SEÇÃO: OUTROS TEMAS

Teacher's attitudes: Revising factor structure and construct validity of the interaction with people with disabilities scale

Atitudes de professores: revendo a estrutura fatorial e a validade de construto da escala de interação com pessoas com deficiência

Actitudes de profesores: revisión de la estructura factorial y la validez de constructo de la escala de interacción con las personas con discapacidad

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Abstract: Teachers' positive interactions with people with disabilities improve their awareness and advocacy for inclusion, which is an important policy and community aim worldwide. Therefore, promote inclusive efforts in Angola as well as advances in research about measurement of attitudes we conducted a study to analyse the factor structure, validity, and reliability of the Interaction with People with Disability Scale (IDPS) for a sample of 1352 elementary teachers. Results of an exploratory factorial analysis showed a solution with factors of discomfort, coping, and vulnerability explaining 64.29% of the variance. A confirmatory factorial analysis suggested a model with good fit and convergent validity for discomfort and coping, and good evidence of discriminate validity for the three factors. We discussed how exploring attitudes towards people with disabilities with the IDPS can be useful when promoting activities for teachers training in inclusive education.

Keywords: inclusion; teachers; interaction-with-people-with-disabilities-scale; Angola; multivariate data analysis

Resumo: A existência de interações positivas entre professoras/es e pessoas com deficiência tende a aumentar a consciencialização e a advocacia acerca da inclusão, que é um objetivo político e comunitário em todo o mundo. Assim, para promover os esforços relativos à implementação de uma educação inclusiva em Angola, bem como avanços na investigação acerca de instrumentos que permitem medir atitudes, desenvolveu-se um estudo que teve por objetivo analisar a estrutura fatorial, a validade convergente e a validade discriminante da Escala de Interação com Pessoas com Deficiência (EIPD) com uma amostra de 1352 professores de 197 escolas do Ensino Primário. Os resultados da análise fatorial exploratória evidenciaram uma solução com três fatores designados de desconforto, coping e vulnerabilidade que explicam 64,29% da variância. A análise fatorial confirmatória sugeriu um modelo com bom ajuste e validade convergente para o desconforto e *coping*, e boa evidência de validade discriminatória para os três fatores. Conclui-se que o uso da EIPD pode ter um papel primordial no conhecimento das atitudes em relação às pessoas com deficiência e na promoção de atividades de desenvolvimento profissional relativas à educação inclusiva.

Palavras-chave: inclusão; professores; escala de interação com pessoas com deficiência; Angola; análise multivariada de dados.

Resumen: Las interacciones positivas de los profesores con personas con discapacidad mejoran su concienciación y la defensa de la inclusión, que es un objetivo político y comunitario en todo el mundo. Por lo tanto, con el objetivo de promover los esfuerzos para implementar la educación inclusiva en Angola, así como para avanzar en la investigación de instrumentos que midan las actitudes, se llevó a cabo un estudio para analizar la estructura factorial, la validez conver-

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gente y la validez discriminante de la Escala sobre la Interacción con Personas con Discapacidad (EIPD) con una muestra de 1352 profesores de la educación primaria. Los resultados del análisis factorial exploratorio muestran una solución con factores de incomodidad, empatía y vulnerabilidad que explicaban el 64,29% de la varianza. Un análisis factorial confirmatorio sugirió un modelo con buen ajuste y validez convergente para incomodidad y empatía, y buena evidencia de validez discriminante para los tres factores. Discutimos cómo la exploración de las actitudes hacia las personas con discapacidad con el IDPS puede ser útil en las actividades de sensibilización para los profesores en formación para proporcionar una educación inclusiva.

Palabras clave: inclusión; profesores; escala sobre la interacción con personas con discapacidad; Angola; análisis factorial.

