

Reduced version of the scale of attitudes towards alcohol, alcoholism, and alcoholics: primary results

VERSÃO REDUZIDA DA ESCALA DE ATITUDES FRENTE AO ÁLCOOL, ALCOOLISMO E AO ALCOOLISTA: RESULTADOS PRELIMINARES

VERSIÓN REDUCIDA DE LA ESCALA DE ACTITUDES FRENTE AL ALCOHOL, ALCOHOLISMO Y AL ALCOHÓLICO: RESULTADOS PRELIMINARES

Divane de Vargas¹

ABSTRACT

This study aimed to analyze the items of the Scale of Attitudes toward Alcohol, alcoholism and alcoholics in order to prepare a reduced version keeping the instrument's psychometric properties. The preliminary version of the Scale composed by 165 items was tested in a sample with 144 nursing student. The evaluation process of the items consisted of the total-item coefficient correlation and reliability of the instrument was estimated by Cronbach's alpha coefficient. Results indicate the permanence of 83 items, divided into five factors that showed satisfactory values in the different coefficients of internal consistency. Further studies are needed with larger samples in order to give continuity to the process of scale validation among health professionals.

DESCRIPTORS

Scale
Attitude
Alcoholism
Validation studies

RESUMO

Este estudo teve como objetivo analisar os itens da Escala de Atitudes frente ao Álcool, ao Alcoolismo e ao Alcoolista, a fim de elaborar uma versão reduzida, mantendo as propriedades psicométricas do instrumento. Em sua versão preliminar, a escala foi constituída por 165 itens, sendo aplicada a uma amostra de 144 estudantes de enfermagem. O processo de avaliação dos itens deu-se pela análise da correlação do item total e a confiabilidade do instrumento foi estimada pelo coeficiente alfa de Crombach. Os resultados obtidos indicaram a permanência de 83 itens, divididos em cinco fatores que apresentaram valores satisfatórios nos diferentes coeficientes de consistência interna. Concluiu-se que o resultado do estudo abre perspectivas para novas pesquisas, com a necessidade de ampliação da amostra com vistas a dar continuidade ao processo de validação da EAFAAA entre profissionais da saúde.

DESCRITORES

Escalas
Atitude
Alcoolismo
Estudos de validação

RESUMEN

Este estudio objetivó analizar los ítems de la Escala de Actitudes frente al Alcohol, al Alcoholismo y al Alcohólico, a fin de elaborar una versión reducida manteniendo las propiedades psicométricas del instrumento. En su versión preliminar, la escala se constituyó de 165 ítems, aplicándose a muestra de 144 estudiantes de enfermería. El proceso de evaluación de ítems se realizó por análisis de correlación de ítem total; la confiabilidad del instrumento se estimó por coeficiente alfa de Crombach. Los resultados obtenidos indicaron la permanencia de 83 ítems, divididos en cinco factores que presentaron valores satisfactorios en los diferentes coeficientes de consistencia interna. Se concluyó en que el resultado del estudio abre perspectivas para nuevas investigaciones, con necesidad de ampliación de la muestra, a fin de dar continuidad al proceso de validación de EAFAAA entre profesionales de la salud.

DESCRIPTORES

Escalas
Actitud
Alcoholismo
Estudios de validación

¹ Ph.D., Professor, Maternal-Infant and Psychiatric Nursing Department, University of São Paulo School of Nursing. São Paulo, SP, Brazil. vargas@usp.br

INTRODUCTION

According to the World Health Organization⁽¹⁾, about 10% of the population in urban centers all of the world misuse some psychoactive substance, independently of gender, age, social and instruction level. Alcohol and tobacco use are more frequent, as these are considered legal drugs, permitted by society and encouraged by the media. International and Ministry of Health (MH)⁽²⁾ estimates appoint that, in Brazil, between 6% and 8% of the population, about 16 million people, need regular care due to alcohol and other drugs misuse-related disorder⁽²⁾. Despite this finding, different impediments exist to diagnose, treat or forward people with complications deriving from alcohol consumption at health services. At a cognitive level, health workers display lack of knowledge on the range of symptoms caused by alcohol misuse and dependence, and also on means to facilitate their diagnosis, in addition to a negative view on patients and their evolution perspectives regarding the problem⁽³⁾.

