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RESEARCH PAPER

Construction and Validation of the Simulation Debriefing Assessment Scale (*Escala de Avaliação do* Debriefing *associado à Simulação* - EADaS)

Construção e Validação da Escala de Avaliação do Debriefing associado à Simulação (EADaS)

Construcción y validación de una Escala para la Evaluación del *Debriefing* asociado a la Simulación (EADaS)

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Abstract

Background: Debriefing is a structured way for trainees to reflect on action, offering a reality, a way to see through their own eyes, the trainers' and their peers' eyes. Debriefing is an essential aspect of simulation, which should receive as much attention as the resolution of the scenario. A tool to assess the quality of the debriefing from the trainee's perspective is important for research and the continuous quality improvement.
Objectives: To construct and validate a simulation debriefing assessment scale.
Methodology: Methodological research study. A list of 50 items was developed based on the literature review and the researchers' experience, and applied as a questionnaire to 209 students of a Bachelor Degree in Nursing.
Results: After the analysis of the answers, a 34-item scale was designed, with high internal consistency (Alpha = 0.899). The factor analysis suggested a 3-factor solution, all of which with factors showing high Alpha values and rational significance.
Conclusion: The final version of the scale showed good psychometric properties with potential for use in future studies.

Keywords: debriefing; simulation; patient simulation; validation studies.

Resumo

Enquadramento: O debriefing é uma forma estruturada de conduzir os formandos na reflexão sobre a ação, oferecendo uma realidade, através dos seus olhos, do formador e seus pares. Numa simulação, o debriefing é parte fundamental, à qual se deve dedicar tanta atenção como à resolução do cenário. Uma ferramenta que permita avaliar a qualidade do debriefing, na perspetiva do formando, é importante para a investigação e melhoria contínua da qualidade.
Objetivos: Construir e validar uma escala de avaliação do debriefing associado à simulação.
Metodologia: Estudo de investigação metodológica. Foi desenvolvida uma lista de 50 itens, através de revisão da literatura e experiência dos investigadores, na forma de questionário, a 209 estudantes do Curso de Licenciatura em Enfermagem.
Resultados: Após análise das respostas, resultou uma escala com 34 itens, com elevada consistência interna (Alpha = 0,899). A análise fatorial sugere divisão em três fatores, todos com elevados valores de Alpha e com significado racional.
Conclusão: A versão final da escala apresenta boas propriedades psicométricas, revelando potencial para utilização em investigações futuras.

Palavras-chave: debriefing; simulação; simulação de paciente; estudos de validação.

Resumen

Marco contextual: El *debriefing* es una forma estructurada de conducir a los alumnos en la reflexión sobre la acción, ofreciendo una realidad, una manera de verse con sus propios ojos, los del profesor y sus compañeros. En una simulación, el *debriefing* es la pieza clave a la cual alumnos y profesores deben dedicar tanta atención como a la resolución de la práctica. Tener una herramienta para evaluar la calidad del *debriefing* en la perspectiva del alumno es importante para la investigación y para la mejora continua de la calidad.
Objetivo: Construcción y validación de una escala para la evaluación del *debriefing* asociado a la simulación.
Metodología: Investigación metodológica. Se desarrolló una lista de 50 ítems a partir de la revisión de la literatura y la experiencia de los investigadores y se aplicó, en forma de cuestionario, a 209 estudiantes de la Licenciatura en Enfermería.
Resultados: Del análisis de las respuestas resultó una escala con 34 ítems, con una alta consistencia interna (Alpha = 0,899). El análisis factorial sugiere una división en tres factores, todos con altos valores de Alpha y con significado racional.
Conclusión: Podemos decir que la versión final de la escala presenta buenas propiedades psicométricas, lo que demuestra su potencial de uso en futuras investigaciones.

Palabras clave: *debriefing*; simulación; simulación de paciente; estudios de validación

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Introduction

Debriefing is a structured way for trainees to reflect on action, helping to consolidate knowledge and change incorrect behaviours. Debriefing is an essential aspect of simulation. A tool to assess the quality of the debriefing from the trainee's perspective is important for research and the continuous quality improvement. As there is no instrument in Portuguese, we thought it would be helpful and relevant to build one that would allow such assessment. Thus, this study aimed to build and validate a simulation debriefing assessment scale.

