

DEVELOPMENT AND VALIDATION OF A SCALE OF ATTITUDES TOWARDS ALCOHOL, ALCOHOLISM AND ALCOHOLICS

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The objective of this study was the construction and validation of a scale that would measure the attitudes towards alcohol, alcoholism and the alcoholic, called the Scale of Attitudes Towards Alcohol, Alcoholism and the Alcoholic. The face and content validations, as well as the factor analysis of the data obtained in a preliminary test with 144 nursing students resulted in a scale consisting of 96 items, divided into 5 factors: Attitudes towards the alcoholic person: care and interpersonal relations; Etiology; Disease; Repercussions deriving from alcohol use/abuse; Alcoholic beverages. The general scale presented a consistency level of 0.90. The resulting instrument is concluded to be a reliable tool to evaluate attitudes towards alcohol, alcoholism and alcohol addicts.

DESCRIPTORS: alcoholism; attitude; nurses, male

CONSTRUCCIÓN Y VALIDEZ DE UNA ESCALA DE ACTITUDES FRENTE AL ALCOHOL, AL ALCOHOLISMO Y AL ALCOHÓLICO

Este estudio tuvo como objetivo construir y validar un instrumento de medida de Actitudes frente al Alcohol, al Alcoholismo y al Alcohólico: Escala de Actitudes frente al Alcohol, al Alcoholismo y al Alcohólico. La validez aparente y de contenido del instrumento, así como el análisis factorial de los datos de su aplicación preliminar a un total de 144 estudiantes de enfermería, resultaron en una escala compuesta por 96 ítems divididos en cinco factores agrupados bajo el nombre de Actitudes frente al alcohólico: el trabajo y las relaciones interpersonales; la Etiología; la Enfermedad; las Repercusiones provenientes del uso/abuso del alcohol; y, la Bebida alcohólica. La Escala general presentó una consistencia interna de 0,90; se concluyó que el instrumento construido se mostró confiable para la evaluar las actitudes frente al alcohol, al alcoholismo y al alcohólico.

DESCRIPTORES: alcoholismo; actitude; enfermeros

CONSTRUÇÃO E VALIDAÇÃO DE UMA ESCALA DE ATITUDES FRENTE AO ÁLCOOL, AO ALCOOLISMO E AO ALCOOLISTA

Este estudo teve como objetivo construir e validar instrumento de medida de atitudes frente ao álcool, ao alcoolismo e ao alcoolista (escala de atitudes frente ao álcool, ao alcoolismo e ao alcoolista). A validação aparente e de conteúdo do instrumento, bem como a análise fatorial dos dados de sua aplicação preliminar, realizada com amostra de 144 estudantes de enfermagem, resultou numa escala composta por 96 itens divididos em cinco fatores: atitudes frente ao alcoolista - o trabalho e as relações interpessoais; etiologia; doença; repercussões decorrentes do uso/abuso do álcool; a bebida alcoólica. A escala geral apresentou consistência interna de 0,90. Concluiu-se que o instrumento construído mostrou-se confiável para avaliação das atitudes frente ao álcool, ao alcoolismo e ao alcoolista.

DESCRIPTORES: alcoolismo; atitude; enfermeiros

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INTRODUCTION

The history of alcoholism is as ancient as man himself and, despite having received attention from Medicine only after the mid-19th century, it is nowadays configured as one of the greatest public healthcare problems all over the world. It is estimated that this condition affects 10% of the global population and 12.3% of the Brazilian population⁽¹⁾. Such percentages seem to justify the presence of a significant amount of patients with problems that are directly related to alcohol and alcoholism in clinical, surgical and emergency hospital units⁽²⁾, as well as in primary healthcare services⁽³⁾.

When an alcoholic seeks healthcare, regardless of the place, it is likely that this person will keep contact with the nurse and the nursing team. Therefore, the attitudes the professional presents towards this patient can directly affect the subsequent results of the treatment. Although the attitudes of nurses towards alcohol have been studied in the United States and in some European countries for nearly five decades⁽⁴⁾, there are few studies about the attitudes of nurses towards alcohol, alcoholism and the alcoholics in Brazil. Of these, some⁽⁵⁾ aimed at evaluating the most usual instruments for the measurement of nursing attitudes towards the theme. The others⁽⁶⁻⁷⁾ aimed to evaluate the attitudes of these professionals towards alcohol and the alcoholics.