Introduction

The government of The Republic of Angola has a policy of promoting inclusion, with the aim of valuing individual differences and empowering individuals. This policy agenda has been developed through endorsement of international conventions, strategies, and commitments, by launching a national legal framework, and increasing the involvement and contribution of civil society. Within the scope of these public policies, since 2012 the People with Disability Act aims to establish a global and integrated policy of prevention, qualification, rehabilitation, and full participation of people with disabilities in social life. To promote full participation in the community, the adaptation of jobs is also recommended, and the executive has set up employment guarantees (*Lei* [Law] No. 21/12, 2012). Also, in 2016 the Accessibility Act made substantial progress in eliminating barriers and building a global, coherent, and ordered accessibility system that provides people with disabilities or mobility impairment with guarantees of citizenship, and full participation and access to buildings, parks, roads, transportation and indoor and outdoor facilities (*Lei* [Law] n.° 10/16, 2016). Finally, at the educational level, a national special education policy for inclusion was adopted from 2017 onwards, based on philosophical and conceptual principals from national legal documents, as well as from international standards set out by the UNESCO and United Nations (*Decreto Presidencial* No. [Presidential Decree No.] 187/17], 2017). António et al. (2021) analysed the

course of the Angolan special education policy from the year of its implementation in 1979 and considered that it is both a specific and separate field in the education system and is based on a medical model of disability. Additionally, also evident in the political discourse is the intention to make the educational system more inclusive, despite the fact that there is still a long way to go (António et al., 2021).

In the above-mentioned legal context, there is a visible commitment to guaranteeing an inclusive society. Then, considering that teachers are citizens who play an important role in making young children, parents, and the civil sectors aware of, and active in advocacy, for an inclusive society, it would be important to understand the attitudes of this community when around someone with such significant challenges. Attitudes toward people with disabilities have a long and complex history (Kauffman & Hornby, 2020) and, as suggested by Sánchez et al. (2021), positive or negative attitudes have a direct influence on societal behaviour. In fact, attitudinal barriers may exclude people with disabilities from having equal opportunities in employment, education, social services, lifestyle, and overall quality of life (Brown et al., 2009; Myong et al., 2021). An appropriate measurement of this attitudes would support the use of research-based information to raise awareness throughout society, and specifically in connection with the country's incipient teacher training efforts. In fact, measuring public and professional attitudes to persons with disabilities has received much attention over the last four decades all over the world, being The Interaction with Disabled People Scale (IDPS) the most widely used and validated scale to measure levels of discomfort that an individual might feel when interacting with people with disabilities on the personal level (Wallymahmed et al., 2007). It was developed in Australia by the Community Disability and Ageing Program (Gething, 1993), and released in 1991 by Getting (Forlin et al., 1999), to overcome problems associated with administration and psychometric properties of other instruments, as well as to measures attitudes at

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a personal level (Gething, 1993). As underlined by Gething (1993, p. 291), it took in consideration that there is a contrast between the person's reactions "about the way they think people with disabilities should be treated by society (societal level) and their own personal reactions to interaction with people with disabilities (personal level)". The scale explores the motivations and emotions conside-red to underlie negativism (Gething, 1993), with a focus on the theoretical position that discomfort stemmed from a lack of familiarity or informa-tion, and uncertainty (Bania et al., 2020), or from general fear (Thomas et al., 2003). In summary, the IDPS items tap personal reactions related to a) fear of the unknown associated with being unsure of how to behave, or what to expect, when in front of a person with a disability; b) threat to security or to the view of the world as fair when in front of a perceived vulnerability of other or of oneself; and c) guilt, and aversion to difficulties

and vulnerability (Gething, 1993). The original IDPS consists of 20 items reflecting six factors named discomfort (items 9, 11, 12, 16, 17, and 18), coping/succumbing (items 1, 2, 3, and 13), perceived level of information (items 3, 6, 9, 10, and 12), vulnera-bility (items 7, and 20), coping (items 14, and 15), and a second vulnerability factor (items 4, and 5). Due to lack of consistent loading, items 8 and 19 were dropped from the initial version of the sca-le, producing a final one with 18 items (Gething, 1994). The internal consistency of the scale was assessed and it was obtained a Cronbach´s alfa coefficient between .74 and .86 (Gething, 1994). The psychometric properties of the IDP scale have been investigated in several societal contexts, but most of them failing to replicate the original 6-factor structure (see examples in Table 1). It must be underline that the only consistent factor has been the one labelled Discomfort.