Background

Debriefing in simulation

In nurses' training, active methodologies have been gaining ground, namely simulation. Simulation is an interactive method which allows for the learning of not only skills, but also overall competencies, such as decision-making in complex situations and environments. Through complete and complex scenarios in simulation environments, trainees consolidate knowledge and develop a whole set of skills which facilitate their technical, relational and ethical development (Martins, 2009).

It is a matter of using educational strategies that facilitate learning based on actual situations, thus promoting the students' development and confidence (Rodrigues & Baía, 2012).

Realism is an important aspect in simulation. Nowadays, when we associate a high-fidelity simulator with a realistic space, real material and equipment and sound and imaging technology that allows recording the students' performance and its further use for discussion, we are talking about high-fidelity simulation or realistic simulation (Martins et al., 2012). The authors add that both material and equipment are not enough; it is essential to have a well set up scenario, with clearly defined pedagogical goals and a prepared and motivated work team. The simulated clinical experience should end with a discussion (debriefing) on the trainees' performance in the resolution of the scenario.

The debriefing is referred to in the literature as the crucial or pivotal point to learning and the heart and soul of simulation (Gaba, Howard, Fish, Smith, & Sowb, 2001; Baldwin, 2007). It is the process by which trainers and trainees review the simulated clinical experience, fostering the development of reasoning and consolidation of knowledge through reflective learning processes. The trainers' guidance in this process and their focus on the objectives are the key to success (Shinnick, Horwich, & Steadman, 2011). The debriefing is also important as a tool to help students improve the affective domain of learning (Lasater, 2007).

In simulation, the debriefing phase is an intentional and important process designed to coordinate, strengthen and transfer learning from an experiential learning exercise (Warrick, Hunsaker, Cook, & Altman, 1979). The debriefing aims mainly at identifying the different perceptions and attitudes; relating the exercise to the specific theory or contents and technical skills; giving feedback about the nature and practice during the scenario; and establishing an environment of confidence and comfort.

The debriefing may take place after or during the simulation, though the students' outcomes are better in the first case due to the effectiveness in learning and the understanding of the whole situation (Heukelom, Begaz, & Treat, 2010; Shinnick et al., 2011).

In addition, many authors recommend a judgment-free and nonthreatening style, not limited to a mere inquiry (Dreifuerst, 2009).

The debriefing is a dynamic process that requires an active participation from trainees and trainers, and it should be planned for a time period that is at least equal to or greater than the time spent in the stimulus experience (Gururaja, Yang, Paige, & Chauvin, 2008). Even so, there is little evidence of results associated with the use of debriefing both because it has not been a researchers' focus of attention and because of the lack of instruments allowing for the assessment of such results. In Portugal, the theme is new, and there is no assessment instrument.

Methodology

This is a methodological research study.

We started by developing a list of sentences (items) around the central concept (debriefing) based on the researchers' experience and the literature review on the topic. The following authors were central to this literature review: Jeffries (2007); Kardong-Edgren, Starkweather, and Ward (2008); Campbell and Daley

(2009), Baldwin (2007); and Heukelom et al. (2010).
This process resulted in a 50-item list (13 inversely formulated items). The items were organised into a single-answer format in a 5-point Likert scale where students had to rate their level of agreement: *totally disagree* (1); *disagree* (2); *neither agree nor disagree* (3); *agree* (4); and *totally agree* (5).
Based on the essential criteria of clarity, simple understanding and thematic representativeness, the items were organised in a table entitled *Simulation Debriefing Assessment Scale* (*Escala de Avaliação do Debriefing associado à Simulação* - EADaS).
The scale was preceded by a set of instructions, with the following content: "The following table includes several statements regarding the discussion that we had after the simulated practice (Debriefing). Please indicate how you feel regarding each statement. There are no right or wrong answers. Please answer based on your true opinion".
At the beginning of the table, the expression "*At the end of the scenario, the debriefing contributed to…*" was also included, which should precede each item.

