Article

Self-Report Scale of Adaptation – EDAO-AR: Evidences of Validity[1]

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Abstract: The Scale of Adaptation-Revised (EDAO-R) provides a measure of the adaptive efficacy, understood as the degree of success in coping with the vicissitudes of life. Its assessment is based on clinical interview material. The study aimed at obtaining evidence of the validity of a self-report version of EDAO-R, identified as EDAO-AR. Items were developed to assess the quality of adaptation of two sectors of the personality: Affective-Relational (A-R) and Productivity (Pr). Sample of 237 outpatients and caregivers. We obtained evidence of validity based on internal structure (internal consistency, factor analysis, cluster analysis), and validity based on external variables (relationship between EDAO-AR and the Assessment Symptoms Scale-40/EAS-40). Results showed good internal consistency and three dimensions for both sectors: focus on the problem situation, focus on interpersonal relationships and focus on self. Was obtained, as expected, negative correlations between EDAO-AR and EAS-40. Suggestions were made for the second version of the scale.

Keywords: psychological assessment, psychodiagnosis, clinical psychology

Escala Diagnóstica Adaptativa Operacionalizada de Autorrelato – EDAO-AR: Evidências de Validade

Resumo: A Escala Diagnóstica Adaptativa Operacionalizada-Revisada (EDAO-R) fornece medida da eficácia adaptativa, entendida como o grau de sucesso obtido no enfrentamento das vicissitudes da vida. Sua avaliação baseia-se em material de entrevista clínica. O estudo teve por objetivo obter evidências de validade da versão de autorrelato da EDAO-R, ou EDAO-AR. Foram desenvolvidos itens para avaliar a adequação da adaptação de dois setores da personalidade: Afetivo-Relacional (A-R) e Produtividade (Pr). A amostra foi composta por 237 pacientes ambulatoriais e acompanhantes. Houve evidências de validade baseada na estrutura interna (consistência interna, análise fatorial, análise de agrupamentos) e validade baseada em variáveis externas (relação entre EDAO-AR e Escala de Avaliação de Sintomas-40/EAS-40). Os resultados apontaram boa consistência interna e três dimensões para ambos os setores: foco na situação problema, foco na relação interpessoal e foco no eu. Obteve-se, conforme esperado, correlações negativas entre a EDAO-AR e EAS-40. Foram feitas sugestões para a segunda versão da escala.

Palavras-chave: avaliação psicológica, psicodiagnóstico, psicologia clínica

Escala de Auto-Relato de la Adaptación – EDAO-AR: Evidencias de Validez

Resumen: La Escala de la Adaptación - Revisada (EDAO-R) ofrece medida de la eficacia de la adaptación, entendida como grado de éxito ante las vicisitudes de la vida. Su evaluación se basa en material de entrevista. La finalidad fue obtener evidencias de validez de una versión de auto-relato de la EDAO-R (EDAO-AR). Los ítems fueron desarrollados para evaluar la calidad de la adaptación de dos sectores de la personalidad: Afectivo-Relacional (A-R) y Productividad (Pr). La muestra abarcó a 237 pacientes de ambulatorios y cuidadores. Se obtuvo evidencias de validez basada en la estructura interna (consistencia interna, análisis factorial, conglomerados) y en variables externas (relación entre EDAO-AR y Escala de Evaluación de Síntomas-40/ EAS-40). Resultados mostraron buena consistencia interna y tres dimensiones para ambos sectores: foco en la situación problema, foco en las relaciones interpersonales y foco en el yo. Se obtuvo, conforme esperado, correlaciones negativas entre EDAO-AR y EAS-40. Se hicieron sugerencias para una segunda versión.

Palabras clave: evaluación psicológica, psicodiagnóstico, psicología clínica

Developed by Ryad Simon, the Scale of Adaptation-Revised (EDAO-R) (Simon, 1997, 2005) has been useful in different situations and contexts as a procedure to aid the assessment of individuals' adaptive resources and to indicate psychotherapies (Enéas & Yoshida, 2012; Yoshida, Enéas, & Santeiro, 2010; Yoshida & Rocha, 2007). It is based on the view that adaptation is the result of a continuous and permanent process of individuals in coping with vicissitudes

and in the search to preserve life. For that, individuals should be able to maintain their physical and psychological integrity (inner environment) through responses to the outer world that change them (Simon, 1989). The degree of success with which one achieves this objective is considered a measure of one's efficacy of adaptation.

