

# Scale of conflict in health care decision-making: an instrument adapted and validated for the portuguese language

ESCALA DE CONFLITO EM TOMADAS DE DECISÃO EM SAÚDE: INSTRUMENTO ADAPTADO E VALIDADO PARA LÍNGUA PORTUGUESA

ESCALA DE CONFLICTO EN LAS TOMAS DE DECISIONES EN SALUD: INSTRUMENTO ADAPTADO Y VALIDADO PARA EL IDIOMA PORTUGUÉS

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## ABSTRACT

The different options available to patients in the health environment now are implicated in increasingly difficult processes of decision-making, and may trigger conflict about them. This study had as its purpose, to develop an instrument that enabled us to know about this variable. Therefore, we decided to effect a transcultural adaptation and evaluation of psychometric properties of the Portuguese version of the *Decisional Conflict Scale*, which seeks information about decision-making and the factors that influence the choices made. The sample consisted of 521 nursing students, with a focus on decision-making regarding the flu syndrome. The results obtained on the reliability tests showed good internal consistency for all items (Cronbach  $\alpha=0.94$ ). The psychometric study allowed us to affirm that the Portuguese version of the *Decisional Conflict Scale*, which we call *Scale of Conflicts in Decision-Making in Health* (ECTDS), was a reliable and valid instrument.

## DESCRIPTORS

Decision theory  
Patients  
Nursing care  
Cross-cultural comparison  
Psychometrics

## RESUMO

As diferentes opções disponibilizadas aos doentes no âmbito da saúde actualmente implicam em processos de tomada de decisão cada vez mais difíceis podendo desencadear conflito no decorrer da mesma. Foi nosso propósito, com este estudo, dispor de um instrumento que nos possibilite conhecer esta variável. Assim, propusemo-nos efectuar a adaptação transcultural e avaliar as propriedades psicométricas da versão portuguesa da *Decisional Conflict Scale*, que visa obter informações sobre a tomada de decisão e os factores que influenciam a escolha tomada. A amostra constituída por 521 estudantes de Enfermagem, teve como foco a tomada de decisão na síndrome gripal. Os resultados obtidos nos testes de confiabilidade revelam boa consistência interna para o total dos itens ( $\alpha$  Cronbach=0,94). O estudo psicométrico permitte-nos afirmar que a versão em Português da *Decisional Conflict Scale*, que denominamos *Escala de Conflitos de Tomadas de Decisão em Saúde* (ECTDS), é um instrumento fidedigno e válido.

## DESCRITORES

Teoria da decisão  
Pacientes  
Cuidados de enfermagem  
Comparação transcultural  
Psicometria

## RESUMEN

Las diferentes opciones disponibles para el paciente en el ámbito de la salud implican actualmente procesos de toma de decisiones cada vez más difíciles, pudiéndose desencadenar conflictos durante ellos. Objetivamos disponer de un instrumento que nos posibilitara conocer esta variable. Consecuentemente, nos propusimos efectuar la adaptación transcultural y evaluar las propiedades psicométricas de la versión portuguesa de la *Decisional Conflict Scale*, que apunta a obtener informaciones sobre toma de decisiones y factores que influyen en la elección tomada. La muestra, constituida por 521 estudiantes de Enfermería, se enfocó en la toma de decisiones en el síndrome gripal. Los resultados obtenidos en los tests de confiabilidad expresan buena consistencia interna para todos los ítems ( $\alpha$  Cronbach=0,94). El estudio psicométrico nos permite afirmar que la versión en portugués de la *Decisional Conflict Scale*, que denominamos *Escala de Conflictos de Toma de Decisiones en Salud* (ECTDS), es un instrumento fidedigno y válido.