The most usual instrument in Brazil to measure the nurses' attitudes is Seaman Mannello Nurses's Attitudes Toward Alcohol and Alcoholism Scale⁽⁸⁾. Translated and validated in the country⁽⁵⁾, it is a scale consisting of 30 items, distributed in five factors, which cover, among other aspects, the perceptions of the alcoholics and their attitudes towards drinking.

A brief analysis of the results obtained with the application of Seaman Mannello in the Brazilian studies⁽⁶⁻⁷⁾ revealed, among other aspects, that nurses conceived alcoholism as a disease, and that alcoholics were ill people, revealing positive attitudes. However, negative attitudes were predominant in nurses regarding working with this clientele^(6-7,9). When the authors⁽⁵⁻⁶⁾ evaluated the use of this scale, they noted

some limitations. Among them, never having been published integrally; few existing studies about its psychometric properties⁽⁵⁾ and the inexistence of satisfactory studies on its cross-cultural adaptation for application in Brazil⁽¹⁰⁾, which makes it unsatisfactory for usage in the country – the main justification for the construction of a new attitude scale⁽¹¹⁾.

The classical theories about attitudes⁽¹²⁾ define this construct as predispositions. In order to respond to a given set of stimuli with a given set of answers, an attitude can thus be defined as an acquired and lasting predisposition to always act the same way towards a given class of objects, or a persistent mental/neural state of readiness to respond to a given class of objects, not as they are, but as they are conceived⁽¹²⁾.

Observing the lack of instruments to evaluate attitudes towards alcohol, alcoholism and the alcoholics in the Brazilian market, as well as the lack of cross-cultural adaptation studies of the available scales for application in Brazil, allied to the lack of scientific production about the attitudes of healthcare professionals towards alcohol and other psychoactive substances, this study aimed to build a scale of measurement towards alcohol, alcoholism and the alcoholics that would cover the main sets of attitudes (moral, disease, etiologic, professional and human factors), as well as test the factorial validity and reliability of the resulting instrument.

METHOD

Item construction

For the construction of the items of the instruments, several interviews were held with 30 nurses, ten of these primary healthcare nurses and 20 from hospital units. This sample composition was chosen to apprehend the perceptions of professionals at the three levels of healthcare (primary, secondary and tertiary).

The interviews were semi-structured, with three guiding questions: 1 – *What is your opinion about alcoholic beverages?* 2 – *What do you think about the person who consumes alcoholic beverages?* 3 – *What is it like to deal with alcoholics at work?* The interviews lasted from 30 minutes to one hour, being recorded and transcribed integrally as soon as they were concluded. The data were analyzed according to the theoretical framework of Content Analysis, which originated nine thematic categories. From these, 225 statements constituting positive (favorable) and negative (unfavorable) items towards alcohol, alcoholism and alcoholics were selected. The items were cautiously written, so that each would contain a single idea, forming short, objective and clear sentences.

The ethical aspects observed for the execution of this research were the approval by the Review Board of Hospital das Clínicas, part of Faculdade de Medicina de Ribeirão Preto/Universidade de São Paulo, and the signature of the term of consent by the research subjects.

Face/Content Validation

10 validators (judges) with experience in the themes of alcohol and other drugs were invited to perform the content and face validation of the resulting instrument. These judges were given the task of analyzing the 225 items originated in the interviews, as well as verifying whether they represented the hypothetical universe of the object (alcohol, alcoholism and alcoholics), besides analyzing the adequacy of the items' semantic structure. The judges were also asked to relate each item to the factor they believed to best represent the theme it referred to, rating it as favorable (positive) or unfavorable (negative). At this point, the agreement between the judges was also checked, regarding the removal or changes in items and factors. At the end of the content and face validation, 165 items had remained in the instrument, originating five factors.

Semantic analysis

In an attempt to verify whether the proposed items and instructions for filling out the Scale of Attitudes towards alcohol, alcoholism and alcoholics – *Escala de Atitudes frente ao Alcool, o Alcoolismo e ao Alcoolista* (EAFAAA) – were understandable, the previous version of the instrument was applied to two groups of eight persons each. Of these, eight were nurses in a public hospital and eight were students in the last semester of a Nursing course in a private college. The participants were asked to fill out the instrument and, at the end, a discussion was held with each group, when the subjects were invited to point out possible difficulties in the instructions or the terms present in each item.