TABLE 1 - *IDP FACTOR CHARACTERISTICS FOR DIFFERENT LANGUAGES AND SOCIETAL CONTEXTS*

Country	Study	Sample	Factor(s)/ Items
Australia	Iacono et al. (2009)	373 health & social work undergraduates	Discomfort/ 9, 11, 12, 17, 18
Australia	Tait & Purdie (2000)	1626 preservice education university students	Discomfort/ 6, 8, 9, 12 Sympathy/1, 2, 10, 13, 15 Embarrassment/ 16, 17, 18 Vulnerability/ 4, 5, 7 20
Australia and South Africa	Forlin et al. (1999)	2375 /475 pre-service teachers	Discomfort/ 11, 16, 17, 18 Sympathy/ 1, 2, 3, 13 Uncertainty/3, 6, 9, 12 Fear/ 7, 20 Coping/ 14, 15 Vulnerability/ 4, 5
Australia	Maclean & Gannon (1995)	343 health science, education, and business university students*	Discomfort*/ 9, 11, 12, 17, 18
Canada	Loo (2001)	231 management undergraduates	Not presented/findings not supporting a six- factor model
Greece	Bania et al. (2020)	87 health professionals	6, 9, 11, 12, 16, 17, 18
Pakistan	Yoshida et al. (2003)	591 subjects from the general population	Discomfort/ 6, 9, 11, 12, 17, 18, 20 Level of information/ 6,10, 17, 18 Vulnerability/ 4, 5, 15 Unnamed/ 14, 15 Unnamed/ 6, 19
Spain	Lobato et al. (2021)	523 subjects from the general population	Coping/Succumbing/ 1, 2, 4, 13 Discomfort/ 9, 11, 12, 17

Country	Study	Sample	Factor(s)/ Items
United Kingdom	Wallymahmed et al. (2007)	244 trained midwives	Discomfort/ 9, 11, 16, 17, 18 Knowledge & sensitivity/ 2, 3, 4, 6 Disability a misfortune/ 7, 13, 20 Rising to the occasion/ 1, 10, 12 Vulnerability/coping/ 5, 14, 15
USA	Thomas et al. (2003)	358 undergraduates	Discomfort/ 9, 12, 16, 17, 18 Empathy/ 1, 2, 3, 13, 15 Fear of disability/ 5, 7, 14, 20

Source: Martins & Garcia (2023)

Therefore, after taking into consideration the aforementioned Angolan context as well as the need for a valid instrument to measure attitudes toward people with disabilities in the country, the aims of the current study were twofold. The first one was to identify the factor structure of the IDPS for Angolan teachers, and the second aim was to determine the model that offers the best fit to the data of the IDPS for Angolan teachers, as well as its convergent and discriminant validity, and reliability.

Method

Sample

This study included 1352 teachers from 197 elementary schools in one large province in southwestern Angola (see Table 2), with an average age of 37.58 (SD = 6.94) years. Participants were split into two subsamples using a random sampling of 50% of all cases. One subsample was used for Exploratory Factor Analysis (EFA sample M Age = 37.61, SD = 6.70), and the other one was used for Confirmatory Factor Analysis (CFA sample M age = 37.56, SD = 7.17).

TABLE 2 - *SOCIODEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS*

Variables	Sample (N= 1352)		Sample EFA (n= 661)		Sample CFA (n=691)	
	Frequency	%	Frequency	%	Frequency	%
Gender						
Female	982	72.6	493	74.6	489	70.8
Male	370	27.4	168	25.4	202	29.2
Educational level						
Below bachelor's degree	700	51.8	332	50.3	362	53.3
Bachelor's degree	543	40.2	270	40.9	273	39.5
Above bachelor's degree	108	8.0	58	8.8	50	7.2
Years of teaching						
Less than 5	38	2.8	12	1.8	26	3.8
5-10	469	34.7	228	34.5	241	34.9
11-15	289	21.4	158	23.9	131	19.0
16-20	243	18.0	116	17.5	127	18.4
More than 20	313	23.3	147	22.2	166	24.0
Contact with disability						
Yes	1281	95.3	632	96.2	649	94.5