This negative view, manifested through health professionals' negative attitudes towards individuals with alcohol-related problems, has been well documented in Brazilian⁽⁴⁻⁵⁾ and international⁽⁶⁻⁷⁾ literature and has constituted, among others, one of the main obstacles for treating these clients, as professionals' attitudes and perceptions affect treatment response, in case of organic as well as psychic disorders and strongly influence the quality and quantity of care delivery⁽⁸⁾. Health workers' negative attitudes are expected to influence the type and quantity of care delivered to individuals with problems related to alcohol and other drugs use^(7,9).

Attitudes are affective and relatively stable arrangements, which imply the positive or negative trend to answer the target or object (symbol, phrase, person, institution, idea, belief, ideal, anything that exists for the individual). They are culturally learned and organized by experience⁽¹⁰⁾. An attitude can also be defined as an acquired and long-lasting predisposition to act always in the same way, in view of a certain class of objects or a persistent mental and/or neural condition of readiness to react in view of a certain class of objects, not as they are, but as they are conceived⁽¹¹⁾.

For data collection, most Brazilian studies^(5,12-13) used scales constructed in other cultures and languages, translated for application in the country. According to the authors who used these instruments⁽¹²⁻¹³⁾, they entail limitations, such as the fact that their full version was never published, there are few studies of their psychometric properties⁽¹²⁾ and no cross-cultural research about them is available with a view to their application in Brazil⁽¹⁴⁾.

Experts⁽¹²⁻¹³⁾ have also reported inadequacies in the translated scales, such as: duplicated questions, hard to adapt or biased translations and overlapping among available scales, causing dissatisfaction with their use in Brazil.

Dissatisfaction with available instrument to measure a certain construct constitutes one of the main justifications to build a new instrument⁽¹⁵⁾. Departing from this theory, in 2005, the first Brazilian scale was constructed to measure attitudes towards alcohol, alcoholism and alcoholics⁽¹⁴⁾. The Attitude Scale Towards Alcohol, Alcoholism and Alcoholics (EAFAAA)⁽¹⁴⁾, in line with recommendations found in literature⁽¹²⁾, was constructed to assess the main groups of health professionals' attitudes towards alcohol and alcoholism (moral factor, disease factor, causal factor, professional factor and human factor).

An earlier study⁽¹⁶⁾ aimed at testing the factor validity and reliability of the EAFAAA through factor analysis evidenced its reliability to assess attitudes towards the theme. The results achieved through initial psychometric analysis⁽¹⁶⁾ resulted in a satisfactory reliability ratio for a not yet refined instrument. Despite its good psychometric qualities at the end of the validation process, however, some EAFAAA factors still continued to present low internal consistency rates, and the instrument showed to be too long. Among the reasons for these results, the author appointed the technique chosen for data analysis (factor analysis), which may have been hampered by the small number of respondents (144)⁽¹⁶⁾, as specialized literature on the theme^(15,17) recommends that, for this type of analysis, the sample should be calculated, guaranteeing between five and ten respondents for each instrument item.

The results concluded that the EAFAAA was unfinished and that further research would be necessary to obtain a shorter instrument with more satisfactory psychometric properties. Therefore, the analysis of EAFAAA data was suggested, using other statistical techniques that would be more adequate for the analysis model, with a view to guaranteeing a preliminary instrument with more satisfactory psychometric properties⁽¹⁶⁾.