Application Procedures (empiric collection)

The preliminary EAFAAA version, consisting of 165 items, was applied to a population of 144 undergraduate Nursing students of the last semester in two different colleges, named College A and College B in this study. This application was performed at different moments for both groups. 84 students from College A and 60 students from College B completed the scale, with both groups being interviewed at the end of November, 2004. The age of the respondents, predominantly women, varied from 19 to 51 years.

The instrument was presented to the subjects in a single book, containing the 165 items distributed randomly. The questions were to be answered in a 5-point Likert scale, where the students should express their opinion about each statement, according to the following scheme: 1 = Totally disagree; 2 = Disagree; 3 = Indifferent; 4 = Agree; 5 = Totally agree). With the instruments filled out (n = 144), a database was created with *Statistical Package for the Social Sciences v.13 for Windows* (SPSS) software, and then the verification of the construct validity was started.

Validation of the construct

Other techniques are fundamental to confirm the validity of psychometric tests, in addition to the content validation described before⁽¹³⁾. One such

technique is the determination of construct validity, i.e. the factorial validity, which consists in verifying whether the items indeed represent the psychological construct intended to be measured, which is the case of the attitudes. This verification can be done by using factor analysis, and the estimation of the test's internal consistency⁽¹³⁾. Factor analysis is defined as a group of statistical techniques, whose objective is to represent or describe a number of starting variables, from a lower number of variables. Therefore, it is a multivariate statistical method that aims to simplify the data by reducing the amount of variables used to describe a given object⁽¹⁴⁾. Factor analysis also produces a factor loading for each item, which shows the covariance between the item and the factor. The closer to 100% the item-factor covariance, the better the item⁽¹³⁻¹⁴⁾.

Main component analysis was executed to obtain the EAFAAA factors, with a varimax data rotation, imposing the configuration of five factors. This previous imposition aimed to maintain the characteristics proposed in the preliminary version, originated during the content validation. When the five factors were defined through the main component analysis, the inspection of the factor loadings of each item was started, and items with a factor loading lower than 0.40 were discarded.

Reliability analysis (Internal consistency)

The reliability of a scale refers to its capacity to present the same results when administered at different times, in diverse situations and populations. To be really exact, the test needs to approach unity (0.90)⁽¹³⁾. Thus, Cronbach's alpha technique was used to estimate EAFAAA's internal consistence. Cronbach's alpha measures whether a group of items (or variables) is really related to a single construct or factor. Therefore, it is a coefficient of consistency, which aims at testing the proposed items by determining the average correlation among them⁽¹³⁾. The higher the average correlation among the items, the higher Cronbach's alpha. Thus, if the internal correlation among a given number of items is high,

that means that this group of items or variables measures the same construct.

RESULTS

The face and content validation performed by the judges resulted in the elimination of 60 out of the 225 initial items of the instrument. This exclusion was justified by the low agreement among the judges on the allocation of the items in the proposed factors. The 165 remaining items were grouped by the judges into five factors: (F1: The alcoholic person; F2: The alcoholic beverage and alcoholism; F3: Working and relating to alcoholics; F4: The origin or etiology of alcoholism; F5: The social repercussions of using/abusing alcohol).

The construct validation procedure through main component analysis and verification of reliability resulted in the exclusion of another 69 of the 165 remaining items from the content and face validation. These items had a factor loading lower than 0.40, and, as such, were discarded. With the application of these exclusion criteria, a final version of the scale was reached, composed of 96 items distributed in five factors: (F1: The alcoholic person: the work and the interpersonal relations; F2: Etiology; F3: Disease; F4: The social repercussions of using/abusing alcohol; F5: Alcoholic beverages). This composition allowed for the verification that, although the results had confirmed the pertinence of some factors in the initial version of the instrument, others lost their characteristics or were reallocated, different from those elaborated previously, and a new factor (Disease) was created. This was expected, because, according to specialists⁽¹³⁻¹⁵⁾, this is one of the results of the factor analysis.