Source: Martins & Garcia (2023)

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Data Collection Instruments

It was used both a modified version of the 18 items of the IDPS, as designated and reported by Gething (1994) and Forlin et al. (1999), and a sociodemographic questionnaire. We started with a forward and backward procedure for translation of the IDPS into Angolan Portuguese. Then, two researchers met to discuss any issues in this translation, specifically related to the use of 'people-first language' and scientific terminology related to disabilities that was in use and well understood in the country. Finally, items were reviewed in a joint session with four Angolan teachers, who had extensive teaching experience and in-depth knowledge of the characteristics of the population from which the sample was selected. After that we conducted a pilot-test with a first version of the IDPS. We asked 50 regular-education teachers in Angola to fill in the IDPS and to write down comments related to the comprehension and terminology of each item. As a result of this pilot study, Item 16 could not be understood and was dropped, and item 14 was written in a positive way and not negative as in the original. Due to cultural issues, we decided that a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree) would be used, with a higher score indicating a greater level of uneasiness in social interaction with people with disabilities. Additionally, we renamed the scale. "Interaction with People with a Disability Scale," reflecting a 'people-first language' approach as in Forlin et al. (2001). In addition, each participant completed sociodemographic questions on age, gender, years as a teacher, professional qualifications, and level of contact with people with disabilities.

Procedures

After ethical approval from the scientific committee of one public university in Portugal to carry out the study, we obtained authorizations from representatives of the Angolan provincial governments, directorates, and participating teachers. The second author distributed and collected copies of the IDPS and of the demographic questionnaire in 197 regular schools. Each participant's consent was obtained after a presentation about the procedure involved with the data collection as well as with ethics. Participants completed the questionnaire and the demographic information individually, under neutral, untimed conditions and with no researchers present, with safeguarded confidentiality and anonymity. The return rate was about 93%.

Data Analysis

During data screening and preliminary analysis of the large sample, normality was tested with skewness and kurtosis values and "either an absolute skewness value ≤ 2 or an absolute kurtosis (excess) ≤ 4 was used as reference value for determining considerable normality" (Mishra et al., 2019, p. 70). Missing data were randomly existent and with exceptionally low percentage in extension, and those cases were deleted, as were outliers with z scores ≥ 4 identified with boxplots and case summary, as suggested by Hair et al. (2019). Before the analysis, a reverse-coding transformation was applied to items 10 and 15.

An exploratory factor analysis (EFA) using principal component analysis with orthogonal varimax rotation was conducted on a sample with a ratio of about 38 participants to 1 variable to be analysed. For EFA statistical adequacy we used an anti-imaging correlation matrix showing small partial or anti-image correlations, communalities of .50 and higher, a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the overall test and for individual items greater than .50, and a significant Bartlett's Test of Sphericity ($p < 0.05$) (Hair et al., 2019). A confirmatory factor analysis (CFA) was a way of testing how well the pattern of factor loadings of the measured variables represents the latent constructs of the obtained model in EFA. Considering the sample size and the number of observed variables, besides the overall chi-square goodness-of-fit test (χ^2) and the p value associated with it, the following Fit Indices and cut-off values were associated with a model that fits well, in line with Hair et al. (2019). First, the following absolute fit measures: the chi-square statistic divided by the degrees of