The assessment of the EDAO-R is based on material that originates from a clinical interview that takes into account the individual's adaptive responses to each of the following areas of personality: Affective-Relational (A-R); Productivity (Pr); Sociocultural (S-C) and Organic (Or). The A-R area corresponds to the individuals' set of feelings, attitudes and actions in the inter- and intrapersonal spheres;

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The Pr refers to feelings, attitudes and actions related to one's primary occupational, artistic, philosophical or religious activities; the S-C refers to one's social context, values, and customs accruing from culture; and Or corresponds to body functioning and self-care, sleeping, sex and clothes (Simon, 1989). The assessment of responses to each area enables a general classification of adaptive efficacy. For that, the responses are examined according to three criteria: degree of satisfaction they provide to the individual; the extent to which they provide a solution for the situation faced; and degree to which they are compatible, or incompatible, with the individual's cultural standards and values. When these three criteria are met, the area's quality of adaptation is considered to be adequate; if only two of these two criteria are met, quality of adaptation is poorly adequate; and if only one criterion is met, it is considered to be very poorly adequate (Simon, 1989). In this process, only scores of the A-R and Pr areas are considered to be more relevant in determining an individual's adaptive configuration. Only the qualitative aspect is evaluated in the remaining areas (Simon, 1997, 2005).

The need for individual interviews to assess the EDAO-R in situations when there is not enough time is a fact that limits the use of this instrument. Seeking to overcome such limitations and provide an alternative for professionals and researchers, we developed a self-reported version of the EDAO called Scale of Adaptation-Self-Report (EDAO-AR).

Based on the criteria proposed by Simon (1989) to assess one's adaptive efficacy, items were created to express problem situations related to the A-R and Pr areas, which are considered to be more relevant in determining adaptive configuration, and are quantitatively assessed through the EDAO-R. As alternatives to answers to the items, we proposed adaptive solutions divided according to different levels of adequacy: adequate, poorly adequate, and very poorly adequate. The set of items of each of the areas was considered to be an independent instrument; each was characterized as a scale to assess one of the dimensions of the adaptive efficiency construct. This procedure was used based on theoretical reasons but also due to practical reasons. It is important to keep in mind that in the assessment of the individuals' general adaptive configuration, the adaptive responses of each area were treated separately from the theoretical perspective, even though there is a hierarchical relationship between them. That is, even though the A-R area plays a central role and the Pr area plays a secondary role in one's ability to adapt (Simon, 2005), each was assessed in relation to a set of answers concerning that sphere of operation. Moreover, the scores attributed to each level of adequacy are weighted according to the area's relative value for general adaptive efficiency. From a practical point of view, while in the EDAO-R the interviewer is the one who decides what belongs to each area based on the information provided by

the individual over the course of the clinical interview, in the EDAO-AR, there is a set of items clearly configured to assess the adequacy of each of the area's adaptation.

Based on the preceding discussion, this study's objective was to obtain evidence of validity of the self-reported version of the EDAO-R, that is, the EDAO-AR.

Method

Participants

A convenience sample was composed of 237 patients and their respective companions cared for in the outpatient clinic of a general hospital and psychology clinic of a Catholic university in the state of São Paulo. Of these, 76% were women, 23% were men, while 0.4% did not report their sex, aged between 18 and 84 years old ($M = 44.4$; $SD = 14.3$). In regard to marital status, 58% were single, 26% married, 11% were divorced, and 4% were widowed. In terms of education, 31% had not completed elementary or middle school, 11% had completed middle school, 13% had not completed high school, 31% had completed high school, 9% had attended some college, 13.5% had a bachelor's degree and 3% did not report such information.