The reliability test of the final 96-item EAFAAA version resulted in a Cronbach's alpha of 0.9068. Regarding the individual reliability of the factors, factor 1 (*The alcoholic person: the work and the interpersonal relations*), presented the highest index, with an (α) coefficient of 0.9178. The other factors also had satisfactory results close to the 0.90 reference value,

except for factor 5 (*Alcoholic beverages*), with an (α) coefficient of 0.4771.

Table 1 – EAFAAA Psychometric characteristics resulting from construct validation, São Paulo, SP, 2008

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Eigenvalue	9.35	4.02	2.41	2.69	2.47
% variance	23.2	11.4	7.1	5.7	5.2
Alpha (α)	0.91	0.86	0.74	0.77	0.47
Total 96 items	42	20	13	09	12

Tables 2 and 3 present the five factors that constitute the final EAFAAA version, as well as factor loading of their component items, showing that the items that remained in this version presented a satisfactory correlation with their respective factors.

Factor 1, *The alcoholic person: the work and the interpersonal relations*, explains 23.2% of the total variance, and is composed of 42 items related to the perception, opinions and feelings towards the alcoholic individual, as well as towards relating and working with the patient (Table 2).

Factor 2, *Etiology*, includes 20 items that refer to conceptions, opinions and attitudes about the etiology of alcoholism. Covering mental, moral and biological factors attributed as causes of alcoholism, this factor explains 11.4% of the total variance (Table 3).

Factor 3, *Disease*, explains a 7.1% variance and aggregates 13 items that are relative to attitudes, perceptions and feelings towards alcoholism as a disease. Its items express opinions about the psychological characteristics of the alcoholics, psychiatric treatment and professional handling during treatment and healthcare (Table 3).

Factor 4, *The social repercussions of using/abusing alcohol*, explaining a 5.7% total variance, is made up of nine items about attitudes towards the mental and social repercussions caused by using/abusing alcohol, involving the individual, the family and other social relation spheres (work, friendships, etc) – (Table 3).

Factor 5, *Alcoholic beverages*, explains 5.2% of the total variance, and contains 12 items referring to opinions, feelings and actions of the professional towards alcoholic beverages; consequences for the individual who uses these beverages; limits between normal and pathologic drinking, and the effects of alcohol on the person's behavior (Table 3).

Table 2 – Factor loadings of the items that comprise factor 1: The alcoholic person: the work and the interpersonal relations, São Paulo, SP, 2008

Item	Content	F1
The alcoholic person: the work and the interpersonal relations		
1	Alcoholics are people without limits.	0.42
6	Alcoholics have no common sense.	0.41
11	Alcoholics are rude, aggressive and have no manners.	0.46
16	Alcoholics are irresponsible.	0.63
21	Alcoholics are bothersome and sticky.	0.59
26	Alcoholics are violent patients.	0.52
31	Alcoholics drink and are not concerned with what will happen afterwards.	0.40
36	I believe that people who develop alcoholism are weak.	0.43
41	Alcoholics do not want to take care of themselves.	
46	Alcoholics cannot be trusted.	
50	Alcoholics are immoral.	0.64
54	Alcoholics have never learned the responsibilities of adult life.	0.51
58	I believe that alcoholics are guilty of their healthcare problems.	0.40
61	Alcoholics are individuals who depend on alcohol for any and everything.	0.40
63	Alcoholism is an irreparable addiction.	
65	The alcoholic patients keep returning to the healthcare service with the same problems.	0.43
67	I consider alcoholic patients as the most difficult to deal with.	0.60
69	Alcoholics are patients never give feedback about the care they receive.	0.47
71	Alcoholics are difficult to make contact with.	0.50
73	I am afraid of approaching the problem of alcoholism with the patients.	0.45
75	I am afraid of the alcoholics' aggressiveness.	0.42
76	I feel frustrated when I work with alcoholics.	0.40
77	When the patient does not want to collaborate, it is better to quit trying to help.	0.50
78	I do not know how to lead the situation when I work with alcoholics.	0.40
79	It is necessary to restrain alcoholics to provide healthcare.	0.40
80	I believe that alcoholics overburden the nursing team.	0.40
81	I must take care of alcoholics, even if they do not want it.*	0.43
82	When alcoholics are conscious, they become lascivious.	0.52
83	When alcoholics come to the hospitals, they are already on their last legs.	0.43
84	I am angry when I work with alcoholics.	0.50
85	Alcoholic patients never accept what I tell them.	0.40
86	I see alcoholics as a lost cause.	0.50
87	Alcoholics are patients who do not cooperate with the treatment.	0.50
88	Alcoholics are difficult to treat.	0.43
89	Alcoholic patients seek care only at peripheral basic healthcare units.	0.40
90	Alcoholics do not take treatment seriously.	0.61
91	I would rather work with alcoholics than with other patients.*	0.60
92	Alcoholics do not perform well in any sector of their lives.	0.48
93	Alcoholics have no work.	0.40
94	Alcoholism is the loss of identity and morality.	0.40
95	Alcoholics have a precarious life situation.	0.40
96	Many alcoholics only want to enjoy life and are irresponsible.	0.40