Content validity

The list of items was assessed by a panel of experts, who sought to identify possible gaps in the clarity of the statements, their representativeness for the construct, and the content validity of each item, thus ensuring the construct validity.
The panel of experts was composed of four researchers of the Health Sciences Research Unit: Nursing (UICISA: E) of the Nursing School of Coimbra (ESEnfC). Given the simplicity and clarity of the instrument as a whole, no changes were necessary.

Sample

The scale was applied to a random sample of 209 4th-year students of the Bachelor Degree in Nursing of the ESEnfC, in April 2012.
The questionnaire was applied after nine hours of laboratory practice using simulation, at the end of the Course Unit of Emergency Nursing.
Participants who met the following criteria were included in the study (eligibility): attending the Emergency Nursing Course Unit; having been present at the classes of the Emergency Nursing Course Unit where the scenarios and respective debriefings were conducted; and agreeing to participate in the study.
A total of 209 students answered the questionnaire, of whom 81.3% were women and 18.7% were men, with a mean age of 22 years.

Simulated clinical experiences

Practical classes took place at the Simulation Centre, using the resolution of complete scenarios in realistic environments, with increasing difficulty, as a strategy. For the resolution of scenarios, students had realistic material and equipment. Medium-fidelity (Advanced Life Support Manikins Megacod® - adult, with VitalSim®, of Laerdal®) and high-fidelity manikins (iStan® - adult of Meti®) were used.
After the resolution of each scenario, a structured debriefing was always conducted by the second researcher, following a common structure: (1) general appraisal of the simulated clinical experience; (2) general review of the correctly developed interventions and positive reinforcement; (3) general review of the incorrectly developed (or undeveloped) interventions and respective justification; and (4) key points concerning the simulated clinical experience. Each scenario was developed for approximately 15 minutes, followed by another 15 minutes for debriefing.

Formal and ethical aspects

The study is part of the *Simulation in Nursing Education* project, which belongs to the Health Sciences Research Unit (UICISA: E). The project was authorised by the President of the ESEnfC and consented (P01-09/2010) by the Ethics Committee of this Research Unit.
Participation was voluntary, anonymous and confidential. Students were ensured that there was no compensation for participating or not in the study, and that there was no association with the assessment of the Course Unit.
During the whole process, the participants' rights to privacy, anonymity, confidentiality and freedom were taken into account and ensured.

Results

We started by analysing the scale, in terms of its overall reliability, through the item-total correlation, its impact on the Alpha value and the descriptive summary measures.

A high item-total correlation was found in almost all items, which demonstrates the proper functioning of the scale as a whole and contributes to the high Alpha value (0.934). The lowest item-total correlation values were 0.447 and 0.505 for items 41 and 43, respectively.

The values obtained so far allowed us to move forward to analyse the structure of the EADaS. A factor analysis using Varimax orthogonal rotation with Kaiser normalisation was then performed.

The Kaiser-Meyer-Olkin (KMO) index was 0.887, which means that there was good adequacy of the analysed sample. The Bartlett's test of sphericity was $\chi 2 = 5203.963$; $p = .000$, which allowed us to proceed with the factor analysis.

In a first attempt, after defining the extraction of eigenvalues >1, a 5-factor solution was obtained, which explained 50.391% of the variance. However, looking at this solution, we found no rational significance besides the fact that items loaded in two factors and others had very low loadings.

The Scree Plot was then analysed and, based on it, a 3-factor solution was tested.

When choosing the final factor solution and the items that should be included, we tried to comply with the following criteria: (1) convergent validity of the item with the factor - each item should load with the factor $\geq .30$, with the factors with commonality $\geq .50$ being considered; (2) discriminant validity of the item with the factor - the item should only be related to the hypothetical factor, and a difference $\geq .30$ should be obtained between each factor; and (3) the final solution should explain at least 40% of the total variance.

These three factors (dimensions), with eigenvalues ≥ 1, fully explained 43.99% of the total variance.