Instruments

1) *Scale of Adaptation-Self-Report (EDAO-AR)*: Designed to measure the quality of the adaptive efficiency of patients from community outpatient clinics and general hospitals. After expert-rater analysis (at least 80% agreement) and semantic analysis performed by patients and their companions from a psychological clinic, the scale consisted of 47 items divided into 28 items to assess the quality of adaptive efficiency of the A-R area and 19 for the Pr area. The answers to the items were weighted according to the criteria proposed by Simon (1997). In the A-R area: 3 (adequate), 2 (poorly adequate); and 1 (very poorly adequate). In the Pr area: 2 (adequate), 1 (poorly adequate), and 0.5 (very poorly adequate). There may be more than one corresponding answer for each item at a level of adaptive quality, while the respondent is required to check only one of the alternatives.

2) *The Assessment Symptoms Scale-40 (EAS-40) (Laloni, 2001)*: Adapted from the Symptom Checklist – 90 – Revised (SCL-90-R) (Derogatis, 1994) for the Brazilian clinical population of general hospitals. It is composed of 40 items that measure psychological symptoms according to four dimensions: psychoticism (F1), obsessive-compulsive (F2), somatization (F3), and anxiety (F4). The answers present three levels of intensity of symptoms: zero – no symptoms; 1 – mild symptoms; and 2 – severe symptoms. Assessment is performed through attaining the arithmetic average of the scores of each dimension and the total score. The higher the score, the more severe the symptoms represented by the dimension. A score of 1 was chosen as the

cut-off point for each of the dimensions (Yoshida, 2008). Research shows that the scale presents very good internal consistency, with Cronbach's alpha coefficients (α) between .73 and .88 for patients from general hospitals (Laloni, 2001) and from .80 to .93 in samples of college students (Yoshida & Silva, 2007).

Procedure

Data collection. The participants were recruited in the waiting rooms of the psychology clinic or one of the outpatient clinics at the general hospital maintained by the university. Data were collected individually and participation was voluntary. The participants answered the instruments in the waiting room itself. For that, an assistant researcher (undergraduate student properly trained for the task) explained the study's objectives and nature of the task. After agreeing to participate and signing free and informed consent forms, the participants were invited to sit in a more separated area of the room and the assistant researcher applied the two assessment instruments, reading each of the items and each of the answers. Whenever a respondent showed interest in talking further about the items, s/he was asked to stay on task with the instrument. The order of application of the instruments was alternated among the participants and time of application ranged from 40 to 90 minutes; most sessions took about 60 minutes.

Data analysis. Measures of evidence were obtained based on internal structure and on relationships with external variables (Primi, Muniz, & Nunes, 2009). To obtain evidence of validity based on the internal structure, the following were used: internal consistency analysis, item-total correlation, MSA indexes, exploratory factor analysis, and cluster analysis. In regard to evidence of validity based on external variables, the following were investigated: degree of correlation between the EDAO-AR and the Assessment Symptoms Scale-40 (EAS-40)(Laloni, 2001), which measures the severity of psychopathological symptoms. The hypothesis was that the measures of both the instruments would present negative association among them. That is, greater adaptive efficiency was expected to be associated with less severe psychopathological symptoms and vice-versa.

Ethical Considerations

This study was approved by the Institutional Review Board at PUC-Campinas (Process No. 720/09) regulating research with human subjects.

Results

The A-R scale, composed of 28 items presented very good internal consistency (α = .826). In general, item-total correlations were also high. Only items 6, 7 and 24 presented correlations below .2 and slightly impacted the Cronbach's

alpha. When these items were excluded, alpha was .831, indicating a negligible improvement of the scale's internal consistency. The Measure Sampling Adequacy (MSA) index was also used. The results showed 11 items with excellent indexes (> .8), 14 with good/medium indexes (between .7 and .8), two items with weak indexes (between .6 and .69) and only one with a poor index (between .5 and .59). The items with weak indexes were items 6 and 7, and item 24 was the one with a poor index.

The number of potential answers for each item of the EDAO-AR ranged from a minimum of three to a maximum of five alternatives. All of them obtained a minimum of 80% inter-rater agreement ($n = 6$), which suggests these are good representatives of the constructs intended to be measured (Pasquali, 1999, 2003). It was, however, opportune to verify whether the participants would tend to answer the questions according to the attributions of intensity based on theory. For that, hierarchical cluster analysis was performed (Carvalho, 2008). Dice's distance and Ward's linkage methods were the parameters used in the analysis. Ward's linkage method was the most frequently used because it produces more compact groups with well-distributed sizes. Automatic truncation was used to determine the number of groups. Cluster analysis classifies objects so that each object is similar to each other object in the cluster based on a set of defined characteristics (Carvalho, 2008; Hair, Anderson, Tatham, & Black, 2005).