## DESCRIPTORES

Teoría de las decisiones  
Pacientes  
Atención de enfermería  
Comparación transcultural  
Psicometría

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## INTRODUCTION

Decisions, big or small, are present in our daily lives, as well as in different contexts. When we have to, we choose between alternative courses of action or inaction. In health, the decisions usually involve a certain number of diagnostic and therapeutic possibilities, which trigger uncertain responses. Decisional conflict is defined<sup>(1-2)</sup> as a state of uncertainty about the course of action. The level of uncertainty is greater when confronted with decisions that involve risk or uncertainty in their results, when options for choices are of high risk, involving potential significant gains and losses, when there is a change in values, or when a feeling of anticipated guilt about positive aspects of the rejected options is probable<sup>(1-2)</sup>. Some studies<sup>(3-5)</sup> of the many published since the 1960s, refer to the knowledge of the risks and consequences of each option of choice as an essential condition for competent decision-making. It is believed that the information given through assertive and open communication about the risks and consequences of options of choice can stimulate a more proactive role on the part of patients in decision-making and minimize conflicts, even given the possibility of uncertain outcomes<sup>(6-7)</sup>.

The *Decisional Conflict Scale* (DCS)<sup>(1-2)</sup> was developed to obtain information about the decisions made by the patient and the factors that influenced the choice made, that was perceived as effective. The usefulness of this scale (DCS) was in the identification of factors that contributed and could be modified with nursing interventions for safer and more satisfactory decision-making by the patient.

This information is useful, not only to assess the impact of the decision on the patient and family, but to support the decision made, and also to develop and adapt interventions that are consistent with the particular needs of these patients, enabling them to make a more safe and satisfactory decision.

This study was intended to validate the scale, *Decisional Conflict Scale* (DCS), and to identify which decisions were made by nursing students about the flu syndrome and whether these decisions caused conflict.

We considered it important to understand how these future professionals perceived decision-making and whether sociodemographic factors influenced it, since they will develop interventions designed to help and support people in making specific choices, giving them information to support decision-making. This understanding is also important to delineate strategies that are most adequate for the effective support of decision-making in health and in the teaching/learning process, since these students are already in the formative process. Therefore,

we believe that supportive interventions in decision-making can support the person who is doubtful to make the decision that will best meet his needs, increasing the probability of the decisions being based on appropriate knowledge, with realistic expectations, and according to his personal values<sup>(8-9)</sup>.

We opted for an apparently *simple* health decision that was something that was thought about almost daily, that did not bring dilemmas in its options, since the definition<sup>(1-2)</sup> of an optimal decision was regarded as an informed decision, which was in accord with personal values and that when the individual adopted it, he expressed satisfaction with it.

We performed a cultural adaptation and validation of the instrument *Decisional Conflict Scale* (DCS) for the Portuguese language, and understanding of decision-making about the flu syndrome by baccalaureate and master's degree nursing students from a school of nursing in Porto.

## METHOD

The usefulness of this scale (DCS) was in the identification of factors that contributed and could be modified with nursing interventions for safer and more satisfactory decision-making by the patient.

The process of cultural adaptation and validation of the instrument followed the guidelines outlined in the literature, guiding the implementation strategy for the proposed operationalization<sup>(10)</sup>; as presented in Figure 1.