Thus, the instrument's psychometric properties needed to be studied through other statistical techniques and it was unfinished, considering that the instrument validation process should involve a range of inter-related studies, aiming for empirical verification, through different statistical test, of the relation among the variables the instrument aimed to measure^(15,17). This study aims to analyze the items of the Attitude Scale Towards Alcohol, Alcoholism and Alcoholics, in order to elaborate a short version while preserving the instrument's psychometric properties.

Despite its good psychometric qualities at the end of the validation process, however, some Attitude Scale Towards Alcohol, Alcoholism and Alcoholics factors still continued to present low internal consistency rates, and the instrument showed to be too long.

METHOD

Subjects

The study subjects were 144 nursing students from the final semester of the undergraduate program at two private colleges in the North of São Paulo State. Eighty-four of them came from *College A* and 60 from *College B*. The respondents' age ranged from 19 to 51 years and students were predominantly women.

Ethical aspects

The ethical aspects complied with in this research were approval of the project by the Institutional Review Board at the University of São at Ribeirão Preto Medical School *Hospital das Clínicas* and the signing of the Informed Consent Term by subjects who participated in all study phases.

Scale construction

As this paper did not intend to present the instrument construction process, already published in a previous study⁽¹⁶⁾, the scale construction phases will be presented succinctly. The construction of the instrument items was based on the contents of the interviews held with 30 clinical nurses. From the interview analysis, 225 statements were selected that constituted the EAFAAA items, distributed in seven factors. Ten judges (validators) experienced in the content area assessed the material and verified whether the items and factors adequately represented the construct under analysis (alcohol, alcoholism and alcoholics). The experts' assessment process resulted in a scale that comprised 165 items, distributed across five factors.

Material

In its preliminary version, the EAFAAA contained 165 items that assessed five factors related to alcohol, alcoholism and alcoholics. Each factor or subscale contains a different number of items, assessing moral, etiological, professional and human factors related to alcoholism⁽¹⁰⁾. Next, these factors will be presented. Thus, Factor 1: The alcoholic: work and interpersonal relations, joins the largest number of items (66), regarding perception, opinions and feelings towards the alcoholic, as well as working with and relating to the patient. Factor 2, Etiology, includes 28 items, related to conceptions, opinions and attitudes towards the etiology of alcoholism, with psychic, moral and biological factors being attributed as causes of alcoholism. Factor 3, Disease, adds up 18 items related to attitudes, perceptions and feelings towards alcoholism as a disease. Its items express opinions on alcoholics' psychological characteristics, psychiatric treatment and professional management during treatment and care. Factor 4, Repercussions deriving from alcohol use/misuse, comprises 31 items that refer to attitudes towards the psychic and so-

cial consequences of alcohol use/abuse, involving the individual, the family and other social relationship spheres (work, friendships, etc.). Finally, Factor 5, the Alcoholic Beverage, contains 22 items that relate to the professional's opinions, feelings and conducts towards the alcoholic beverage; consequences the consumption of beverages entails for the individual; the limit between normal and pathological drinking and the effects of drinking on people's behavior⁽⁵⁾.

Procedures

To apply the instrument, it was applied to the subject group in class, in one single booklet, with the 165 items distributed at random. Questions could be answered through a five-point Likert scale, in which subjects should express their opinion on each assertion according to the following scheme: (1= I totally disagree; 2 = I disagree; 3 = indifferent; 4 = I agree; 5 = I totally agree). Maximum response time was 30 minutes and all subjects accepted to participate in the study.

Item analysis

To confirm instrument validity, one important phase is to determine the construct validity, which, among others, analyzes an instrument's items, checking whether they are actually representing the psychological construct they intend to measure. To check the instrument's construct validity, initially, statistical tests were performed to identify its inter-item correlation consistency. As the sample size was smaller than the number of variables; the first step to analyze the items in order to minimize the problem was to use Confirmatory Factor Analysis⁽¹⁵⁾. To use this technique, the five previously defined EAFAAA factors were used. The product of this analysis was not satisfactory though, as the model did not adjust well, in view of the high degree of freedom among data. The result increased the probability that the model would be rejected, so that other techniques were sought to permit this analysis. In that sense, the second step to analyze the items was the use of the total item coefficient technique.