XLSTAT 2011 was the statistical software used in this study. The objects classified were the items and the characteristics were the participants' answers. The clusters generated by the analysis of responses to the A-R scale showed high internal homogeneity (within the group) and low external homogeneity (between groups). The results were grouped in Table 1, since the reproduction of the dendogram (generated by the software analysis) would make it difficult to visualize the distribution of variables. In Table 1, each item is represented by the letter Q (question) followed by the number of the item and by the level of adequacy of the adaptive response. For example, Q1-3 represents the response alternative adequate to item 1. Items that contained more than one alternative answer from a certain level were differentiated among them, with a letter added at the end. For instance, Q12-3 and Q12-3-b, indicates there were two response alternatives adequate for item 12.

Table 1 shows that the items theoretically scoring a 3 were almost all clustered in the same group (cluster 1). The only exception was item 7, grouped in cluster 3. Most of the answers composing cluster 2 were considered poorly adequate (theoretically scored as 2s). For responses of the same intensity (for instance, Q1-2 and Q1-2b), this clustering is useful in choosing the one most similar to the remaining with the same intensity. For example, the answer Q1-2 was more similar than Q1-2b to the remaining questions theoretically scored 2.

Table 1
Results from the cluster analysis of the scale A-R (n = 101)

Cluster 1 (*n* = 29)	Cluster 2 (*n* = 24)	Cluster 3 (*n* = 48)	
Q1-3	Q1-2	Q1-2b	Q17-2
Q2-3	Q2-2b	Q1-1	Q17-1
Q3-3	Q3-2	Q2-2	Q18-1
Q4-3	Q4-2	Q2-1	Q19-1
Q5-3	Q5-2	Q3-1	Q19-1b
Q6-3	Q6-2	Q4-1	Q20-2
Q7-2	Q7-2b	Q5-1	Q20-1
Q8-3	Q8-2	Q5-1b	Q20-1b
Q9-3	Q9-2	Q6-1	Q21-1
Q10-3	Q9-1	Q7-3	Q22-1
Q11-3	Q11-2	Q7-1	Q22-1b
Q12-3	Q11-2b	Q8-1	Q23-1
Q12-3b	Q13-2	Q10-2	Q23-1b
Q13-3	Q14-2	Q10-1	Q24-2
Q14-3	Q15-2	Q10-1b	Q24-1
Q15-3	Q18-2	Q11-1	Q25-1
Q16-3	Q19-2	Q12-2	Q25-1b
Q17-3	Q21-2	Q12-2b	Q26-1
Q18-3	Q22-2	Q12-1	Q27-1
Q19-3	Q22-2b	Q13-1	Q28-2
Q20-3	Q23-2	Q14-1	Q28-1
Q21-3	Q25-2	Q15-2b	Q28-1b
Q22-3	Q26-2	Q15-1	Q28-1c
Q23-3	Q27-2	Q16-2	
Q24-3		Q16-1	
Q25-3			
Q26-3			
Q27-3			
Q28-3			

Most of the answers selected in cluster 3 were theoretically scored as 1s. However, more levels of adaptive responses were observed from the same item within this cluster (underlined in Table 1). The result of this same cluster for the different answers of the same item indicates a greater similarity in these responses. As an example, item 10 is mentioned, which had the same answer alternatives of Q10-2, Q10-1 and Q10-1b grouped in cluster 3. The same occurred for the items 9, 12, 16, 17, 20, 24 and 28. After assessing the consistency criteria, item-total correlations and MSA indexes, and cluster analysis, items 6, 7 and 24 were excluded from subsequent analysis because they presented higher failures of the criteria assessed. In regard to the remaining items, they were submitted to factor analysis before any decision was made.

To perform the factor analysis, it is recommended that the size of the sample be larger than at least five times the number of variables/items and the optimal size is a proportion of ten to one, a recommendation we fully complied with in this study (*n* = 237, 28 items) (Laros, 2005;

Pasquali, 1999, 2003). Bartlett's sphericity test (*p* < .001) and measure of sampling adequacy (KMO) (.792) were performed to determine the sample's adequacy (Gouveia, Santos, & Milfont, 2009). Both results were positive for the construction of the model.