* Positive items

Table 3 – Factor loadings of the items composing factors: 2 - Etiology; 3 - Disease; 4 - The social repercussions of using/abusing alcohol; 5 - Alcoholic beverages. São Paulo, SP, 2008

Item	Content	F2	F3	F4	F5
Ethiology					
02	Alcoholics are angry and aggressive.	0.40			
07	I believe that heredity influences alcohol abuse*	0.40			
12	Alcoholics seek a solution for their affective problems in drinking.	0.48			
17	I believe that undergoing a dysfunctional family situation leads to alcoholism.	0.55			
22	Alcohol is used as a form of escape.	0.43			
27	Shy or inhibited people have greater chances of developing alcoholism.	0.40			
32	I believe every alcoholic has unresolved issues.	0.46			
37	Something in the alcoholics' past drives them to drinking.*	0.45			
42	Lack of self-control leads to alcoholism.	0.42			
42	Lack of self-control leads to alcoholism.	0.42			
47	Social and economic problems trigger excessive drinking.*	0.56			
51	I believe depression leads to alcoholism.*	0.64			
55	Alcoholism is related to the individual's educational level.	0.40			
59	Alcoholics lack willpower.	0.40			
62	Social issues drive individuals to drinking.*	0.57			
64	People without a steady job develop alcoholism.	0.54			
66	Children of alcoholics tend to become alcoholics themselves.	0.41			
68	Dissatisfied people become alcoholics.	0.57			
70	Dissatisfied people abuse alcohol.	0.55			
72	I believe everyone who consumes alcohol is trying to escape from some problem.	0.57			
74	I believe alcoholics have financial problems.	0.55			
Disease					
03	Alcoholics are sick.		0.40		
08	I see that alcoholics have low self-esteem.		0.40		
13	Alcoholics are psychologically affected people.		0.49		
18	Alcoholics are individuals who cannot control their alcohol intake.		0.40		
23	Alcoholism is a disease.*		0.40		
28	The team needs special training to work with alcoholics.*		0.40		
33	Being aggressive with alcoholics will not work.*		0.40		
38	It is necessary to be careful when working with an alcoholic patient.		0.40		
43	Alcoholics must be sent to psychiatrists.*		0.40		
48	People drink to feel happier and less inhibited.*		0.53		
52	Alcohol is used as an escape valve.		0.57		
56	Alcoholics drink to escape from reality.		0.50		
60	Alcoholics are sick.		0.40		
The repercussions of using/abusing alcohol					
04	Alcoholics exaggerate, to the point of damaging their own life.			0.40	
09	I see alcoholics as marginalized people.			0.40	
14	Individuals who drink alcohol become disoriented.			0.48	
19	I believe alcohol hampers the mental functions.			0.65	
24	Alcoholism causes physical and psychic dependence.*			0.70	
29	Most alcoholics end up alone.			0.58	
34	Alcohol leads to madness and death.			0.55	
39	Alcohol alters the emotional state.			0.60	
44	Alcoholics drag friends and friends down with them.			0.46	
Alcoholic beverage					
5	I believe people have the right to drink if they want to.*				0.40
10	Alcoholic beverages are enjoyable and make people feel good.*				0.47
13	The use of alcoholic beverages is normal.*				0.43
20	I believe that drinking one shot of whiskey is considered as drinking socially.*				0.44
25	Beverages, in any amount, will make an individual become dependent.				0.39
30	Drinking moderately is not harmful.*				0.48
35	I am against using alcohol at any time.				0.43
40	Alcohol, in small amounts, is beneficial. *				0.40
45	Alcohol relieves the daily tensions. *				0.59
49	I am favorable to drinking moderately. *				0.59
53	Small amounts of alcohol can cause dependence.				0.48
57	There are people who know how to drink and know how to control themselves.*				0.40