Item-total coefficient

The item-total correlation technique has been the most indicated to analyze items while elaborating a measurement instrument, as experts consider it a refinement of the more commonly used technique for item analysis⁽¹⁸⁾. Item-total correlation aims to verify the item's correlation with the proposed factor and involves correlating each item score with the sum of other instrument items' scores⁽¹⁸⁾. That measure is called the Item-total Coefficient, and is calculated as follows:

$$r_k = \frac{\sum_{i=1}^n (X_{ik} - \bar{X}_k)(Y_{ik} - \bar{Y}_k)}{\sqrt{\sum_{i=1}^n (X_{ik} - \bar{X}_k)^2} \sqrt{\sum_{i=1}^n (Y_{ik} - \bar{Y}_k)^2}}$$

X_{ik} : score of the k-eth item in the i-eth sample member;
 \bar{X}_k : mean score of the k-eth item in the sample;
 \bar{Y}_k : sum of the i-eth individual's scores, removing the k-eth item;
 \bar{Y} : mean sum of scores, removing the k-eth item from the sample;
 n: sample size.

To maintain the item in the Scale, a factor loading of 0.30 was set as the cut-off point, considered adequate for an item to represent a factor well⁽⁷⁻⁹⁾.

Internal consistency

The items' internal consistency, i.e. the instrument's reliability level, was estimated through Cronbach's Alpha coefficient, which measures whether a set of items or variables is actually related with one single construct or factor. Hence, this reliability (or consistency) coefficient aims to test the proposed items, determining the average correlation among them^(15,17-18). The higher the mean correlation found among the items, the higher Cronbach's alpha. Hence, if the internal correlation among a certain number of items is high, that means that this set of items or variables will measure the same construct⁽¹⁷⁻¹⁸⁾.

With a view to comparing the outcomes, the internal consistency of the full scale and each EAFAAA factor was estimated through Cronbach's Alpha, before and after the item reduction process through the item-total correlation coefficient.

All analyses were performed in Statistical Package for the Social Sciences (SPSS) software, version 13.0.

RESULTS

By identifying the most consistent EAFAAA items, the item-total correlation in each of the factors the scale assesses was estimated. According to the exclusion criteria, only those items with a item-total correlation of 0.30 or more were maintained in the instrument. The product of this analysis was the exclusion of 82 (49%) of the 165 items. In that process, it was observed that all initially proposed factors were still represented, with between 25 and 53% of the initial items. The percentage of items maintained was 53% in Factor 1; 25% in Factor 2; 38% in Factor 3; 38% in Factor 4 and 50% in Factor 5.

In Factor 1 - *The alcoholic: work and interpersonal relations*, 31 items, i.e. 46.9% of the total were eliminated due to non-compliance with the inclusion criteria, i.e. their item-total correlation coefficient was less than 0.30. Despite the large number of items that were eliminated, after the analysis, Factor 1 was still the scale factor with the largest number of items (35). Regarding the item-to-

total correlation coefficients, 22 out of 35 remaining items scored more than 0.40. The highest coefficient (0.61) was found for item 11 *The alcoholic is irresponsible*, and the lowest (0.30) for item 85 *I should take care of the alcoholic even if he does not want to* (Table 1).