freedom (χ^2/df) less than 2.0 being considered very good, and between 2.0 and 5.0 acceptable; the Root Mean Squared Error of Approximation (RMSE) less than .07; the 90 percent confidence interval for RMSE and the Goodness-of-Fit Index (GFI) greater than or equal to .95; and the Standardized Root Mean Square Residual (SRMR), with the conservative cut-off value of .05. Second, the following increment fit indices were used: Comparative Fit Index (CFI), greater than or equal to .95, and Tucker-Lewis Index (TLI) greater than or equal to .90. Model modifications were conducted using the modification indexes and standardized residuals as guidelines to develop a better fitting (Hair et al., 2019). The final stage of the CFA involved the analysis of construct validity of the model with both convergent and discriminant validity (Hair et al., 2019). Convergent validity was evaluated in this study using the analysis of the size of factor loading (ij), the Average Variance Extracted (AVE) greater than or equal to .50, as well as the reliability indicators Cronbach's Alpha and Composite Reliability (CR) greater than or equal to .70. Discriminant validity was analysed with the Fornell and Larcker (1981) test considering that the AVE value for any two constructs is greater than the squared of the correlation estimates between these two constructs (Hair et al., 2019). Additionally, we looked to both the test of squared root of AVE for the factors being greater than the correlation estimates between these two constructs and MSV being less than the AVE (Gaskin et al., 2019). To perform factor analysis, we randomly split participants into two data sets (Lorenzo-Seva, 2021), with approximately 50% of all cases via SPSS with a seed set at 2000000. One dataset was used for exploratory factor analysis and the other for confirmatory factor analysis. All statistical analyses were undertaken in version 27.0 Statistical Package for Social Sciences, SEM AMOS, as well as in Gaskin et al. (2019) Master Validity Tool and AMOS Plugin.

Results

Descriptive Statistics

Table 3 presents the descriptive statistics for the answers of the teachers. We underline that on the one hand, variable 15 presents a value of one for the mode, and as this is a reversed variable, it shows that most teachers do agree and strongly agree that after frequent contact, they notice the person, not the disability. On the other hand, variable 1 presents a value of four for the mode, showing that most teachers agree that it is rewarding when they are able to help a person with a disability. Moreover, all distributions show acceptable skewness and kurtosis. Distributions of items 1, 2, 3, 6, and 13 present a negative sign for skewness, indicating fewer participants are easy then uneasy in social interaction, while the rest of the items present a positive sign, meaning that fewer participants are uneasy than at ease in social interaction.

TABLE 3 - *STATISTICS OF THE IDPS*

Variable	Mode	Mean	SD	Skewness	Kurtosis
1 (rewarding when help)	4.00	3.44	0.58	-0.45	-0.72
2 (it hurts me)	3.00	3.38	0.64	-0.88	0.97
3 (frustrated)	3.00	3.06	0.74	-0.57	0.31
4 (own vulnerability)	2.00	2.51	0.84	0.19	-0.58
5 (how I would feel)	2.00	2.45	0.77	0.61	-0.23
6 (little knowing)	3.00	3.23	0.61	-0.57	1.28
7 (grateful for no disability)	2.00	2.58	0.85	0.46	-0.83
9 (uncomfortable)	2.00	1.94	0.74	0.84	1.10
10 (aware of problems) *R	2.00	1.77	0.67	0.76	1.22

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Variable	Mode	Mean	SD	Skewness	Kurtosis
11 (staring at them)	2.00	1.97	0.67	0.72	1.40
12 (unsure about behaviour)	2.00	1.98	0.68	0.66	1.14
13 (admire)	3.00	3.11	0.70	-0.30	-0.44
14 (feel petty)	2.00	2.33	0.85	0.62	-0.22
15 (consider the person) *R	1.00	1.61	0.65	0.91	1.05
17 (afraid to look)	2.00	1.80	0.68	0.78	1.30
18 (brief contact)	2.00	1.84	0.68	0.61	0.74
20 (feel terrified)	2.00	1.93	0.71	0.58	0.49

Note. ***R reversed item**
Source: Martins & Garcia (2023)