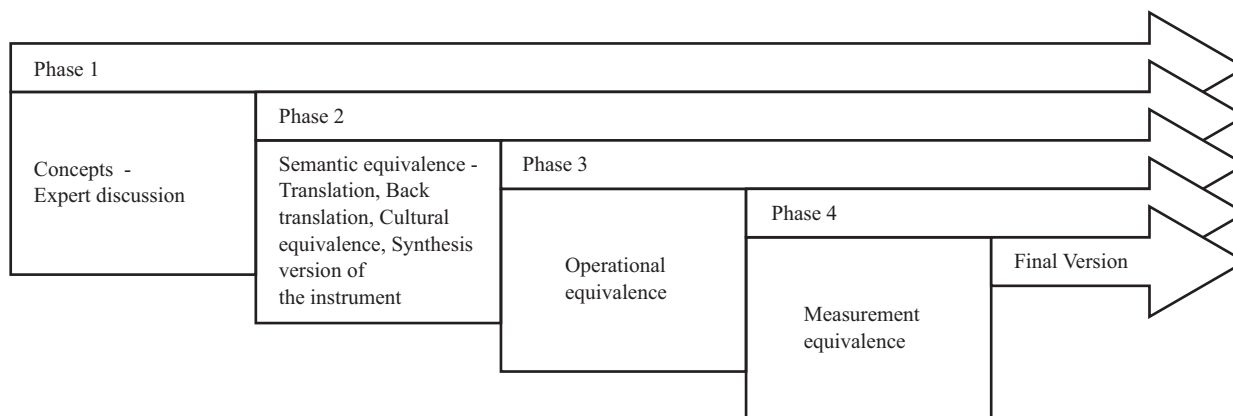
### Instrument

The data collection instrument included a set of questions to obtain sociodemographic data from students and the scale, *Decisional Conflict Scale* (DCS)<sup>(1)</sup>, composed of 16 self-completed items that gave shape to each statement. The DCS was designed to assess decisional conflicts of patients in health care making specific decisions at a given moment. Just as with the original scale, a scale of concordance of a Likert-type structure was used (5 options), ranging from completely agree (0) to completely disagree (4), and that measured the following dimensions:

- 1) The uncertainty: constructed with items 1, 2 and 3, which assessed what the decision maker considered right or clear about what to do in light of the particular health decision;
- 2) Factors contributing to the uncertainty: evaluating what could be modified by decision support interventions, classified into three subcomponents:
  1. Information: about the options, risks and benefits (items 4, 5, 6),
  2. Clarity about the personal value of the benefits and risks (items 7, 8, 9) and

3. Support in the decision to be made (items 10, 11, 12), and
- 3) Decision effectively perceived: constructed with items 13, 14, 15, and 16. It evaluates the perception that the decision was informed, consistent with personal values, and with which they were satisfied.

The total score of the scale was obtained by adding the 16 items, dividing them by 16 and multiplying by 25. The scores obtained on the scale could range between 0 and 100, considering that the higher the obtained score, the higher the level of conflict faced with the decision made.



**Figure 1** – Transcultural adaptation of the ECTDS

### Procedures

A formal request for authorization was provided on June 22, 2011, to the President of the *Escola Superior de Enfermagem*, for access to students from that school. After this, a favorable ethical opinion – N.08/CEUP/2011, of the Commission on Ethics of the *Universidade do Porto* was obtained, in the context of a doctoral study. Thereafter, investigators contacted the coordinators and/or teachers of different undergraduate and master's courses, with the objective of soliciting their participation and collaboration in the study. Students were informed about the objectives, study purpose and were given the right to refuse to participate. The selection process of the sample was non-probabilistic, for convenience. Data collection occurred between June 28 and July 21 of 2011. No authorization was requested from the scale's author, because consent was given in the *User Manual - Decisional Conflict Scale* to anyone who wishes to use it, so long as it is referenced<sup>(1)</sup>.

The instrument was administered with the collaboration of the professors to the nursing students in the classroom, after the objectives of the study were explained, clarifying that the questionnaires were not identified, that anonymity was guaranteed, and that their participation was voluntary, with no negative outcome resulting from their non-participation.

For statistical processing of the data, the IBM program, Statistical Package for the Social Sciences (SPSS) version 19, was used.

