ARABIC ADAPTATION OF ADOLESCENTS VERSION OF THE COGNITIVE EMOTION REGULATION QUESTIONNAIRE: VALIDITY AND RELIABILITY

Abstract: The purpose of this study was to examine the psychometric properties of Cognitive Emotion Regulation Questionnaire (Garnefski, Kraaij et al., 2002), using a sample of adolescents from Egypt, aged 13, 14 and 15 years. The results indicate that the nine-factor model was successful, obtaining adequate fit indexes: $\chi 2$, df=381.3, $\chi 2$/df=5.5, CFI=.92, TLI=.92, RMSEA=.05 and GFI=.93. Model fit indices showed acceptable goodness of fit values for nine factors structure of 36 items of the scale. Standardized factor loadings for one factor structure of Cognitive Emotion Regulation Questionnaire have values between .39 and .75 and all t values are significant for all of the items. According to Spearman correlation analyses, there were significant positive correlations between the adaptive cognitive emotion regulation strategies and all factors of Wong and Law Emotional Intelligence Scale. However, negative correlations were noticed between the maladaptive cognitive emotion regulation strategies and all factors of Wong and Law Emotional Intelligence Scale. The test-retest reliability was acceptable. The test-retest coefficient for the total scale score was .92.

Keywords: cognitive emotion regulation questionnaire, adolescents, validity, reliability

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INTRODUCTION

In our everyday life**,** emotion regulation is supposed to be a vital, indispensible process as it allows people to use different strategies to modify the course, intensity, duration and expression of emotional experiences depending on the situation or our goals (OrgileÂs et al.,2018). Emotion regulation that is done depending on cognitive processes, and so is called cognitive emotion regulation can contribute to emotional control, and refers to the conscious way of dealing with information that elicits emotions (Schäfer et al.,2018). It is made up of a wide variety of processes of a biological, social, behavioural, and cognitive nature, whose empirical study requires individualized analysis (Francisco et al.,2011).

Although there are several instruments that evaluate emotion regulation processes, such as the Difficulties in Emotion Regulation Scale (DERS) ,Emotion Regulation Questionnaire (ERQ),Trait Meta-Mood Scale(TMMS),and the Negative Mood Regulation Scale (NMR), Cognitive Emotion Regulation Questionnaire (CERQ) is the only questionnaire that focuses on evaluating purely cognitive strategies of emotion regulation, without encompassing the broad repertoire of intrinsic and extrinsic strategies for control, evaluation and modification of emotions (See OrgileÂs et al.,2018)

The Cognitive Emotion Regulation Questionnaire was originally developed by Garnefski and colleagues (2001) using a sample of high school students in the Netherlands. The scale divides cognitive coping into nine conceptually distinct strategies: (1) self-blame; (2) acceptance; (3) rumination; (4) putting into perspective; (5) positive refocus; (6) refocus on planning; (7) positive reappraisal; (8) catastrophising; and (9) blaming others. It is important to note that cognitive coping and cognitive emotion regulation are interchangeable terms (Zhu et al., 2007).

The maladaptive strategies measured by the Cognitive Emotion Regulation Questionnaire are: 1) self-blame (thoughts about being the one to blame for the negative experience); 2) other-blame (thoughts about the others being the ones to blame for the negative experience); 3) rumination (excessive focus on thoughts associated to the negative aspects of the experience); and 4) catastrophizing (thoughts emphasizing the terror of the negative experience). On the contrary, the adaptive strategies measured by the instrument are: 1) putting into perspective (thoughts relativizing the experience and putting aside its seriousness when comparing it to other experiences); 2) positive refocusing (more pleasant and joyful thoughts instead of thoughts about the negative experience); 3) positive reappraisal (thoughts about giving a new positive meaning to the experience in terms of personal goals); 4) acceptance (thoughts about accepting the experience); and 5) refocus on planning (thoughts about which steps are necessary to be taken to deal with the negative experience) (Schäfer et al.,2018).

PROBLEM STATEMENT

Cognitive strategies of children and adolescents have positive impact on their psychological outcomes as they learn to regulate their emotions by means of cognition, thoughts about themselves, and their feelings toward others (Liu, Chen & Blue, 2016).Thus, it is necessary to find a valid measure for cognitive emotion regulation. However, this area is limited in Egypt. In order for filling in this gap, the present study seeks to adapt an Arabic version of adolescents version of the cognitive emotion regulation questionnaire. To achieve this aim, the factor structure was analysed using confirmatory factor analysis (CFA), test-retest reliability of each dimension of the Cognitive Emotion Regulation Questionnaire was examined, and convergent validity was evaluated.