Exploratory Factor Analysis

With the EFA sample we conducted an initial exploratory factor analysis using principal component analysis with orthogonal varimax rotation on the 17 items. Visual inspection of the anti-imaging correlation matrix shows small partial or anti-image correlations, and measure of sampling adequacy values of each individual variable in the main diagonal exceeding .69 which is considered middling (Hair et al., 2019). The overall Kaiser–Meyer–Olkin test was .842 which is meritorious (Hair et al., 2019), and the Bartlett's Test of Sphericity was significant (χ^2 (136) = 2934.75, p < 0.001), indicating that sufficient correlations exist among the variables to proceed (Hair et al., 2019). Several recalculations resulted in the remo-val of items 6, 13, 14 and 20 due to communalities lower than 0.50, and item 15 due to problematic cross loading (Hair et al., 2019) evaluated by the 1.2 ratio of the squared loadings. Therefore, recalculating all the analysis a final KMO = .782 and all-measure of sampling adequacy values for individual items greater than .68 were obtained, as well as significant Bartlett's test of sphericity (χ^2 (45) = 1947.095, p < 0.001). The scree plot shows inflections that justify retaining three factors, which have eigenvalues over Kaiser´s criterion of 1 and in combination variance explained of 64.29%. Table 4 shows the factor loading after rotation of each variable, communalities, and factor names with variance explained.

TABLE 4 - *FACTOR ANALYSIS OF THE IDPS*

Factors and variables	Factors loadings			Communalities
	1	**2**	**3**	
Discomfort (30.94% of variance)				
9 (uncomfortable)	**.73**	-.01	.07	.54
11 (staring at them)	**.77**	.004	.19	.63
12 (unsure about behaviour)	**.80**	-.03	.09	.66
17 (afraid to look)	**.78**	-.06	.09	.61
18 (brief contact)	**.76**	-.19	.09	.62
Coping (18.64% of variance)				
1 (rewarding when help)	-.25	**.73**	.19	.64
2 (it hurts me)	-.11	**.84**	.15	.73
3 (frustrated)	.12	**.76**	-.14	.61

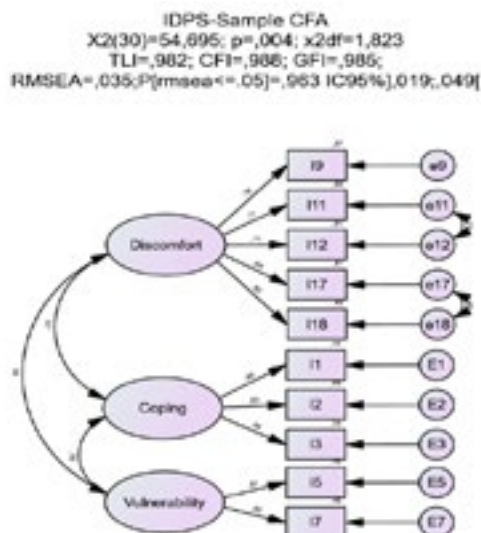| Factors and variables	Factors loadings			Communalities
	1	2	3	
Vulnerability (14.70% of variance)				
5 (how I would feel)	.17	.14	**.79**	.67
7 (grateful for no disability)	.16	-.002	**.84**	.73

Source: Martins & Garcia (2023)

Table 4 displays loadings exceeding .73 in most of the cases and no significant cross-loading, which is considered indicative of a well-defined structure for the sample. These analyses show that the six-factor model do not fit the Angolan data.

Confirmatory Factor Analysis

The four-factor model fit was evaluated using confirmatory factor analysis on data of the CFA sample (see Figure 1).

Figure 1 - Confirmatory Factor Analysis

IDPS-Sample CFA
X2(30)=54,695; p=,004; x2df=1,823
TLI=,982; CFI=,988; GFI=,985;
RMSEA=,035;P[rmsea<=,05]=,963 IC95%],019;,049[

The overall model χ^2 (30) = 54.70 is significant with p = .004, which is to be expected given the large sample. Considering four absolute fit measures we indicate that the value for RMSEA is .035, which is low and is below the .7 guideline for a model with 10 measured variables and a sample size of 691. Using the 95 percent confidence interval for this RMSEA, we concluded that the true value of RMSEA is between .019 and .049. Thus, even the upper bound of this index is low. Next, we observed the SRMR with a value .025, below even the conservative cut-off value of .05. The third absolute fit statistic is the χ^2/df with an acceptable value of 1.82. The last one is the GFI with a value of .985, which is indicative of a good fit. Moving to the incremental fit measures we obtained a CFI with a value of .988 and a TLI with a value of .982, both exceeding cut-off values for a good model fit. Adding the correlation among errors (e11 and e12, e17 and e18) improved the overall model fit. The CFA results suggest that this IDP measurement model provides a good fit. It is thus suitable to proceed to further examination of the results related to construct validity and reliability.