* Positive items

DISCUSSION

Due to the lack of available instruments to verify the attitudes of nurses and other healthcare professionals towards alcohol, alcoholism and the alcoholics, as well as inadequacies in existing tools for use in Brazil, the study was performed to construct a measurement instrument for the theme, which would be able to cover the main attitude groups (moral, disease, etiologic, professional and human factors).

The scale, started with 225 items, was restricted to 96 statements in its final version, distributed into five factors, with a reduction of nearly two times and a half the initial amount. The researchers considered this result as ideal^(11,13).

The five factors in the final EAFAAA version, according to the initial objective of this study, aimed at building an instrument that could measure the main attitude groups, cover five different aspects of the object in question, i.e.: The alcoholic person, the work and the interpersonal relation with this patient; the etiology; the disease; the social repercussions of using/abusing alcohol and alcoholic beverages.

Although being initially conceived to measure the attitudes of nurses and other healthcare professionals, it was decided that the preliminary version of EAFAAA would be applied to a population of nursing students near graduation so that the items could be refined. This procedure was adopted to test the resulting scale in this public, due to the lack of such studies among nursing students⁽¹⁰⁾.

With the data obtained from this sample of students, the construct validation was started, performed through main component analysis with a varimax rotation. At this stage, 69 items with saturation under 0.40 were excluded. This exclusion criterion was adopted when considering that even items with factor loading 0.30, considered adequate to compose a factor, must be discarded in the process of building an instrument, since an item represents a factor well when its loading is equal to or higher than 0.50⁽¹³⁾. Moreover, with the exclusion of those items, reliability for all factors increased.

Considering that the process of instrument validation should involve several inter-related studies, aiming at empirical verification, through statistical tests, of the relation between the variables to be

measured⁽¹⁵⁾, the reliability index of the instrument was tested at two different times. One involved the whole scale (96 items), without divisions, and the other with each factor presented individually. The whole scale testing obtained an important reliability index (α) = 0.9068, which indicates that the scale seems to measure attitudes towards alcohol, alcoholism and the alcoholics, since such a value is considered satisfactory for the objectives of this type of scale⁽¹³⁻¹⁴⁾. When the reliability index of each factor is analyzed individually, satisfactory reliability indexes were likewise observed, i.e. equal or close to 0.90, except for factor 5, which presented an α coefficient = 0.4771, indicating the need for a better composition in order to increase its internal consistency.

The final version of EAFAAA consisted of items that were predominantly negative, i.e. 75% of the total. The prevalence of negative conceptions towards alcohol and alcoholism in the nurses' statements, which generated the items, can justify this fact. Being predominantly negative, 72 EAFAAA items are oriented positively, which means that, the higher the disagreement of the subjects towards the item, the more positive their attitudes are. Therefore, for the interpretation of data collected with this scale, the answers to the items should be calculated with inverted values, with the scores computed as follows: (1=5), (2=4), (3=3), (4=2), (5=1). Consequently, high scores show positive attitudes, while low scores tend to reflect negative attitudes. The EAFAAA differential over pre-existent instruments is that it allows for the evaluation of attitudes from two attributes that are not contemplated in any previous instrument, to the author's knowledge: attitudes towards interpersonal relations with alcoholic patients and attitudes towards the repercussions of alcoholism in the social and personal contexts. Still, regarding the advantages of the instrument presented herein, it can be said that it facilitates the application in Brazil, since it was built in the Portuguese language.

CONCLUSION

EAFAAA was shown to be reliable for the evaluation of attitudes towards the theme. The results, achieved through psychometric analysis, showed a

satisfactory reliability (accuracy) index and validity comprovement, for an instrument that has not been refined yet. As such, the resulting instrument can be considered good, and therefore capable of evaluating attitudes towards alcohol, alcoholism and the alcoholics. Its application is

desirable in samples consisting of nurses, as well as other healthcare professionals, since it was limited to students of the last semester in this study, characterizing the work as a preliminary exploration of the psychometric properties of the instrument.

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