: The first, containing eleven questions regarding the characteristics of expert judges, and the second, with twenty-one items related to pre-hospital nursing care, organized in accordance with the Likert Scale and with variations of 1 to 5, 1 being "Very irrelevant", 2 "Irrelevant", 3 "Not very relevant", 4 "Relevant" and 5 "Very relevant".

The content validation was performed by expert judges through expertise in pre-hospital care and the choice was subsidized by an intentional sampling anchored in the Fehring criteria. Fehring's criteria take into account academic training, professional performance (teaching, research and extension), refresher course and scientific production in the specific area⁽¹¹⁻¹²⁾. Judges were invited to participate, those who reached a minimum score of seven points, totaling eleven experts. The semantic validation was performed by six expert judges and a lyricologist judge, in order to identify orthographic and understanding disagreements under the

In the first stage, construction of the instrument, the definition of the object and identification of items corresponding to the skills, abilities and attitudes needed by the nursing student in assistance in pre-hospital care through a literature review on the specific area in the Bases of CAPES journals.

terms provided in the instrument.

The data were entered with double entry in EPInfo for validation of the database and subsequent correction of the differences found. Once validated, the data were exported to IBM® SPSS® Statistics software, version 20.0 where the analysis was performed. In order to verify the degree of validity attributed by the judges to the items in the proposed questionnaire, the measures were calculated: I-CVI (content validity of individual items), S-CVI / AVE (the proportion of scale items assessed as relevant and very relevant by each judge) and S-CVI (average of the proportion of items assessed as relevant and very relevant by the judges) 24,25. In order to be considered adequate, each evaluated item presented a Content Validation Index ≥ 0.80 giving a statistical significance of $- P \geq 0.05^{(8)}$.

For the level of credibility and reliability of the instrument, the Cronbach's alpha coefficient was used. A cutoff value of 0.7026 was established in accordance with the reference values of the instrument's internal consistency. After the first round, none of the items received a value lower than the established cutoff point, therefore, it was not necessary to make adjustments to the technical product due to the consensus among the experts⁽⁸⁻⁹⁾.

The study is in line with Resolution No. 466, of December 12, 2012, of the National Health Council (CNS) and was approved by the Research Ethics Committee of the Pernambuco de Saúde Faculty (CEP-FPS) under the number of CAEE: 08331319.0.0000.5569.

RESULTS

Table 1 presents a characterization of the socio-academic profile of the invited judges to perform the content and semantics validation of the aforementioned instrument. It appears that the majority is female (90.9%) and the average age is 42 years. As for the academic and institutional profile, the majority

completed the undergraduate course 10 years ago or more (63.6%), 72.7% of the professors have a master's degree and have 10 years or more of work at the institution (54.5%).

The election of the judges was con-

ditioned to their expertise in realistic simulation with a focus on pre-hospital care. Table 2 validates this information by showing that 72.7% have clinical experience in the pre-hospital care area and 63.6% have specializations in the pre-hospital care area. It is also observed that nine of the eleven judges have experience with realistic simulation (81.8%) and already use the technique for training in pre-hospital care.

The second stage of the construction of the instrument, consisted of twenty-one items that deal with knowledge, attitudes and skills related to pre-hospital nursing care. Chart 1, shown below, lists these items, the letter "Q" being used for the abbreviation of the word question.

To analyze the validity of each item, the Content Validity Index (CVI) was used, assigning a value of 0.8 as a minimum cut-off point⁽⁸⁾.

Table 3 shows statistically that all the calculated CVIs (I-CVI, S-CVI / AVE and S-CVI) were above 0.8, indicating high validity of the instrument regarding the questions of realistic simulation in prehospital care⁽¹⁴⁾. It is also observed that the average of the I-IVCs and the average of the proportion of items assessed as relevant and very relevant by the judges was 0.96.

The reliability analysis for the judges' response to the instrument of realistic simulation questions in prehospital care, through the measurement of Cronbach's alpha (Table 4).