Table 1 - Item-total coefficients of items in Factor 1 - The alcoholic: work and interpersonal relations - São Paulo, SP - 2010

Item	Description	r_{it}
03	The alcoholic is a person without limits	0.36
04	Alcoholics have no good sense	0.50
05	I think alcoholics are irresponsible	0.41
06	The alcoholic never acknowledges that (s)he needs help	0.35
10	The alcoholic thinks he can take care of himself alone	0.38
11	The alcoholic is an irresponsible	0.61
18	I think the alcoholic is dull and slimy	0.53
19	Alcoholics are violent patients	0.48
23	I perceive that the alcoholic drinks without concern with what is going to happen afterwards	0.43
24	I think that people who develop alcoholism are weak	0.37
25	The alcoholic does not want to take care of himself	0.56
26	One should not trust alcoholic people	0.40
29	The alcoholic is an immoral	0.47
30	Alcoholics have never learned the responsibilities of adult life	0.43
66	Alcoholic patients always end up returning to the service with the same problem	0.40
67	I consider alcoholic patients are the most difficult to deal with	0.56
70	The alcoholic is a patient who never gives us return for the care	0.45
71	The alcoholic is a person difficult to have contact with	0.42
72	I am afraid of addressing the alcoholism problem with the patient	0.45
73	I am afraid of the alcoholic's aggressiveness	0.42
74	I feel pity when I see an alcoholic	0.36
75	I feel frustrated when I work with alcoholics	0.41
76	When the patient does not want to cooperate, the best is to give up helping.	0.34
79	When I work with an alcoholic patient, I don't know how to guide the situation.	0.41
84	I think alcoholics give nursing a lot of work.	0.40
85	I should take care of the alcoholic even if he doesn't want to	0.30
91	I feel anger when I work with alcoholics	0.38
92	The alcoholic patient doesn't accept that I talk	0.42
95	Alcoholics are patients who need help	0.49
96	Despite receiving assistance, it is difficult for an alcoholic to kick the habit	0.40
97	I perceive the alcoholic as a lost case	0.41
99	I prefer working with alcoholic patients to working with other patients	0.35
100	Alcoholics are patients who do not collaborate with treatment	0.56
102	Alcoholics are people difficult to deal with	0.42
110	The alcoholic doesn't take treatment seriously	0.53

Factor 2 *Etiology* had the lowest percentage (25%) of excluded items, due to the lack of a significant correlation with the instrument. In this factor, 21 items continued with correlation coefficients ≥ 0.30 , 71% of which with an item-total coefficient > 0.40 . The highest item-factor correlation (0.62) was obtained for item 126 - *I think that depression leads to alcoholism* and the lowest (0.30) for item 127- *People drink to feel happier, looser* (Table 2).

Table 2 - Item-total coefficients of items in Factor 2 - Etiology - São Paulo, SP - 2010

Item	Description	r _{it}
116	Alcoholics are people who seek solutions to affective problems in liquor	0.54
117	I think that going through a family disagreement leads to alcoholism	0.44
118	Alcohol is used as an escape	0.44
119	Timid or inhibited people have a greater chance of developing alcoholism	0.37
120	I think that all alcoholics have something unsolved	0.44
122	I think there is a gene responsible for the development of alcoholism	0.33
123	There is something in the alcoholic's past that makes him drink	0.45
124	The lack of self-control leads to alcoholism	0.51
125	Social and economic problems trigger binge drinking.	0.50
126	I think that depression leads to alcoholism	0.62
127	People drink to feel happier. looser	0.30
129	Alcohol is used as an escape valve	0.48
130	The alcoholic drinks to flee from reality	0.47
133	What is missing in the alcoholic is willpower	0.32
134	Social issues make people drink	0.50
135	Alcoholism starts under the influence of friends.	0.32
136	People without a fixed job develop alcoholism	0.46
137	Children of alcoholics tend to drink	0.38
139	Unresolved people become alcoholics	0.54
140	Dissatisfied people misuse alcohol	0.54
141	I think that people who use alcohol are fleeing from some problem	0.49

Factor 3 – *Disease* – includes the smallest number of items (7). Out of this factor's initial 18 items, 11 (61%) were eliminated after the analysis. The highest item-total correlation coefficient was observed in item 109 – *The alcoholic should be forwarded to the Psychiatrist*. In Factor 4- *Repercussions deriving from alcohol use and abuse*, item analysis through the item-total correlation coefficient resulted in the elimination of 21 (67%) out of 31 initial items. Thus, the factor included ten items, with correlation coefficients ranging between 0.33 and 0.53 and 60% of items with a factor-item correlation ≥ 0.40 (Table 3).