After the analysis and component extraction were completed, we aimed at identifying which items would be included in each factor. Following the pre-established criteria and recommendations (Loewenthal, 2001) and taking into account the rational significance and consistency, items 1, 6, 13, 21, 23, 40 and 42 were deleted as they loaded with values lower than 0.5. Items 3, 14, 19, 22, 27, 30, 31, 44 and 46 were also deleted, considering that the difference between factor loadings was less than 0.3. Although items 29, 35 and 38 also did not comply with the minimum difference principle of 0.3 between factors, they were kept due to their importance to the theoretical construct.

At the end, the factors were divided as follows:

1) Factor 1 explained 16.802% of the variance and items 25, 26, 29, 33, 34, 35, 37, 38, 39, 41, 45, 48 and 49 loaded on factor 1. These items were all related to the psychological and social aspects inherent in the simulation, which is why we designated this factor as *psychosocial dimension;*

2) Factor 2 explained 14.46% of the variance and items 2, 5, 7, 9, 10, 11, 15, 17 and 18 loaded on factor 2. These items were mainly related to the consolidation of knowledge through discussion, which is why we designated this factor as *cognitive dimension*;

3) Factor 3 explained 12.73% of the variance and items 4, 8, 12, 16, 20, 24, 28, 32, 36, 43, 47 and 50 loaded on factor 3. These items were related to feelings or affections. This dimension included the inversely formulated items and it was designated as *affective dimension*.

As it may be observed, this division obtained by factor analysis suggests a construct with rational significance (Table 1). All factors had high factor loadings. The factor analysis was repeated, now only with 34 items, which confirmed the division presented and the construct validity of the scale.

Table 1

Item-factor loading matrix for the 3-factor solution using Varimax orthogonal rotation with Kaiser normalisation (N = 209)

Itens		Fatores		
		1	2	3
1	Refletir sobre o cenário	,194	,357	,101
2	Estruturar o meu pensamento	,226	,566	,115
3	Consolidar os meus conhecimentos	,325	,519	,003
4	Me envergonhar frente aos colegas pelos meus erros	,037	,098	,664
5	Aprender mais	,234	,653	-,002
6	Melhor interagir no e com o grupo	,417	,366	,114
7	Me focar nos aspetos importantes da atuação	,271	,583	-,077
8	Me deixar muito ansioso/stressado	-,029	,000	,675
9	Refletir sobre as minhas competências	,131	,709	,090
10	Identificar prioridades na atuação	,150	,670	,055
11	Melhor identificar os recursos a utilizar na atuação	,191	,657	-,040
12	Me humilhar frente aos outros	,053	,103	,754
13	Avaliar as minhas próprias capacidades	,317	,498	-,081
14	Identificar as minhas limitações de forma construtiva	,387	,517	,070
15	Aprofundar conhecimentos específicos relacionados com a atuação	,305	,647	,153
16	Me deixar em pânico só de pensar em ter de atuar de novo numa situação semelhante	,087	,049	,789
17	Identificar aspetos que devo melhorar em atuações futuras	,254	,611	,117
18	Desenvolver competências para a tomada de decisões acertadas	,224	,562	,083
19	Trocar experiências com os colegas	,329	,525	,095
20	Criar conflitos no grupo	-,064	,095	,585
21	Respeitar mais as opiniões dos outros	,361	,254	-,059
22	Reforçar o espírito de colaboração no grupo	,536	,419	,053
23	Desenvolver a capacidade de autocrítica	,348	,492	,185
24	Não querer participar em mais nenhuma simulação	-,037	,006	,731
25	Aumentar a minha autoconfiança	,626	,229	,137
26	Desenvolver competências de liderança	,607	,250	-,093
27	Promover o meu autoconhecimento	,555	,455	-,028
28	Eu me sentir incompreendido	,028	,127	,680
29	Aumentar o potencial de trabalho em equipa	,595	,353	,150
30	Melhorar a minha capacidade de adaptação a situações novas	,587	,398	,065
31	Permitir a aproximação com a realidade	,525	,386	,046
32	Eu me sentir desrespeitado	,078	,081	,741
33	Eu me sentir realizado	,637	,178	,013
34	Reforçar a minha iniciativa em situações futuras	,674	,264	,132
35	Desenvolver a relação de ajuda	,595	,364	,012
36	Eu sentir que foi uma perda de tempo	,109	,130	,695
37	Reforçar a minha autonomia para atuar como futuro enfermeiro	,666	,297	-,007
38	Identificar dificuldades na minha atuação	,554	,311	,157
39	Promover a autoconsciência (conhecer as próprias emoções)	,564	,237	,027
40	Eu sentir que nunca serei capaz de fazer as coisas bem numa situação semelhante	,067	-,024	,452
41	Eu me sentir no centro do processo formativo	,603	-,076	-,024
42	Relacionar os conhecimentos teóricos e práticos	,486	,323	,187
43	Eu ter medo de atuar no futuro em situações semelhantes	,063	-,040	,588
44	Refletir sobre aspetos estruturantes da minha atuação como futuro enfermeiro	,594	,395	,134
45	Melhorar a minha capacidade de gerir emoções	,594	,293	,010
46	Me estimular a procurar saber mais sobre os assuntos em causa	,534	,384	-,023
47	Bloquear o meu raciocínio	,038	,005	,787
48	Eu sentir orgulho por ser capaz de executar muitas intervenções corretamente	,695	,092	,050
49	Eu sentir que o professor tem interesse genuíno no meu desenvolvimento profissional	,517	,199	,097
50	Baralhar as minhas ideias a respeito da atuação	,089	,021	,640