The value of Cronbach's Alpha was 0.79, considering the instrument as substantial according to the internal consistency reference values⁽⁸⁻⁹⁾.

DISCUSSION

In view of the priority competencies for nurses defined by COFEN Resolution No. 551/2017 in the face of a pre-hospital care scene, professionals need to develop domains related to the ability to work in teams, communication and leadership, self-control,

Table 1. Characterization of the socio-academic profile of the expert judges invited to perform the content and semantics validation of the instrument. Recife, PE, Brazil, 2019

Variáveis	n	%
Sexo		
Feminino	10	90,9
Masculino	1	9,1
Idade		
27 a 39 anos	5	45,5
40 a 49 anos	4	36,4
50 ou mais anos	2	18,1
Tempo de conclusão da graduação		
Menos de 10 anos	4	36,4
10 ano ou mais	7	63,6
Instituição		
UFPE	3	27,3
FUNESO	2	18,2
UPE	2	18,2
FPS	3	27,3
UFPB	1	9,1
Titulação máxima		
Especialização	2	18,2
Mestrado	8	72,7
Doutorado	1	9,1
Tempo de serviço na FPS		
Menos de 10 anos	5	45,5
10 ano ou mais	6	54,5

* Minimum-Maximum 2.0 - 13.0
 ** Mean ± standard deviation 8.5 ± 4.4

Table 2. Expertise of Judges in the area of realistic simulation in pre-hospital care. Recife, PE, Brazil, 2019

Experiência avaliada	Resposta		p-valor
	Sim	Não	
Experiência clínica na área de atendimento pré-hospitalar	8 (72,7%)	3(27,3%)	0,132
Capacitações e especializações na área de atendimento pré-hospitalar	7 (63,6%)	4(36,4%)	0,366
Possui experiência com simulação realista	9 (81,8%)	2(18,2%)	0,035
Já utilizou a simulação realista para treinamentos em atendimento pré-hospitalar	9 (81,8%)	2(18,2%)	0,035

Chart 1. Competencies, skills and attitudes in pre-hospital care. Recife, PE, Brazil, 2019

QUESTÃO AVALIADA
Q1- Identifica vítimas com maior gravidade, com ênfase em perda de membros e de vida.
Q2- Realiza avaliação primária da cena.
Q3- Remove vestimentas da vítima para melhor visualização das lesões
Q4- Promove aquecimento da vítima para prevenção de hipotermia
Q5- Realiza imobilização da vítima, alinhada em posição neutra em prancha longa.
Q6- Remove a vítima em bloco até o transporte.
Q7- Posicionamento.
Q8- Realiza adequadamente a imobilização das fraturas
Q9- Realiza a sequência XABCD para as vítimas do trauma.
Q10- LIDERANÇA Delega responsabilidades
Q11- Reconhece os sinais de uma PCR?
Q12- Realiza a ressuscitação cardiopulmonar corretamente?
Q13- Coloca colar cervical corretamente, com estabilização da coluna cervical.
Q14- Na presença de hemorragia realiza curativo compressivo ou em caso de ineficiência da compressão utiliza-se torniquete no tempo de 2-2,5h.
Q15- Realiza técnica de retirada de capacete
Q16- Realiza rolamento de 180° nas vítimas em decúbito ventral
Q17- Aplica escala de Glasgow de forma adequada
Q18- Solicita ajuda, reforço. (Liga para o serviço de urgência 192)
Q19- Utiliza os EPIs na assistência de forma correta.
Q20- Apresenta postura ética e mantém a privacidade do paciente quando possível.
Q21- Realiza comunicação verbal com a vítima.