METHODS

PARTICIPANTS

The sample consisted of 840 adolescents from six middle schools in Baltim Educational Edara, Kafr EL Sheikh, Egypt, of which 450(53.57%) were females and 390(46.42%) were males .They aged

between 13, 14 and 15 years (*M* age = 14.2; *SD* = 6.2).

INSTRUMENTS

Cognitive Emotion Regulation Questionnaire (Garnefski, Kraaij et al., 2002). This questionnaire comprises 36 items that evaluate nine cognitive strategies: rumination; catastrophizing; self-blame; other-blame; putting into perspective; acceptance; positive refocusing; positive reappraisal; and refocus on planning. Answers are evaluated on a five-point Likert scale from 1 (*Almost never*) to 5 (*Almost always*).

Wong and Law Emotional Intelligence Scale (WLEIS) (Law, Wong, & Song, 2004), is a 16-item self-report trait EI measure using a 5-point Likert-type scale (1 = totally disagree to 5 = totally agree). This questionnaire is composed of four factors: self-emotion appraisal (SEA), other emotion appraisal (OEA), use of emotion (UOE) and regulation of emotion (ROE). Each has 4 items .

DATA ANALYSIS

The original scale has 9 subscales which were confirmed in this study using confirmatory factor analysis (CFA).Spearman correlations to examine the relationships between the Cognitive Emotion Regulation Questionnaire Subscales and Wong and Law Emotional Intelligence Scale Subscales were used to evaluate convergent validity .Intra-class correlation was used to explore test-retest reliability.

RESULTS

CFA was conducted for testing item-factor structure of the scale. Maximum likelihood estimation through AMOS 24 program was conducted with 840 adolescents. Model fit indices showed acceptable goodness of fit values for nine factors structure of 36 items of the scale. The indices found for the scale and acceptable ranges are presented in Table 1.

Table1. Model fit indices from measurement models of Cognitive Emotion Regulation Questionnaire

Goodness of Fit Indexes	Measurement Model of Cognitive Emotion Regulation Questionnaire
$\chi 2$, df	381.3
$\chi 2$/df	5.5
CFI	.92
TLI	.92
RMSEA	.05
GFI	.93

In the second part of Confirmatory Factor Analysis results, unstandardized and standardized parameter estimates were examined as presented in Table 2.

Table 2. Unstandardized and standardized parameter estimates for Cognitive Emotion Regulation Questionnaire

Scale	Item	Unstandardized Factor Loadings	Standardized Factor Loadings	SE	T	R2
SACQ	1	.91	.55	.15	12.46	.31
	2	.77	.56	.10	12.44	.32
	3	.88	.62	.11	12.11	.37
	4	1.17	.65	.08	17.81	.42
	5	.89	.52	.11	17.88	.27
	6	.63	.54	.10	18.48	.29
	7	1.22	.70	.07	16.54	.49
	8	.85	.53	.11	17.64	.28

	9	1.22	.69	.10	17.42	.46
	10	.98	.57	.18	18.88	.33
	11	.96	.58	.12	18.19	.34
	12	1.07	.58	.11	18.20	.34
	13	1.18	.66	.09	16.58	.46
	14	.63	.54	.10	18.48	.29
	15	.97	.56	.18	18.44	.32
	16	.82	.51	.09	18.37	.26
	17	.66	.52	.11	18.12	.18
	18	.90	.56	.11	18.42	.28
	19	.75	.39	.11	18.22	.36
	20	.95	.58	.12	18.22	.35
	21	.87	.57	.12	17.55	.28
	22	.84	.63	.11	17.69	.40
	23	.94	.58	.12	18.27	.34
	24	.92	.60	.12	17.59	.35
	25	.90	.53	.11	18.44	.26
	26	1.22	.75	.10	17.22	.55
	27	.98	.57	.17	12.48	.31
	28	.88	.61	.11	11.90	.38
	29	.52	.36	.14	13.37	.13
	30	.76	.56	.07	17.04	.32
	31	.74	.64	.05	16.89	.40
	32	.70	.59	.05	17.45	.34
	33	.98	.71	.07	14.69	.50
	34	.78	.56	.08	17.42	.31
	35	.57	.46	.07	18.36	.21
	36	1.12	.62	.11	18.01	.39

Note. All t values were significant, $p < .001$

As seen in Table2, standardized factor loadings for one factor structure of Cognitive Emotion Regulation Questionnaire have values between .39 and .75 and all t values are significant for all of the items.