Reliability

Cronbach's Alpha values were recalculated, and very good values for both the total (0.899) and each specific dimension were obtained, in particular 0.884 for the psychosocial dimension (13 items); 0.859 for the cognitive dimension (9 items); and 0.889 for the affective dimension (12 items). All items correlated with the total score above 0.45.

Results

For each dimension and the total of the scale, the scores of the respective items were added up, and the mean score was calculated.

Tables 2, 3 and 4 summarise the descriptive statistics of each dimension of the EADaS. Significant differences were found in the measures of central tendency and dispersion of the various items.

In the *psychosocial value* dimension (Table 2), items 29, 37 and 38 showed the highest mean scores and lowest standard deviations, while items 26, 33 and 41 showed the lowest mean scores and the highest standard deviations.

The minimum assessment of 1 (*totally disagree*) was obtained only in three items, while the remaining items scored between >1 and 5 (*totally agree*).

Table 2

Descriptive statistics of the items in the psychosocial value dimension (n = 209)

Statistics/items		25	26	29	33	34	35	37	38	39	41	45	48	49
Mean		4.00	3.82	4.55	3.97	4.31	4.31	4.51	4.57	4.34	3.77	4.07	4.01	4.16
Median		4.00	4.00	5.00	4.00	4.00	4.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00
Mode		4.00	4.00	5.00	4.00	4.00	4.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00
Standard deviation		.73	.83	.53	.71	.60	.64	.58	.54	.61	.91	.77	.73	.74
Minimum		2.00	1.00	3.00	3.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Percentiles	25	4.00	3.00	4.00	3.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
	50	4.00	4.00	5.00	4.00	4.00	4.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00
	75	5.00	4.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00	4.00	5.00	4.50	5.00

In the *affective value* dimension (Table 3), all items showed mean scores higher than 4 points. Items 24, 32 and 36 showed the highest mean scores and lowest standard deviations, unlike items 8, 16 and 43, where the opposite was true.

In this dimension, the minimum assessment of 1 (*totally disagree*) was obtained in four items, while the remaining items scored between >1 and 5 (totally agree).

Table 3

Descriptive statistics of the items in the affective value dimension (N = 209)

Statistics/items		4	8	12	16	20	24	28	32	36	43	47	50
Mean		4.61	4.04	4.78	4.53	4.73	4,83	4.73	4.81	4.89	4.48	4.55	4.55
Median		5.00	4.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Mode		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Standard deviation		.72	1.06	.54	.73	.67	.46	.56	.50	.35	.89	.71	.84
Minimum		2.00	1.00	2.00	2.00	1.00	2.00	2.00	2.00	3.00	1.00	2.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Percentiles	25	4.00	3.50	5.00	4.00	5.00	5.00	5.00	5.00	5.00	4.00	4.00	4.00
	50	5.00	4.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	75	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

In the *cognitive value* dimension (Table 4), all items showed mean scores higher than 4 points and more than half of the answers had the highest score (*totally agree*). Item 9 showed the lowest mean score and the highest standard deviation, while items 2, 10 and 17 showed the highest mean scores and the lowest standard deviations. The minimum assessment of 1 (*totally disagree*) was obtained only in one item, while the remaining items scored between >1 and 5 (totally agree).