Table 3. Content Validity Index (CVI) for instrument items Evaluation of realistic simulation in prehospital care. Recife, PE, Brazil, 2019

Questão Avaliada	Juízes											I-MC
	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	
Q1	5	5	5	5	5	5	5	5	5	5	5	1,00
Q2	5	5	5	5	5	5	4	4	5	4	4	1,00
Q3	4	4	4	5	4	4	5	3	5	3	4	0,82
Q4	4	4	4	4	4	3	4	4	5	3	5	0,82
Q5	4	5	5	5	5	5	5	5	5	5	5	1,00
Q6	4	5	5	4	5	5	5	5	5	5	5	1,00
Q7	4	4	5	4	3	4	5	4	4	4	5	0,91
Q8	4	4	5	4	5	5	5	5	5	5	5	1,00
Q9	5	5	5	5	5	5	5	5	5	5	5	1,00
Q10	4	4	4	4	4	4	4	4	5	5	5	1,00
Q11	5	5	5	5	5	5	5	5	5	5	5	1,00
Q12	5	5	5	5	5	5	5	5	5	5	5	1,00
Q13	5	4	5	5	5	5	5	5	5	5	5	1,00

knowledge and technical skills, facility to delegate tasks and be a health educator for your team⁽¹³⁾.

It is worth mentioning that the simulation carried out in the researched educational institution does not have fixed situations. These are scenarios that undergo modifications every six months, with no specific case, therefore, to validate the technical product, both content and semantic validations were performed, guaranteeing its reliability.

Only six items evaluated received a different score of 1.00 (Maximum Score) in the evaluation by the CVI, which are: Removes the victim's clothing to identify injuries (ICD: 0.82); Promotes victim warm-up to prevent hypothermia (ICD: 0.82); Positioning (CIV: 0.91); Performs helmet removal technique (CIV: 0.91); Applies Glasgow Scale appropriately (CIV: 0.91);

Q14	4	5	5	5	5	5	4	5	4	5	5	1,00
Q15	4	4	5	3	5	5	5	5	5	5	5	0,91
Q16	4	4	5	4	4	5	5	5	5	4	5	1,00
Q17	4	4	5	2	5	5	5	4	5	5	5	0,91
Q18	5	4	4	3	4	5	4	3	5	4	5	0,82
Q19	5	4	5	4	5	5	5	4	5	5	5	1,00
Q20	4	4	4	4	5	4	5	4	5	5	5	1,00
Q21	4	4	4	4	5	5	5	4	5	5	5	1,00
S-CVI/ AVE	1,00	1,00	1,00	0,86	0,95	0,95	1,00	0,90	1,00	0,90	1,00	-

1. I-CVI (Level Content Validity Index) - for each item: the I-CVI was computed by the proportion of judges who rated the item as relevant and very relevant.

2. S-CVI / AVE (Scale-Level Content Validity Index, Average Calculation Method): the proportion of scale items assessed as relevant and very relevant by each judge.

3. S-CVI (Scale-Level Content Validity Index): average of the proportion of items assessed as relevant and very relevant by the judges (S-CVI = 0.96).

4. Average I-CVI = 0.96.

Table 4. Results of Cronbach's Alpha if the item is removed from the realistic simulation instrument in pre-hospital care. Recife, PE, Brazil, 2019

Questão Avaliada	Se o item for retirado do instrumento
Q1	0,792
Q2	0,819
Q3	0,810
Q4	0,792
Q5	0,786
Q6	0,769
Q7	0,789
Q8	0,759
Q9	0,792
Q10	0,773
Q11	0,792
Q12	0,792
Q13	0,786
Q14	0,815
Q15	0,751
Q16	0,767
Q17	0,742
Q19	0,762
Q20	0,764
Q21	0,758
Alpha de Cronbach do Instrumento	(0,790)

Request help, reinforcement by calling the emergency service 192 (CIV: 0.82).

It is worth mentioning that even with CVI scores below 1.00, the items have

high validity and are not included in the cut-off margin that would be 0.8.

In the case of a realistic simulation carried out in an educational institution, some aspects that conditioned the lowering of the CVI must be analyzed. Study⁽¹⁴⁾ agrees with the present research when it mentions the partial removal of clothes during realistic simulation processes, this fact to ensure privacy and minimize the exposure of the students who integrate the simulation.