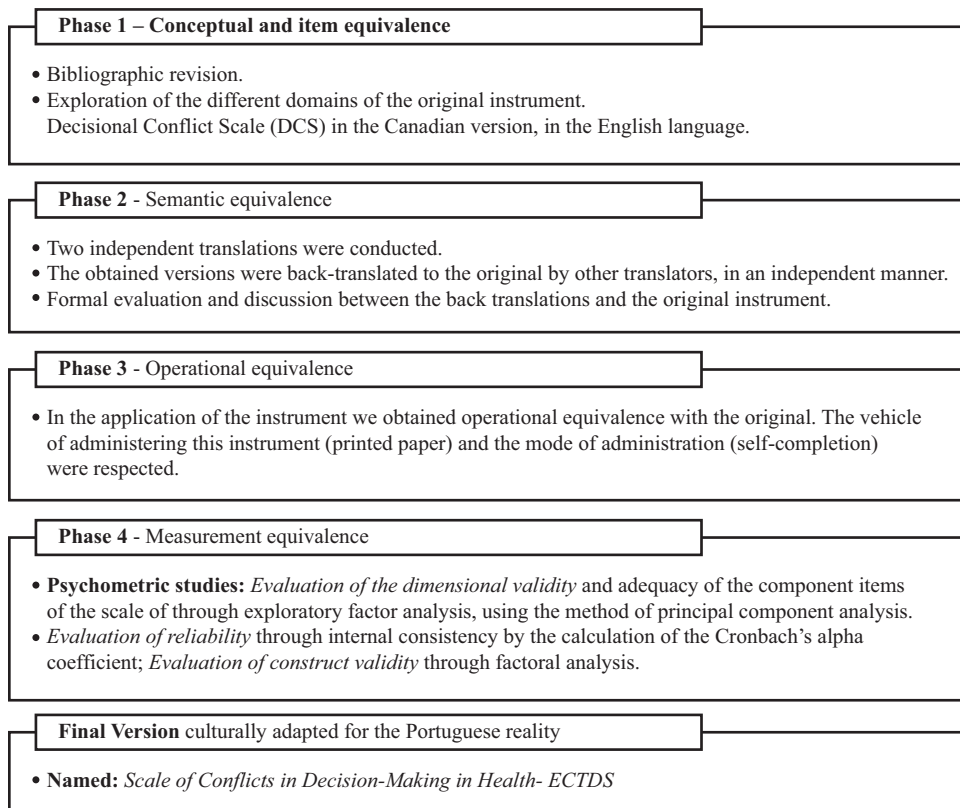
### Participants

A non-probability convenience sample was used, considering the requisites necessary for the statistical analysis related to scale validation. Thus, 521 (42.3%) students participated, out of a total population of 1233, the majority of whom were female (87.7%; n=457), with ages between 18 and 53 years (M=22.5; SD=5.37). Of the participants, 426 (81.8%) were attending the Bachelor of Nursing (BSN) and 95 (18.2%) the master's degree program. The BSN students were distributed as: first year (29.1%, n=124), second year (23.9%, n=102), third year (33.6%, n=143) and fourth year (13.4%, n=57), and of these, 226 (53.1%) were in theory and 200 (46.9%) were in clinical courses. The master's students were distributed in community (17.9%), psychiatry (15.8%), medical-surgical (12.6%), maternal health and obstetrics (28.4%), and rehabilitation (25.3%) areas.

Of the BSN students, 28 (6.6%) were student workers while only three (3.2%) of the master's students were not working. Of the respondents, 135 (26%) were displaced from their family homes; of these 119 (28%) were BSN students and 16 (16.8%) were master's students. As for experience of disease, 240 (56.6%) BSN students and 55 (57.9%) master's students reported ever having this experience. Of these, 223 (53.2%) BSN students and 49 (52.1%) master's students had to undergo treatment for their disease condition, and 156 (37.2%) of the BSN students, and 27 (29%) of the master's students had to be hospitalized.

### Development of the Portuguese version

The cultural adaptation and validation of the scale were performed as shown in the following figure:



**Figure 2** – Process of cultural adaptation and validation – ECTDS

## RESULTS

In addition to the descriptive analysis, the analysis of the construct validity was performed through factor analysis, and analysis of internal consistency, by calculating the Cronbach's alpha coefficient. For the results, a maximum of 5% probability of error was considered. The method used in the analysis of factors was that of Principal Components, with orthogonal rotation of the axes via Varimax, where the objective was to find a rotation of factors that maximized the variance of the weight matrix, to simplify the interpretation of the factors. Initially, to determine the number of factors, the eigenvalue were observed since this represents the portion of total variance of the variables explained by each of the factors, in other words, the larger the eigenvalue, the more important the factor. The Kaiser criterion suggests considering only the eigenvalues greater than one, demonstrating that these values would be statistically significant. Following this criterion we found the existence of three factors greater than one, which together explained 69% of the variance in the model, as can be seen in Table 1.