Table 4
Descriptive statistics of the items in the cognitive value dimension (N = 209)

Statistics/items		2	5	7	9	10	11	15	17	18
Mean		4.70	4.63	4.57	4.40	4.66	4.51	4.54	4.66	4.56
Median		5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00
Mode		5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00
Standard deviation		.46	.49	.54	.59	.51	.56	.52	.49	.57
Minimum		3.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Percentiles	25	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	50	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00
	75	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Table 5 shows some descriptive statistics relating to the total EADaS and each of its dimensions. The mean of the items for the *psychosocial value* dimension was 4.27 points, with a standard deviation of 0.41 points, while the *affective value* dimension showed a slightly higher mean (4.62 points) and a standard deviation of 0.46 points. The *cognitive value* dimension showed a mean of 4.56 points, with a standard deviation of 0.34 points. Overall, the mean was 4.48 points and the standard deviation was 0.30 points.

Table 5
Descriptive Statistics of the EADaS (N = 209)

Statistics/EADaS		*Psychosocial value dimension*	*Affective value dimension*	*Cognitive value dimension*	Total
Mean		4.27	4.62	4.56	4.48
Median		4.27	4.76	4.60	4.51
Mode		3.95	5.00	5.00	5.00
Standard deviation		.41	.46	.34	.30
Variance		.17	.21	.12	.09
Minimum		2.82	2.69	3.80	3.37
Maximum		5.00	5.00	5.00	5.00
Percentiles	25	3.95	4.44	4.26	4.28
	50	4.27	4.76	4.60	4.51
	75	4.59	5.00	4.90	4.72

The distribution of the EADaS overall scores and the scores of each dimension were analysed. To this end, the Kolmogorov-Smirnov test with Lilliefors correction was performed. The scores obtained indicated that the distribution was not normal for both the cognitive and the affective dimensions ($p < .05$) and, therefore, the subsequent tests used non-parametric measures.

The Mann-Whitney U-test was performed to assess whether the EADaS was distinguishing between the scores assigned by both men and women to the debriefing. It was concluded that the slight differences observed were not statistically significant. Then, significance testing of the Spearman correlation was conducted (Table 6) to search for relationships between the different dimensions and the overall

EADaS. Each dimension was strongly correlated with the total, and these correlations were statistically significant. There was a strong correlation between the *psychosocial value* and *cognitive value* dimensions and a weak correlation between the *affective value* and the *cognitive value dimensions,* both of them being statistically significant. The correlation between the *affective value* and the *psychosocial value* dimensions was weak and non-significant.

Table 6
Results of the Spearman Correlation Test between the dimensions and the overall EADaS (N = 209)

		Psychosocial value dimension	*Cognitive value dimension*	*Affective value dimension*
Cognitive dimension	r_s	.757**		
	Sig. (2-tailed)	.000		
Affective dimension	r_s	.135	.167*	
	Sig. (2-tailed)	.057	.017	
Global	r_s	.814**	.805**	.638**
	Sig. (2-tailed)	.000	.000	.000

* Significant correlation at $p < 0.05$; ** Significant correlation at $p < 0.01$

Discussion

Results should be assessed taking into account some of the study limitations and, therefore, they should be interpreted and generalised with caution. The specificity of the sample was one of the limitations. If, on the one hand, the lack of debriefing assessment tools helped to justify the relevance of building and validating the scale, on the other hand, it made it impossible to analyse its concurrent validity.

However, the development and validation process of the EADaS seems to be a strong aspect that will contribute to the scientific validation of these results, which are indicators of the potential for the use of the scale in future studies.