The same occurs with the request for help and indication to call 192. The simulation, in the case of this study, starts with the arrival of the pre-hospital care team and not with the trauma kinematics since the shock, in this sense, call for SAMU (Mobile Emergency Care Service) does not have much relevance in this simulation, but still, it remained within the confidence interval and was maintained in the instrument⁽¹⁵⁻¹⁶⁾.

The instrument's internal consistency was measured using Cronbach's alpha coefficient⁽⁸⁻⁹⁾. The cut-off point established for Cronbach's alpha for each question evaluated was 0.70, with three questions (Q2, Q3 and Q14) being removed among the 21 listed, the instrument still remains with Cronbach above 0.8, indicating that its reliability value remains substantial or even has an almost perfect consistency (greater than 0.80).

In this sense, the technical product called "Form for evaluating knowledge, skills and attitudes in pre-hospital care in Realistic Simulation" was validated, with 21 items evaluated with satisfactory CVI and Cronbach.

CONCLUSION

There was a limitation in this study due to the lack of definition of the scenes worked on in pre-hospital care, therefore, there is no consensus that may come to define specific characteristics of care. However, the statements

presented in the instrument encompass most of the attitudes and skills required in the care of patients who need pre-hospital assistance. As it is an urgent and emergency teaching, where there is a wide variety of scenes that can be worked on, the instrument can

be adapted to the scene in question. The fact that the scenes are not fixed contributes to a greater reliability of the realistic simulation, since it seeks to be the closest to reality.

It is expected that the construction and validation of this technical pro-

duct will contribute to a better academic evaluation of the student during the practice of realistic simulation, seeking to achieve the learning objectives required for a comprehensive and efficient clinical practice, essential factors during pre-hospital care. ■