Convergent and Discriminate Validity

Results on testing for convergent validity showed that all items except item 3 (coping) presented standardized loading estimates higher than .5 ($\lambda_{ij} \geq .5$). Item 3 presented a factor loading of

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.49 and so more of the variance is error variance and not explained variance. The model presented an AVE of less than .5 in each of the three factors that is an indicator of lack of convergent validity. The last indicator of convergent validity is reliability. Cronbach's alpha and CR presented good values for discomfort and coping but not for vulnerability. Following recommendations by Gaskin et al. (2019), items 3 and 18 were removed to accomplish convergent validity for discomfort

and coping. Finally, all factors revealed good evidence of discriminate validity, when considering that the AVE value for any two constructs is greater than the inter-construct squared correlation estimates between these two constructs (values above the diagonal in Table 4). This is also observed when we used the test of squared root of AVE being greater than the correlation estimates between these two constructs or MSV being less than the AVE (see Table 5).

TABLE 5 - *CONSTRUCT VALIDITY, SQUARE ROOT OF AVE, AND MATRIX OF CORRELATIONS AND SQUARED CORRELATIONS BETWEEN FACTORS*

Factors	Alfa	CR	AVE	MSV	(D)	(C)	(V)
(D) Discomfort	.820	.814	.523	.233	**.723**	.055	.233
(C) Coping	.707	.707	.547	.055	-.234**	**.740**	.046
(V) Vulnerability	.597	.600	.429	.233	.483**	.214*	**.655**

Note. Significance Level: * p < 0.010 ** p < 0.001. The Diagonal elements in bold are squared root of AVE, values above these diagonals are squared correlations, and below are correlations estimates among factors.
Source: Martins & Garcia (2023)

Discussion

The findings of this study extended international scientific knowledge of the factor structure of the IDPS for the Portuguese language and for a sample of regular teaches in Angola. Results of the exploratory factor analysis suggested that the data from the sample EFA was best represented by a 10-item structure within three factors, unlike the 18 items and the six factor structure of the original scale. Factor 1 (discomfort) consisted of items 9, 11, 12, 17, and 18. Generally, it captures the degree to which interacting with a person with a disability results in uncomfortable, unsure, afraid, and quick contact or the fact that they cannot help staring at them. Discomfort was considered as the main and the most stable factor, which is in line with the findings of previous English versions of the scale (Forlin et al., 1999; Iacono et al., 2009; Maclean & Gannon, 1995; Tait & Purdie, 2000; Thomas et al., 2003; Wallymahmed et al., 2007), as well as Spanish (Lobato et al., 2021), Greek (Bania et al., 2020), and Urdu versions of it (Yoshida et al., 2003). Factor 2 (coping) consisted

of items 1, 2, and 3, and captures the level to which the participants feel rewarded when able to help, frustrated when they do not know how to help, and hurt when see that people with disabilities want to do something and cannot do it. Finally, factor 3 (vulnerability), contained items 5 and 7, and captures the perception of own vulnerability, related to the feelings of a potential disability, and the gratefulness for not having it. Similarly, it replicated the study conducted by Thomas et al. (2003), who found a three factors model within 14 items when analysing attitudes of undergraduate students from the USA towards individuals with disabilities. The items included in the three factors in our sample were included in the same factors in Thomas et al. (2003). Furthermore, results of the confirmatory factor analysis advanced our knowledge related to the model that offers the best fit to the data of the IDPS for Angolan teachers, as well as its convergent and discriminant validity and reliability. The measurement of the IDPS three-factor model provided a good fit, and convergent validity for discomfort