Table 3 - Item-total coefficients of items in Factors 3 - Disease and 4 - Repercussions deriving from alcohol use - São Paulo, SP - 2010

Item	Description	r _{it} F3	r _{it} F4
07	The alcoholic is sick	0.34	
27	Alcoholics are psychologically disturbed people	0.39	
32	I think that the alcoholic is guilty of his health problems	0.31	
57	Alcoholism is a disease	0.31	
59	Alcoholism is not a disease, as a person can control him/herself	0.32	
93	I perceive alcoholics and psychiatric patients in the same way	0.34	
109	The alcoholic should be forwarded to the psychiatrist	0.61	
146	Alcoholism causes physical and psychic dependence		0.35
149	The alcoholic does not perform well in any sector of life		0.53
150	Alcoholics do not have a job		0.38
153	Alcoholism leads to a loss of identity and morale		0.40
154	Alcoholics have a precarious life situation		0.46
157	Many alcoholics just want to enjoy life and are irresponsible		0.40
159	An individual who drinks gets disoriented		0.33
162	Most alcoholics end up alone		0.46
163	Alcohol leads to madness and death		0.48
165	Alcoholics drag along relatives and friends		0.33

Factor 5 *The alcoholic drink* included 22 items at the start of the analysis. At the end of the process, 50% of these scored correlation coefficients below 0.30 and were excluded from the instrument. After terminating item analysis in this factor, 11 items were maintained with correlation coefficients ranging between 0.31, for item 33- *I think that people have the right to drink if they want to* 0.55 for item 55 – *There are people who drink and are able to control themselves* (Table 4).

Table 4 - Item-total coefficients of items in Factor 5 - The alcoholic drink - São Paulo, SP - 2010

Item	Description	r _{it} F5
33	I think that people have the right to drink if they want to	0.31
34	Alcoholic drinks are pleasant and offer wellbeing	0.37
35	Using alcoholic beverages is something normal	0.42
38	I think that having a shot of whisky is considered social drinking	0.39
41	Any amount of drinking will make the person dependent.	0.34
42	Moderate drinking is not harmful	0.42
46	Alcohol relaxes daily tensions	0.48
47	I am in favor of moderate drinking	0.52
48	Small doses of alcohol can cause dependence	0.40
55	There are people who drink and are able to control themselves	0.55

Instrument reliability

The next phase of the EAFAAA item analysis process was to verify the instrument's internal consistency, after correlation analysis through the item-total coefficient. The internal consistency of the items that continued in the scale was estimated using Cronbach's Alpha coefficient⁽¹⁷⁻¹⁸⁾. The reliability of the complete instrument and each of its factors was calculated before and after the item analysis process through the item-total correlation coefficient. After excluding items with low consistency rates from the factor, the scale's reliability coefficient increased from 0.87 in the earlier version to 0.90 in the final 83-item version. A similar result was found for individual factors, with increasing reliability factors for four out of five scale factors, except for Factor 3, whose reliability coefficient did not change after excluding the items; Cronbach's Alpha coefficients, however, was ≥ 0.75 on all factors (Table 5).