REFERENCES

1. Conselho Nacional de Educação, Câmara de Educação Superior (BR). Resolução CNE/CES n.º 3, de 07 de novembro de 2001. Institui as Diretrizes Curriculares Nacionais do curso de graduação em enfermagem. Diário Oficial da República Federativa da União [Internet]. Brasília, 09 nov. 2001. Seção 1, p. 37 [acesso em 20 jul 2020]. Disponível em: <http://portal.mec.gov.br/cne/arquivos/pdf/CES03.pdf>
2. Costa RRO, Medeiros SM, Martins JCA, Menezes RMP, Araújo MS. O uso da Simulação no contexto da Educação e Formação em Saúde e Enfermagem: Uma Reflexão acadêmica. Revista Espaço para a saúde [Internet]. 2015 jan/mar;16(1):59-65. Disponível em: <http://espacoparasaudefpp.edu.br/index.php/espacosaudef/article/view/418>
3. Ferreira C, Carvalho JM, Carvalho FLQ. Impacto da metodologia de simulação realística, enquanto tecnologia aplicada a educação nos cursos de saúde. Seminário de tecnologias aplicadas a educação e saúde [Internet]. 2015 [acesso em 20 jul 2020]. Disponível em: <https://www.revistas.uneb.br/index.php/staes/article/view/1617>
4. Nascimento JC, Franco FMC, Brito ES, Silva AL, Siqueira SMC, Junior WMS. Experiência da simulação realística no Treinamento de Profissionais de Saúde para atendimento de Múltiplas Víti-mas. Relato de experiência [Internet]. 2018 [acesso em 20 jul 2020]. Disponível em: <https://even3.blob.core.windows.net/anais/69276.pdf>
5. Costa RRO, Medeiros SM, Martins JCA, Cossi MS, Araújo MS. Percepção de estudantes da graduação em enfermagem sobre a simulação realística. Rev Cuid [Internet]. 2017 [acesso em 20 jul 2020];8(3):1799-808 Disponível em: <https://pesquisa.bvsalud.org/portal/resource/pt/biblio-963418>
6. Jeffries PR. Reflections on Clinical Simulation: The Past, Present, and Future. Nursing Education Perspectives [Internet]. 2015 Sep/Oct [acesso em 20 jul 2020];36(5):278-279. Disponível em: https://www.nursingcenter.com/journalarticle?Article_ID=3350575&Journal_ID=3332683&Issue_ID=3350571
7. Filho MLA, Martini JG, Lazzari DD, Vargas AM, Backes VMS, Farias MG. Estratégias utilizadas para o ensino de urgência/emergência em um curso de Graduação em enfermagem. Texto Contexto Enferm [Internet]. 2018 [acesso em 20 jul 2020]; 27(4):e3210016 Disponível em: <http://www.scielo.br/pdf/tce/v27n4/0104-0707-tce-27-04-e3210016.pdf>
8. Revorêdo LS, Dantas MMC, Maia RS, Torres GV, Maia EMC. Validação de conteúdo de um instrumento para identificação de violência contra criança. Acta paul. Enferm [Internet]. 2016 [acesso em 20 jul 2020];29(2):205-217. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002016000200205&lng=en
9. Fuzissaki MA, Santos CB, Almeida AM, Gozzo TO, Clapis MJ. Validação semântica de instrumento para identificação da prática de enfermeiros no manejo das radiodermatites. Rev. Eletr. Enf [Internet]. 2016 [acesso em 20 jul 2020]. Disponível em: <https://revistas.ufg.br/fen/article/view/35164>
10. Poli DF, Beck CT. Fundamentos de Pesquisa em Enfermagem. Avaliação de evidências para a prática de enfermagem. 7 ed. Porto Alegre: Artmed; 2011.
11. Fehring RJ. The ferling model. In: Carrol-Johnson RM, editor. Classification of nursing diagnosis: proceedings of the conference of North American Nursing Diagnosis Association [Internet]. Philadelphia: Lippincott; 1994 [acesso em 20 jul 2020]. Disponível em: http://www.scielo.br/scielo.php?script=sci_nlinks&ref=000123&pid=S0104-1169200800060000300019&lng=pt
12. Çelik Y, Ceylantekin Y, Kiliç İ. The evaluation of simulation market in nursing education and the determination of learning style of students. Int J Health Sci [Internet]. 2017 [acesso em 20 jul 2020]. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5327665/>
13. Conselho Federal de Enfermagem (BR). Resolução n.º 551 de 12 de junho de 2017. Normatiza a atuação do Enfermeiro no atendimento Pré-Hospitalar Móvel e Inter-Hospitalar em Aeronaves de asa fixa e rotativa [Internet]. Brasília (DF): COFEN, 2017 [acesso em 20 jul 2020]. Disponível em: http://www.cofen.gov.br/resolucao-cofen-no-05512017_52662.html
14. Rodrigues JA, Maia MMV, Lira PDGC, Zaidan JL, Amorim ES. A simulação realística em parada cardiorrespiratória como estratégia educacional em ambiente hospitalar: Formando um cuidado seguro. Congresso Nacional de Educação [Internet]. 2017 [acesso em 20 jul 2020]. Disponível em: <https://www.atenaeditora.com.br/post-artigo/12220>
15. Oliveira SN, et al. Experiential learning in nursing consultation education via clinical simulation with actors: action research. Nurse Educ Today [Internet]. 2015 [acesso em 20 jul 2020];35(2):50-4. Disponível em: <https://www.ncbi.nlm.nih.gov/pubmed/25563657>
16. Woda A, Hansen J, Paquette M, Topp R. The impact of simulation sequencing on perceived clinical decision making. Nurse Educ Pract [Internet]. 2017 [acesso em 20 jul 2020];26:33-8. Disponível em: [http://www.nurseeducationinpractice.com/article/S1471-5953\(17\)30387-6/pdf](http://www.nurseeducationinpractice.com/article/S1471-5953(17)30387-6/pdf)