The index of sampling adequacy of KMO (measure of homogeneity of the variables) was calculated at 0.935 and showed that the data matrix was adequate for factor analysis<sup>(11)</sup>. Ten times the number of variables was considered as a minimum of valid responses<sup>(11)</sup>. With respect to commonality, we found that all of the variables had values

equal to or above 0.5, indicating that the variance of these variables was reproduced by common factors. We selected items with factor loading greater than 0.3. The factorial solution obtained is reproduced in Table 2

After analyzing the results obtained, it was found that these dimensions differed slightly from the original version. Given the consideration of theoretical content inherent to each item, the factor load and the internal consistency assessment of each factor/dimension, we made some alterations in the composition of the Portuguese ECTDS scale. The items that in the original scale comprised the dimension *Uncertainty* saturated our factor 1, associated to some items of the dimension *factors that contribute to uncertainty* that composed the subcomponent *information* and item 10 of the subcomponent *Support for making the decision*. The items that in the original scale comprised the dimension, *effectively perceived decision* associated with items 11 and 12 of subcomponent *Support for making of the decision* now constitute our factor 2. The items that comprised the subcomponent *Clarity about the personal value of the benefits and risks* saturated all of our factors. The items were reframed while maintaining the composition of the scale in three dimensions. We verified that the Cronbach  $\alpha=0.94$  of the transformed scale presented very good values, superior to the original scale (in English, Cronbach  $\alpha=0.86$ ; in Spanish, Cronbach  $\alpha=0.72$ )<sup>(1)</sup>, which meant

that it contributed to the internal consistency of each factor, maintaining the three factors, with the items re-framed. The discriminant validity was obtained through the Pearson correlation coefficient ( $r$ ), between the 16 items that composed the global scale and the different

factors obtained by the principal component analysis. The internal consistency of each of the dimensions, as well as of the total scale, was calculated. The calculation of accuracy of the various dimensions of the transformed scale can be verified in Table 3.

**Table 1** – Percentage of total variance explained by the three primary factors – Porto 2011

Components	Initial values			Extraction of loads			Rotation of loads		
	Total	% Variance	% Cumulative	Total	% Variance	% Cumulative	Total	% Variance	% Cumulative
1	8.322	52.011	52.011	8.322	52.011	52.011	4.815	30.091	30.091
2	1.613	10.079	62.090	1.613	10.079	62.090	3.782	23.634	53.725
3	1.137	7.107	69.198	1.137	7.107	69.198	2.476	15.473	69.198
4	.688	4.299	73.497						
5	.581	3.630	77.127						
6	.576	3.600	80.727						
7	.518	3.237	83.964						
8	.468	2.923	86.887						
9	.366	2.286	89.173						
10	.348	2.176	91.348						
11	.300	1.872	93.220						
12	.278	1.739	94.959						
13	.254	1.586	96.545						
14	.211	1.319	97.864						
15	.174	1.088	98.952						
16	.168	1.048	100.000						

Note: Extraction Method - Analysis of principal components

**Table 2** – Commonality and principal components of the scale of ECTDS – Porto, 2011

Variables	Commonality	Components		
		1	2	3
Item 3 Decision conflict	.801	.862		
Item 2 Decision conflict	.744	.837		
Item 5 Decision conflict	.753	.808		
Item 4 Decision conflict	.751	.788	.329	
Item 6 Decision conflict	.755	.775	.324	
Item 1 Decision conflict	.558	.644		.355
Item 10 Decision conflict	.707	.536	.435	.480
Item 16 Decision conflict	.793		.849	
Item 15 Decision conflict	.762		.839	
Item 14 Decision conflict	.716		.793	
Item 13 Decision conflict	.636	.439	.619	
Item 12 Decision conflict	.520	.380	.586	
Item 11 Decision conflict	.636	.430	.543	.396
Item 8 Decision conflict	.614			.759
Item 7 Decision conflict	.630			.743
Item 9 Decision conflict	.695			.709

Note: Orthogonal rotation by the Varimax method, with Kaiser normalization type; Items with factor loading > 0.3; Rotation converged in five interactions

The internal consistency of the total scale was very good (Cronbach's  $\alpha=0.94$ ), being higher than the original scale, which confirmed the reliability of the Portuguese version. The items correlated with the results of the dimensions to which they belonged and to the total scale, with a significance of  $p=0.01$ . In the dimensions *Knowledge and value attributed to particular options in the decision-making* and *Effective decision* showed high values. In the dimension, *Support for the decision*, the value of internal consistency was reasonable, considering that this subscale presented a reduced number of items.