Cronbach's Alpha of the final 34-item scale was 0.899, which shows good internal consistency. The factor analysis, followed by Varimax rotation, extracted three dimensions: *psychosocial value*, *cognitive* and *affective.*

Simulation has been shown to improve students' skill performance, alter attitudes, and enhance knowledge (Jeffries & Rizzolo, 2006; Lasater, 2007). The debriefing is an essential element in learning through simulation, providing active learning that allows students to experience clinical situations and use their cognitive, affective and psychomotor skills (Childs & Sepples, 2006). This is in line with our results.

With the answers ranging from a minimum assessment of 1 to a maximum assessment of 5, most students considered that the debriefing had helped them structure their thoughts (99.5%); identify priorities in the professional practice (99.1%); identify aspects that they should improve in future performances (99.1%); identify difficulties in the professional practice (97.6%); increase the potential for teamwork (98.1%); and strengthen their autonomy to act as future nurses (96.6%). This is in line with Hodges (2006) and Dieckmann, Manser, Wehner, and Marcus (2007). These authors argue that the debriefing is important to maximise learning and facilitate individual and systematic changes. On the other hand, in our study, students reported that the debriefing was not a waste of time but a moment when they felt respected, which is in line with Lasater (2007) and Jeffries and Rizzolo (2006). It was a moment in which active participation and the opportunity to put the assessment, observation and skills into practice to solve problems, followed by reflection, lead to an increase in the students' self-confidence.

According to Rodrigues and Baía (2012), "The role of the modern educator implies an increasing development of skills to act as a pedagogical mediator, thus guiding the action based on mutual and fair commitments for both parts" (p. 201). Educators are required to be strong and ethical to help their trainees become authors of their own paths, make decisions, solve problems, deal with doubt and risk,

and especially be proactive in the search for the best development and learning experiences.

The debriefing provides students with the opportunity to reflect on their experiential learning exercises and hypothesise how they might perform differently in a similar situation. On the other hand, according to Overstreet (2009), the debriefing also offers students a reality check, a way to see themselves through the eyes of the teacher or their peers. Our students share these ideas, given that 98.1% mentioned having developed skills for informed decision-making; 76.6% stated that they had increased self-confidence; and 84.2% felt that the teacher had a genuine interest in their professional development.

In general terms, several authors have demonstrated the beneficial effects of the debriefing, such as Jeffries, 2007; Kardong-Edgren et al., 2008; Campbell and Daley, 2009; Overstreet, 2009; Dreifuerst, 2009; among others. This study confirms these findings and identifies some specific areas in which the positive impact of the debriefing and simulated practice on the student is confirmed.

As previously analysed, the students appreciated the debriefing, with the *affective value* dimension showing the highest mean score in relation to the other dimensions, although it also showed the lowest correlation, even if this was statistically significant. Thus, it may be said that the debriefing represents a strategy that provides students with an affective relationship which is perceived by them as a form of protection.

Conclusion

The debriefing is an essential element of teaching through simulation. It follows a structured reflection method as a way to significantly consolidate the students' knowledge, by observing what was done and looking for the reasons and mental mechanisms associated with the decision. This is a central process to nurses' training as these professionals are not meant to simply do things, but to know how, when and why they should do them, as well as the options available to do them differently, whenever necessary.

As no instrument was found in the literature that would allow us to assess the impact of the students' simulation-related debriefing and considering that this would be a key aspect, we aimed at accomplishing such goal, i.e. to design and validate an instrument to assess the impact of simulation debriefing on the students.

Despite the limitations, it was possible to develop a scale to assess the impact of simulation debriefing on the students. This scale showed good psychometric properties, thus anticipating its potential for use in future scientific research.

The final result was a 34-item scale divided into three dimensions: the *psychosocial value* dimension, the *cognitive value* dimension and the *affective value* dimension. These three dimensions were obtained through factor analysis. Overall, the scale showed very good psychometric properties with Alpha values above 0.80 both in the total and in each dimension.

This study confirms that the scale may be a useful tool for assessing the value assigned to simulation debriefing by Nursing students. The authors believe that its value shall be strengthened in future studies and contribute to improve nurses' practices and the provision of high quality Nursing care.

Thus, further studies on debriefing should be carried out in Portugal. These studies should apply this scale, and their results should be disseminated to teachers and other professionals so as to become an added value for the joint definition of pedagogical strategies to be used in the course units.

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