TEST-RETEST RELIABILITY

Test-retest coefficients were: .76 for Self-Blame, .75 for Acceptance, .80 for Rumination, for Positive Refocusing, .79 for Planning, .78 for Positive Reappraisal, .77 for Putting into Perspective, .80 for Catastrophizing, and .81 for Other-Blame, which indicated that the test-retest reliability was acceptable. The test-retest coefficient for the total scale score was .92

CONVERGENT VALIDITY

According to Spearman correlation analyses, there were significant positive correlations between the adaptive cognitive emotion regulation strategies and all factors of Wong and Law Emotional Intelligence Scale. However, negative correlations were noticed between the maladaptive cognitive emotion regulation strategies and all factors of Wong and Law Emotional Intelligence Scale, as shown in table 3

Table 3. Spearman correlations among Cognitive Emotion Regulation Questionnaire subscales and all factors of Wong and Law Emotional Intelligence Scale.

	self-emotion appraisal	other emotion appraisal	use of emotion	regulation of emotion
1.Self-blame	.38⁻	.32 ⁻	.35-	.40⁻
2. Acceptance	.37⁻	.40 ⁻	.36-	.34 ⁻

3. Rumination	.33–	.31–	.34 –	.36 –
4. Positive refocusing	.48	.42	.45	.43
5. Planning	.44	.45	.52	.51
6. Positive reappraisal	.39	.40	.43	.46
7. Putting into perspective	.42	.47	.41	.38
8. Catastrophizing	.32–	.31 –	.33-	.36 –
9. Other-blame	.38–	.33–	.30 –	.32 –

Correlation is significant at the .01 level (2-tailed).

DISCUSSION

The purpose of this study was to examine the psychometric properties of Cognitive Emotion Regulation Questionnaire (Garnefski, Kraaij et al., 2002), using a sample of adolescents from Egypt, aged 13, 14 and 15 years. The results indicates that the nine-factor model was successful, obtaining adequate fit indexes: $\chi 2$, df=381.3, $\chi 2/df$=5.5, CFI=.92, TLI=.92, RMSEA=.05 and GFI=.93. Model fit indices showed acceptable goodness of fit values for nine factors structure of 36 items of the scale. Standardized factor loadings for one factor structure of Cognitive Emotion Regulation Questionnaire have values between .39 and .75 and all t values are significant for all of the items.

According to Spearman correlation analyses, there were significant positive correlations between the adaptive cognitive emotion regulation strategies and all factors of Wong and Law Emotional Intelligence Scale. However, negative correlations were noticed between the maladaptive cognitive emotion regulation strategies and all factors of Wong and Law Emotional Intelligence Scale.
The test-retest reliability was acceptable. The test-retest coefficient for the total scale score was .92

This study showed that the Egyptian version of the Cognitive Emotion Regulation Questionnaire had good psychometric properties. However, there are some limitations. First, the sample consists of preparatory stage students, who may not represent the general Egyptian population, limiting the generalization of results. Second, all the measures used in the current study were self-reported questionnaires. Therefore, researchers should establish discriminant validity in future studies. Nevertheless**,** this tool allows future studies to analyse Cognitive Emotion Regulation within the Egyptian culture.

REFERENCES

Domínguez-Sánchez, Francisco, J., Amaia Lasa-Aristu, Pedro J. Amor &Francisco P. Holgado-Tello" Psychometric Properties of the Spanish Version of the Cognitive Emotion Regulation Questionnaire". Assessment ,2011, 20(2) 253– 261

Garnefski, Nadia, Van den Kommer, Tessa, Kraaij, Vivian, Teerds, Jan, Legerstee, Jeroen & Onstein, E. " The relationship between cognitive emotion regulation strategies and emotional problems: Comparison between a clinical and a non-clinical sample". *European Journal of Personality*, 2002, 16, 403-420.

Law, Kenneth, Wong, Chi-Sum & Song, Lynda " The construct and criterion validity of emotional intelligence and its potential utility for management studies". *Journal of Applied Psychology*, 2004, 89, 483-496.

Liu,Wen, Chen, Liang Chen Liang& Blue, Philip " Chinese Adaptation and Psychometric Properties of the Child Version of the Cognitive Emotion Regulation Questionnaire". PLoS ONE,2016, 11(2): e0150206.

OrgileÂs, Mireia, Morales Alexandra, FernaÂndez MartõÂnez Iván, Ortigosa-Quiles Juan & Espada Jose "Spanish adaptation and psychometric properties of the child version of the Cognitive Emotion Regulation Questionnaire". *PLoS ONE* ,2018,13(8): e0201656.

Schäfer, Julia, Cibils Filho Bolivar, de Moura Tayse, Tavares Valquiria, Arteche Adriane & Kristensen Christian "Psychometric properties of the Brazilian version of the Cognitive Emotion Regulation Questionnaire". *Trends Psychiatry Psychother*. 2018;40(2):160-169.

Zhu, Xiongzhao, Auerbach, Randy P., Yao, Shuqiao, Abela, John R. Z., Xiao, Jing and Tong, Xi "Psychometric properties of the Cognitive Emotion Regulation Questionnaire: Chinese version." *Cognition & Emotion*, 2007, 22(2):288 – 307.