#### **Decision-making of nursing students about the flu syndrome**

Of the 426 (81.8 %) BSN students; 28 (6.6%) reported having a therapeutic measure in the *flu syndrome* prevention, having an annual vaccination. Measures of *respiratory etiquette* were an option for 61 (14.3%) of the students. The symptomatological control of the flu syndrome was the option for the majority of these students, 323 (75.8%). Fourteen students were unsure about their choices made regarding the *Flu syndrome* (3.3%). Distributing these students, 5 (4%) were first year, three (2.9%) were second year, two (1.4%) were third year, and four (7%) were in the fourth year.



**Table 3** – Dimensions and Internal Consistency of the ECTDS - Porto 2011

Dimensions	Items	Cronbach $\alpha$
<b>Knowledge and value attributed to particular options in the decision-making</b>	3. I know the risks and side effects of each option.	0.93
	2. I know the benefits of each option	
	5. I am clear about the major risks and side effects	
	4. I am clear about the more important benefits that to me	
	6. I am clear about what is most important to me (the benefits or risks and side effects)	
	1. I know what the available options to me	
<b>Effective decision</b>	10. I am clear about the best choice for me	0.89
	16. I'm happy with my decision	
	15. I hope to keep my decision	
	14. My decision shows what is important to me	
	13. I feel like I made an informed choice	
	12. This decision is easy for me to take	
<b>Support for making the decision</b>	11. I feel unsure about what to choose	0.73
	8. I'm choosing without pressure from others	
	7. I have enough support from others to make a choice.	
<b><math>\alpha</math> Cronbach total scale</b>	9. I have enough advice to make a choice	0.94

Of the 95 (18.2%) master's degree students, 16 (16.8%) reported having prevention as a therapeutic measure in *Flu syndrome*, through annual vaccination. Measures of *respiratory etiquette* were the option for 19 (20.0%) of the students. The symptomatological control for the flu syndrome was the option of the majority of these students, 57 (60.0%). Three students were unsure about their choices made regarding the *Flu syndrome* (3.2%). The distribution of these students showed: (n=2 of master's of community nursing, (11.8%, n<sup>Total</sup>=17) and, n=1 of master's of nursing in women's health and obstetrical nursing (3.7%, n<sup>Total</sup>=27).

## DISCUSSION

The Portuguese version resulted in three factors, which explained 69% of the total variance, indicating that the instrument measured three domains of conflict when a decision in health was made. This conclusion is supported by correlation analysis between the three dimensions, which showed that the correlations between all dimensions and the global scale were stronger than the correlation only between the dimensions. New administration of the tool to confirm the obtained results is recommended. The evaluation of the fidelity of the scale ranged between 0.73 and 0.93 for the three dimensions, verifying a good intercorrelation and homogeneity within the items that composed it. The names adopted for the dimensions in the Portuguese version attempted to meet the original subscales designation.

It was observed that the factorial solutions encountered were the same as the original version (three dimensions), however some items saturated factors other than the initial,