In accordance with the latent root criterion (Eigen values greater than one), nine factors were selected. The percentage of explained variance for the nine first factors was 60.0%. Principal Component Analysis was the extraction method used and Varimax rotation was employed. Varimax rotation (orthogonal) does not permit correlation among the extracted factors. Internal consistency per factor indicated a very low consistency for one of the factors (factor 8, α = -.061) and another two factors were composed of a single question only (factors 5 and 9). Another problem observed in the extraction of the nine factors was the large number of cross-loadings, that is, items with high loadings in more than a factor. In regard to the criterion *scree plot*, it generally results in more factors compared to the latent root criterion, which is not a feasible solution in this situation. As an alternative solution to the problem, the percentage of explained variance was considered and was the *a priori* criterion in the definition of the number of factors to be extracted.

The possibility of extracting six factors was initially considered, however, the internal consistency of one of the factors was too low (.164) and the cross-loadings were still too high. The percentage of explanation for the extraction with six factors was 47.4%. The solution with five factors presented good internal consistency, or at least, satisfactory internal consistency, for all the factors (α between .420 and .669). The percentage of explanation for the extraction of five factors was 42.8%. Note that there were various cross-loadings for questions 20, 21 05, 19, 27, 16 and 13. A theoretical solution to attempt to reduce the cross-loadings would be to perform other type of rotation. Since the Varimax rotation is orthogonal, the Promax oblique rotation was used, though questions 13, 05, 20, 16, 19 and 27 still kept high cross-loadings. The extraction with four factors started to make more theoretical sense, however, factor 4 was still poorly represented, and did not appear to be actually a fourth dimension of the construct. Finally, the solution with three factors, even though it presented a much lower percentage of explanation (32.5%), presented factors very consistent with the theory determined *a priori*. The three dimensions that emerged comprised three facets involved in the issue of adaptation: (1) situation to be faced; (2) interpersonal relationship or the other and (3) the individual's affective and material needs (the self). Yet, questions 09, 17, 23 and 26 were excluded either due to their high cross-loads or because they did not theoretically align with the factors generated. Items 1, 2, 3, 4, 5, 8, 10, 11,12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 25, 27 and 28, the loadings of which are presented in Table 2, were ultimately retained. The final internal consistency of the items in the A-R area was .810. The alpha in factor 1 was .704, equal to .689 in factor 2, and .532 in factor 3.

Table 2
Factor loadings rotated by the promax method (three factor) of subscale A-R (n = 237)

Item	Factor 1	Factor 2	Factor 3
01			.409
02		.431	.378
03		.612	
04			.459
05			.436
08		.354	-.311
10	.483		
11		.503	
12		.448	
13			.632
14	.302		.510
15	.445		.340
16	.467		
18	.765		
19	.536		
20	.498		
21		.695	
22	.477		
25			.498
27	.546		
28		.548	

The scale's internal consistency assessment of the Pr area, composed of 19 items, was considered very good (α = .816). In general, the item-total correlations were high. The lowest correlation was observed for item 36 (.202), however, its exclusion had virtually no affect on the instrument's internal consistency (α = .817).

The recommendation of the minimum relationship of five participants per item to perform factor analysis was fully met in this scale (*n* = 237 and 19 items) (Laros, 2005; Pasquali, 1999, 2003). The results of Bartlett's sphericity test (*p* < .001) and the KMO (.809) were positive for the construction of the model. Additionally, the results of the MSA index indicated 11 items with excellent indexes (> .8), six items with good/median indexes (between .7 and .8), and two items with poor indexes (between .6 and .7). None of the items presented a poor MSA. The two items with poor indexes were items 36 and 38.