and coping after elimination of items 18 and 3. There is a lack of convergent validity for coping, which means that for this factor "on average more error remains in the items than variance held in common with the latent factor upon which they load" (Hair et al., 2019, p. 676). Although reliability values were good for discomfort and acceptable for coping and vulnerability, we can argue that Cronbach's alpha is influenced by the number of items (Field, 2013) and these factors have four, and two items, respectively. All factors presented good evidence of discriminate validity, showing that these constructs are truly distinct from each other, capturing some phenomena others do not (Hair et al., 2019).

These findings suggest that major developmental work is required in our model. First, we need to change the wording of item 16 in order to include it in the analysis, and on the fact that items 6, 13, 14, and 20 failed to load on any of the three factors due to small communalities and that item 15 presented problematic cross loadings. Secondly, in order to improve convergent validity in discomfort and coping items 18 and 3 were removed, and to improve composite reliability on vulnerability, item 7 needs to be removed. In this way, as the grouping of the factors has resulted in two factors that contain only two items each, additional items should be changed or further developed, so factors are represented by at least five items each. In summary the final IDP has the following factor structure: It consists of eight items reflecting three factors named discomfort (items 9, 11, 12, 16, and 17), coping (items 1, and 2), and vulnerability (items 5, and 7). Thus, adjustment and further evaluation of some items need to be considered to improve psychometric soundness for future use. These results corroborated previous conclusions that the IDP requires refinement in terms of its items and that the factor structure is unstable (Bania et al., 2020; Forlin et al., 1999, Iacono et al., 2009; Loo, 2001; Wallymahmed et al., 2007). Despite this need IDP does provide a measure of attitudes towards disability that are consistently positively associated with education or experience with disability (Wallymahmed et al.,

2007), which are two characteristics of our sample. This study has key implications for inclusion, in a way that, as suggested by Loo (2001), the IDPS can be especially useful for purposes other than decision-making, as such use does not rely on strong psychometric properties of the measure, although that is desired. This means using the IDPS to stimulate discussion, critical reflection, and self-awareness within organized informational sessions in municipal members' meetings, civil associations that advocate for people with disabilities, and within teacher pre-service and in-service training and support. This is particularly important for today's teacher training for inclusion provided by the National Institute of Special Education, as well as for the training that is beginning to be undertaken in the Angola university system with the introduction of curricular units related to a successfully inclusive education for students who have disabilities, are at risk or with gifted skills, and their families. A measure of uneasiness during interactions with people with disabilities provides a starting point or a direction towards enriching areas of greatest concern (Forlin et al., 2001), as well as revealing how perceptions change in response to a specific training (Forlin et al., 1999; Iacono et al., 2009; Tait & Purdie, 2000).

Limitations and Future Directions

We identified three limitations in the scope of this research. First, the nature of the sample limits generalising the results to the country. Therefore, we recommend a randomly selected sample including teachers from the 18 municipalities of the country, and from one. A second limitation of the study is the lack of other instruments that might serve as a gold standard measure for exploring perceptions of people with disabilities that have previously been validated into Angolan Portuguese. Third, lack of experience in participating in research, and of the content of the items in the scale, produced participants' curiosity regarding the study and generated motivation for taking part in it, but may have introduced biased answers due to desirable responding. Two future research implications from this study are derived.

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It would be an asset to continue to improve this measurement as well as developing others that are not self-reported and reflect behaviours and actions, as suggested by Thomas et al. (2014). Considering the commitments made at national and international levels throughout the years, public policies have sought to create the conditions for implementing the civil, political, educational, economic, social, and cultural rights of people with disabilities enshrined in the Angolan legal system and in international human rights legal instruments. In particular, this research has generated findings that have practical implications for assisting in facilitating preservice and in-service teachers' training, and public awareness campaigns, promoting high quality in services, positive attitudes, accessibility, and the latest scientific evidence for the benefits of people with and without disabilities in the Republic of Angola.

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