Table 5 - Comparison between internal consistency coefficients of five EAFAAA factors before and after the item reduction process through the item-total coefficient - São Paulo, SP - 2010

	Initial version	Short version
	α	α
Factor 1	0.75	0.86
Factor 2	0.74	0.80
Factor 3	0.77	0.77
Factor 4	0.76	0.77
Factor 5	0.47	0.75

DISCUSSION

This study aimed to analyze the items of the Attitude Scale Towards Alcohol, Alcoholism and Alcoholics, investigate the internal consistency of the subscales and the item-total correlation between each item and the instrument. Results evidenced the scale's theoretical consistency (construct validity) and ability to precisely assess (reliability) attitudes towards alcohol, alcoholism and alcoholics. Although almost 50% of items were withdrawn, a result wanted in this study, all factors from the preliminary version⁽¹⁶⁾ continued in the scale after the analysis. In an earlier study⁽¹⁶⁾, in which EAFAAA factors were analyzed through factorial analysis, it was observed that 42% of items from the initial version were withdrawn. A comparison between both study results showed that the analysis through the item-total correlation coefficient method reduced the number of items by almost 10% more than through the technique used in the first study, showing its adequacy for the intended goals⁽¹⁶⁾.

Also in comparison with an earlier study⁽¹⁶⁾, 11 items that had demonstrated adequate factor loadings and had hence been maintained after the first analysis were eliminated after item analysis, which were: (1 – *Alcoholics are individuals who depend on liquor for everything*; 2 – *Containment is needed to deliver care to alcoholics*; 3 – *One only finds alcoholic patients for care at primary care units in the suburbs* 4 – *Alcoholics are revolted*; 5 – *I think that hereditary factors influence alcohol misuse*; 6 – *I perceive that alcoholism is related with the individual's instruction level*; 7 – *I perceive that alcoholics have low self-esteem*; 8 – *It's no use being aggressive to alcoholic patients*; 9 – *The team needs training to work with alcoholics*; 10 – *Individuals who drink get disoriented* and 11 – *I perceive alcoholics as marginalized people*). On the other hand, items that had been eliminated in the earlier analysis⁽¹⁶⁾ were again added to the EAFAAA, including: (1 – *Alcoholics never acknowledge that they are in need of help*; 2 – *Alcoholics think they can take care of themselves alone*. 3 – *I feel pity when I see an alcoholic*; 4 – *Alcoholics are patients who need help*; 5 – *Despite receiving assistance, it is difficult for an alcoholic to kick the habit*; 6 – *I perceive alcoholics and psychiatric patients in the same way*; 7 – *Alcoholism is not a disease, as individuals can control themselves*). According to experts^(15,17-18), changes due to the continuation of different numbers of items and the allocation of items to other factors are expected results in research on scales' psychometric properties. That phenomenon could be observed here, as the analysis of EAFAAA items through the item-total coefficient modified the number of items in the factors in comparison with the results of the earlier analysis⁽¹⁴⁻¹⁶⁾. In the comparison, the number of items in Factors 1, 3 and 5 decreased from 42, 13 and 12 items in the earlier version to 35, 07, 10 items, respectively, in the current version. On the other hand, a slight increase was observed in the number of items in Factors 2 and 4. Factor 2 increased from 20 to 21 items^(14,16) and Factor 4 from 9 to

11 items from the previous to the current version.

Another relevant observation with regard to item analysis regards the item-total correlation coefficients that were found. For 40 out of 83 scale items, correlation coefficients ≥ 0.40 were found, indicating that almost 50% of EAFAAA items are satisfactorily correlated with the entire instrument, which suggests consistent correlation patterns for other instrument items.

To check the items' internal consistency, that is, the instrument's reliability ratio, after reducing the items through the item-total coefficient, Cronbach's Alpha was used⁽¹⁷⁾; this coefficient is applied when the instrument comprises items on an ordinal scale, with the same number of response levels: alpha coefficient bordering on 1 indicate good internal consistency⁽¹⁷⁾. It was evidenced that, after item analysis and continuation of those items with a factor loading ≥ 0.30 , α increased for all factors, demonstrating an increase in the scale's internal consistency, whose reliability ratio corresponded to 0.90, which experts on the theme consider satisfactory^(15,17-18), recommending that alpha coefficients ≥ 0.70 are adequate to conclude that internal consistency exists for an instrument. In line with the reliability observed for the full 83-item scale, satisfactory reliability coefficients were observed for all EAFAAA factors, with Cronbach's Alpha coefficients ≥ 0.75 . The most significant increase was observed for Factor 5, from $\alpha = 0.47$ in the first study⁽¹⁶⁾ to $\alpha = 0.75$, based on which a significant improvement in the instrument's internal consistency is verified, after analyzing the items through the item-total correlation coefficient.