Similar to the A-R scale, we verified whether the participants would tend to answer the items according to the theoretical attributions of intensity of responses. According to the results of the cluster analysis (Table 3), the answers theoretically scored 2 (adequate) were grouped into the same cluster (cluster 1). Most of the response alternatives that composed cluster 2 were considered poorly adequate (theoretically scored 1). For the items with two answers with the same level of adequacy (for instance, Q44-1 and Q44-1b), the alternatives that were most similar to the remaining should be withdrawn from the second version of

the EDAO-AR. In this case, Q44-1b was the most similar to those with a theoretical score of 1. Most of the responses selected for cluster 3 were theoretically scored 0.5 and were very poorly adequate. Nonetheless, similar to the A-R area, answers with more levels of adequacy of the same item within this group were observed (underlined in Table 3). Items 31, 32, 33, 40, 41, 42, 44 and 45 were the ones that presented answers theoretically different as being similar.

Table 3
Results from the cluster analysis of the scale Pr (n = 69)

Cluster 1 (*n* = 19)	Cluster 2 (*n* = 18)	Cluster 3 (*n* = 32)	
Q29-2	Q29-1	Q29-0.5	Q41-1
Q30-2	Q30-1	Q30-0.5b	Q41-0.5
Q31-2	Q31-1	Q30-0.5	Q41-0.5b
Q32-2	Q32-1	Q31-1b	Q42-1
Q33-2	Q33-1	Q31-0.5	Q42-0.5
Q34-2	Q34-1	Q32-1b	Q43-0.5
Q35-2	Q35-1	Q32-0.5	Q43-0.5b
Q36-2	Q36-1	Q33-1b	Q44-1
Q37-2	Q37-1	Q33-0.5	Q44-0.5
Q38-2	Q38-1	Q34-0.5	Q45-1b
Q39-2	Q39-1	Q35-0.5	Q45-0.5
Q40-2	Q43-1	Q35-0.5b	Q46-0.5b
Q41-2	Q44-1b	Q36-0.5	Q47-0.5
Q42-2	Q45-2b	Q37-0.5	
Q43-2	Q45-1	Q38-0.5	
Q44-2	Q46-1	Q39-0.5	
Q45-2	Q46-0.5	Q39-0.5b	
Q46-2	Q47-1	Q40-1	
Q47-2		Q40-0.5	

All the items were submitted to factor analysis after internal consistency, item-total correlation, MSA indexes, and cluster analysis were performed. Principal Components Analysis was used and according to what was performed with the A-R area, promax rotation was used. The three-factor solution was also the single most adequate because it gathered items in factors that were theoretically interpretable and presented a minimum of items with cross-loadings, despite its low explained variance (39.6%). Item 31 presented similar factor loadings in two factors and was excluded from the final configuration. The final internal consistency of the items in the Pr area was .804. The alpha value for factor 1 was .695, .718 for factor 2, and .593 for factor 3. Table 4 presents factor loadings in the final rotation according to three factors.

To obtain validity based on external variables, the EDAO-AR was compared to the EAS-40 (Laloni, 2001). Evidence of validity was obtained through the estimation of Pearson's correlations (*r*) among the partial and total scores for the EDAO-AR and the EAS-40 partial and total scores. As reported, the hypothesis was that the measures would

present negative associations among them. This expectation was fully confirmed by the results that indicated significant values for *r* between -.351 and -.615 (*p* < .001, one-tailed) (Zar, 1999).

Table 4
Factor loading rotated by the promax method (three factors) of the scale Pr after the exclusion of item 31 (n = 237)

Item	1	2	3
29		.390	
30	.423		
32			.524
33		.672	
34		.709	
35			.551
36			.818
37		.592	
38			.664
39	.443		
40	.670		
41	.413		
42	.660		
43		.518	
44	.681		
45		.570	
46		.670	
47	.742		

Discussion

This study's objective was to obtain evidence regarding the validity of the self-reported version of the EDAO-AR. This scale's first version was developed to measure adaptive efficiency based on the adequacy of responses in two areas of personality: Affective-Relational (A-R) and Productivity (Pr).

In regard to the A-R scale, after assessing criteria concerning internal consistency, item-total correlation, MSA indexes, and cluster analysis, items 6, 7 and 24 were excluded from the subsequent analyses because they presented greater failures to meet the criteria (Gouveia et al., 2009). The remaining items were submitted to exploratory factor analysis (promax rotation). The criterion to limit, *a priori*, the number of factors and consider the percentage of variance explanation was adopted. A three-factor solution proved to be the most adequate. The factors that emerged comprised three facets involved in the adaptive efficiency construct, even though they represented only 35.4% of the total variance and some items presented cross-loadings. These characteristics are acceptable in the instrument's first versions but should be improved in future versions.