maintaining very good results of internal consistency. The number of participants was considered to be a strong point of this study (n=521), and exceeded the amount recommended in the literature for factor analysis<sup>(11)</sup>. With respect to the demographic characteristics, as with the reality of higher education students in Portugal<sup>(12-13)</sup>, a large predominance of females compared to males was observed, and most students were not displaced from their household (72%); the mean age (22.5 years) was close to the national average (23 years), which strengthens the possibility of generalizing results. Relative to the decision-making in the therapeutic options for the flu syndrome, no significant differences existed in the total scale score between master's and BSN students. We obtained (3.3%, n = 14) of the BSN students and (6.3%, n=6) of the master's, a total score=0 which reflected the absence of conflict. The total score of the BSN students was situated between 1 and 51 with (X=18.56, SD=9.09) and in the master's students, between 2 and 50, with (x=15.58, SD=10.65). In the three subscales the minimum and maximum intervals of scores were the same in the BSN and master's students, where in subscale 1 the interval was between 0-30 in both, in the subscale 2 between 0-35 in the BSN students and 0-29 in the master's, and in subscale 3, it was between 0-35 in BSN and 0-31 the master's students. We highlight that in the subscale 1 – *Knowledge and value attributed to particular options of decision-making*, the score 0 (absence of conflict) in master's students was (15.8%), and in the BSN students was (9.2%), in subscale 2 – *Effective decision* the score 0 (absence of conflict) in master's students was (14.7%), and in BSN students it was (5.9%), in subscale 3 – *Decision support* the score 0 (absence of conflict) in master's students was (10.5%), and in BSN students it was (13.6%).

Comparing the BSN with master's students, it was found that master's students had a higher percentage of absence of conflict in the first two subscales which evaluated the knowledge and effective decision with satisfactory evaluation, security and future expectations, verifying a lower percentage of absence of conflict in the subscale *Decision Support*, in which support and counseling are assessed. This suggests that greater information/knowledge reduce the potential for conflict in decision-making<sup>(3-5)</sup>, a congruent result with some of the many published studies<sup>(14-19)</sup>, and also suggests that other factors such as autonomy, professional and life experiences<sup>(20)</sup> should be taken into account in future studies.

There were no significant differences in the study of the relationships between the demographic variables with the dimensions of the Portuguese scale. The results also provided evidence that students that had the option of *respiratory etiquette and social distancing measures* as a therapeutic approach to the flu syndrome, had a higher level of agreement on items of the subscale *Knowledge and value attributed to particular options in making the decision*, suggesting they had more information about the options available to them. This level of agreement presented in the subscale *Effective decision* in items 13 to 16, suggested an informed choice, with the expectation of maintenance in the future, which translates into satisfaction; maintaining also the level of agreement on item 9 of the subscale *Support for the decision* that indicated sufficient counseling for making the choice. Although the option *symptomatological control resorting to pharmaceuticals* was the most chosen as a therapeutic attitude towards the flu syndrome, this option is the one that met the highest level of disagreement in the three subscales, which suggests less knowledge/information, less predictability for maintaining the choice, a lower level of safety and satisfaction as well as counseling and support to make a choice.

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## CONCLUSION

The *Scale of Conflicts in Decision-Making in Health – ECTDS* that resulted from the transcultural adaptation of the scale, *Decisional Conflict Scale (DCS)*, met the criteria of psychometric validity, and is a promising tool for evaluation of conflicts in decision-making in health. This instrument has been adapted to French and Spanish languages, and applied in different contexts, such as: prenatal testing, chronic pain, osteoarthritis, prostate cancer, breast cancer, heart disease, and to assess the decisional conflict of nursing students for maintaining their career, and we consider it to be relevant, reliable and valid. However, we consider that the cultural realities of Portuguese language speakers, such as those in Brazil and African countries, are very distinct from each other, requiring for this reason that the semantic, idiomatic, experiential and conceptual equivalence is met. A previously validated instrument does not make it valid in the moment, context or culture without adaptation of the instrument for its use in a new configuration, which is the best manner to obtain a metric equivalent to the original. The results also provided evidence that the majority of nursing students had some decisional conflict with regard to flu treatment options, with a total mean score of 18, increasing to a mean score of 27 when students were increasingly aware that they were uncertain about their options. These results are suggestive that although in formation in the area of health, when the options of choice in this matter arise from a personal perspective, the level of uncertainty emerges, making it urgent to have more information about the available options. This awareness can increase the use of strategies that support nursing students in their decision-making, reducing the level of decisional conflict. Thereby, strategies for decision support in health can be developed in students, making the process of decision-making more clear, informed, consistent with personal principles and, consequently, more satisfactory.

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