In this study, the proposal of a statistical model that showed to be efficient and reliable⁽¹⁸⁾, despite considering the subject sample involved in the previous validation of the scale, evidences the advances on the earlier study, which involved the EAFAAA assessment and validation process. In addition, the previous results⁽¹⁶⁾ support it, evidencing that the EAFAAA is reliable to measure attitudes towards the issue, independently of the statistical technique used for analysis. This fact is considered satisfactory, as the instrument is still under construction. Another significant advance presented in this study was that more satisfactory reliability ratios were obtained for all instrument factors, especially Factor 5 *The alcoholic drink*. In the first analysis, this factor did not reach expected internal consistency coefficients and, therefore, jeopardized the reliability of that factor and the EAFAAA as a whole. Besides, item analysis through the item-total correlation coefficient permitted reducing the initial version by 82 items, more than the 69 items eliminated in earlier studies^(14,16). A comparison between the results of the previous analysis and the present study shows that the final scale included 83 items, 13 less than the 96 resulting from the previous analysis⁽¹⁶⁾, showing that the selected analysis technique permitted a further reduction in the number of EAFAAA items.

The limitations that can be appointed in this research include the size of the initially recruit sample to assess the instrument, which was minimized by the choice of the item assessment method, in view of the obtained results. Besides, the sample comprised senior Nursing students, although professionally active nurses would be desirable. This procedure was adopted due to the fact that literature on the theme suggests that scales under development be initially applied to students representative of the final population for whom the instrument is being constructed. In this sense, it was constructed for nurses and other health professionals, due to easy and rapid data collection⁽¹⁸⁾. Despite these limitations, one cannot lose out of sight that this is a preliminary study and that the scale needs to be applied to other samples of nurses and other health professionals, which is already happening and will give rise to new publications on the validity and application of the scale presented here as, in this study, it was limited to a preliminary exploration of the scale's psychometric properties through the analysis of its items.

Nevertheless, this study is important, mainly when considering the contemporary reality, which raises care delivery to patients with alcohol and other drugs-related problems as a new challenge for health care practice. Besides, the Ministry of Health itself acknowledges that health professionals' attitudes, allied with a lack of knowledge and preparation to act on this problem have resulted in low detection levels of these problems. These represent an

obstacle for professionals' more effective action, demanding research on the theme, also regarding the availability of reliable instruments that are capable of identifying such attitudes. Moreover, the use of the EAFAAA should not be limited to the mere identification of attitudes; on the opposite, the scale can be used to enhance professionals' reflection when discussing their answers, hence analyzing their attitudes towards the issue.

CONCLUSION

The analysis of the items in the Attitude Scale towards Alcohol, Alcoholism and Alcoholics showed high internal consistency, item-total correlation and Cronbach's alpha coefficients, which demonstrate its factor validity and through which the instrument's good psychometric parameters can be affirmed, raising perspectives for future research. Based on the premise of maintaining the most representative items in the final scale version, 49% of items from the initial version were eliminated. Nevertheless, the scale is still extensive, demanding further research with a view to offering a shorter scale with more refined psychometric qualities. Although the scale has demonstrated its reliability to measure attitudes towards alcohol, alcoholism and alcoholics, further applications to health professional and a consequent broadening of the sample are necessary to improve the scale's psychometric qualities and continue its validation process in different populations.

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Acknowledgements

To the Center for Applied Statistics - CEA, University of São Paulo Institute of Mathematics and Statistics for cooperation with the statistical analysis of study data.