The first factor was represented by eight items, all of them with loads above .40 (minimum .44 and maximum .77),

which suggests good representativeness for the assessment of the dimensions they are supposed to measure (Pasquali, 1999, 2003). They are: 10, 15, 16, 18, 19, 20, 22 and 27. Of these, only item 15 (Eigen value .44) also presented a load in another factor (factor 3), but with a significantly lower Eigen value (.31). It is worth noting that this item was the one that obtained the lowest load among the ones retained. The factor's internal consistency was also satisfactory (.70). The theoretical interpretation of these items suggests they have, as a common characteristic, the fact that they assess adaptive answers related to the individuals' affective needs and the relevance of others (spouse, family members, friends) to the solution of a problem situation.

The second factor was represented by eight items with loads above .35 (Eigen values between .35 and .69). They are: 2, 3, 8, 11, 12, 21, 25 and 28. Items 2 and 8 presented cross-loadings. Item 2 presented loads for factors 2 and 3, but the load was clearly higher in factor 2 (.43) when compared to factor 3 (.38). Additionally, item 2 is theoretically more aligned with the remaining ones in factor 2. In regard to item 8, it presented similar loads, though with inverse polarities for factors 2 (Eigen value .35) and 3 (-.31). We considered item 8 also to be more theoretically aligned with those in factor 2. Internal consistency was also satisfactory (.69) for the initial version of the scale, close to what was observed factor 1. In the theoretical interpretation, the items retained correspond to adaptive responses in the face of adverse situations and which require the toleration of frustration and acknowledging one's own limitations.

Factor 3 was represented by five items with loads above .40 (Eigen values .41 and .63). They are: 1, 4, 5, 13 and 14. Only item 14 presented cross-loading, though it was much higher in factor 3 (.51) when compared to factor 2 (.30). And as the remaining items, it is theoretically more aligned with the interpretation attributed to the factor 3. In regard to the internal consistency (.53), the alpha coefficient was below the minimum considered to be satisfactory for self-reported instruments (.70), probably due to the low number of items retained. Hence, new items should be developed for this dimension. According to the theoretical interpretation, the retained items correspond to the individual's adaptive answers to social situations and affective needs. It involves the control of one's impulses and how the individual positions him/herself in relation to others (spouse, family members and friends).

In regard to the Productivity scale, after assessing the criteria for internal consistency, item-total correlation, MSA indexes and cluster analysis, all the items developed for the exploratory factor analysis (promax rotation) were kept. The criterion to limit, *a priori,* the number of factors and consider the percentage of explanation of variation to define the number of factors was also adopted. The three-factor solution presented factors theoretically interpretable, and unlike the A-R scale, no items with cross-loadings (Table 4). In relation to the percentage of explained variance, the

three retained factors represent 39.6% of total variance after one item was excluded. The same facets involved in the A-R area are applicable to the interpretation of the factors that emerged in the Pr scale.

Factor 1 was represented by seven items, all with loads above .40 (minimum .41 and maximum .74). They are: 30, 39, 40, 41, 42, 44 and 47. Internal consistency was also satisfactory (.69). The theoretical interpretation of these items suggests they refer to adaptive responses in the face of adverse situations that demand tolerance of frustration. Additionally, these are responses in which it is implicit that the individual is capable of recognizing that s/he needs others (co-workers, classmates, boss or teacher) to solve a problem situation.

Factor 2 was also represented by seven items with a minimum load of .39 (item 29) and maximum of .70 (item 34), ensuring good representativeness. They are: 29, 33, 34, 37, 43, 45 and 46. Internal consistency was satisfactory for the first version of the scale (.72). According to the theoretical interpretation, the retained items correspond to situations faced by the individual, both in the workplace as out of the workplace (for instance, when in vacation), which evidence his/her needs and emotional reactions, and how the individual defines his/her choices and priorities. These are situations in which the emotional response is mediated by reflection.

Only four items represented Factor 3, with loads above .50 (Eigen values between .52 and .82). They are: 32, 35, 36 and 38. In regard to internal consistency (α = .59), the alpha coefficient was below what is considered satisfactory for self-reported instruments (α = .70), probably due to the low number of retained items. This dimension should be the object of the development of new items in future versions of the scale. According to the theoretical interpretation, the retained items correspond to the individual's adaptive answers related to satisfaction and self-confidence in professional skills.

As expected, the comparison between the EDAO-AR and the EAS-40 indicate that the instruments have statistically significant negative associations (α < .001), both in relation to the total and partial scores. Hence, the more adequate the individual is from the adaptation point of view, the lower the probability s/he will experience psychopathological symptoms. In this sense, it is possible to state that adaptive efficiency is a measure of one's general health and functionality (Enéas & Yoshida, 2012; Yoshida et al., 2010), and that the EDAO-AR seems to be an instrument appropriate to assess such health and functionality. In clinical situations, however, the combined use of the EDAO-AR and EAS-40 is recommended because the first provides an indication of adaptive efficiency in the personality area, and therefore, is more structural, while the EAS-40 indicates the type of symptomatology, contributing to a more psychodynamic aspect of assessment.

Final Considerations

The three-factor solution was the one that best met the theoretical expectations for both the A-R and Pr scales, despite the low percentages of explanation of the variances. Moreover, the dimensions that emerged correspond to facets that are involved in the concept of adaptive efficiency: the problem situation faced, responses of the self (affective and/or cognitive), and interpersonal relationship (social, family and professional).

Both scales (A-R and Pr) were composed of two well-represented factors (eight and seven items respectively) and a third factor that will demand the development of new items to increase the respective internal consistencies and approximate them to those evidenced in the first two factors (around .70). The items retained in the A-R scale and that represent cross-loadings should be revised and their terms better explained. Additionally, the items of both scales should have only three adaptive response alternatives in the next version of the EDAO-AR's: adequate, poorly adequate, and very poorly adequate. For that, the response alternatives that are appropriately aligned in their respective clusters, according to the cluster analysis, will be preserved. For the items that did not meet this condition, new response alternatives should be developed.

It is worth noting that despite the fact that the evidence of the validity for the A-R and Pr scales was verified separately, in practice, both should be applied whenever the objective is to obtain an individual's adaptive configuration. For the purpose of research, however, this situation is not always required.

The EDAO-AR has an inverse relationship to the EAS-40. That is, the more efficient one's adaptation, the lower the chance of presenting psychopathological symptoms. When the EDAO-AR is associated with the EAS-40, it can complement psychodynamic assessment, providing a more structural view of an individual's general functioning.

Because this study was conducted with a convenience sample from a single facility, generalization of results should be undertaken with caution. Studies addressing other extracts from the population, such as students (Cia & Yoshida, 2011; Freitas & Yoshida, 2011; Sigrist & Yoshida, 2011), adolescents (Khater, 2012) and athletes (Peixoto, 2011; Peixoto & Yoshida, 2012) are being conducted and their results can be compared to the current findings. Additionally, the results of studies involving clinical samples should provide results separated for the sample of patients and into those not in the same condition, as is the case of companions.

In summary, the Affective-Relational scale was composed of 21 items with very good internal consistency (α = .81), and with the following nomenclatures for the factors: *Factor 1* – adaptive responses in the face of affective needs and the importance of others to solving a problem situation. The focus is the interpersonal relationship or the other; *Factor 2* – adaptive responses to adverse situations that demand tolerance of frustration and acknowledging

one's own limitations. The focus is the situation to be faced; *Factor 3* – an individual's adaptive response when coping with social situations and affective needs. It involves the control of one's impulses and how the individual positions him/herself in relation to others. The focus is the self.

The Productivity scale was composed of 18 items with very good internal consistency ($\alpha = .80$). In summary, the composition and nomenclature of factors were the following: *Factor 1* – refers to one's adaptive responses in the face of adverse situations in the professional context that demand tolerance of frustration. It implies the recognition of others – co-workers or classmates and superiors (boss or teacher) – to solve a problem situation. The focus is the interpersonal relationship or others; *Factor 2* – items related to the cognitive assessment of an individual's feelings and needs within the professional context. The focus is the situation to be faced; *Factor 3* – comprises the items related to one's satisfaction and self-confidence in professional skills. The focus is the self.

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