

# Adaptation of the Defensive Style Questionnaire 60 (DSQ-60) within a Iranian Cancer Patients Sample

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## Abstract

**Background:** Defense mechanisms defined as unconscious process, cognitive operations alter by developmental periods for protective function, and that can be assessment of personality and experimental schedules. Defense Style Questionnaire (DSQ-60) is a self-report instrument designed to measure defensive functioning and coping styles. The aim of this study was to adapt the DSQ-60 in a sample of cancer patients in Iran using exploratory and confirmatory factor analytic procedures.

**Method:** The DSQ-60 was used to measure the conscious derivatives of three factors defense styles include image distorting, affect regulating and adaptive in a sample of 200 cancer patients.

**Result:** Cronbach's coefficient alpha for image distorting ( $\alpha = 0.54$ ), affect regulating ( $\alpha = 0.53$ ) and adaptive ( $\alpha = 0.5$ ) were found to be poor in terms of potential clinical significance, internal consistency for all components was acceptable (.68).

**Conclusion:** Our results were consistent with the previous research on the DSQ-60 indicating that the psychometric features need to be improved before the wider use of the scale. Further, DSQ-60 is a suitable tool to assess cancer patients psychological defense styles and that may be used for psychological interventions to improve the care of these patients.

**Keyword:** defense styles, adaptation, DSQ-60, confirmatory factor analysis

## I. INTRODUCTION

Defense mechanisms defined as unconscious process, cognitive operations alter by developmental periods for protective function, and that can be assessment of personality and experimental schedules (Cramer P 2014). Vaillant declare Engagement advance defense styles independent of social class, education and IQ then, actually advance defenses related in positive psychology (Vaillant GE 2000). Freudian defense mechanisms and empirical findings in modern social psychology: reaction formation, projection, displacement, undoing, isolation,

sublimation, and denial, they declare Undoing is fighting against error situation as counterfactual thinking, projective is consequence of existing defense whereas itself is for sublimation, although psychological and physical impulse transfer to other situation (Baumeister RF, Dale K and Sommer KL 2002). Unconscious psychological is essential process for succeed defense styles, developmental, personality, and social psychologists implication from defense styles which define psychological functioning (Cramer P 2000).

## II. REVIEW OF LITERATURE

### A. Description defense mechanisms in patients

Hyphantis et al (2010) egodefense mechanisms are associated with patients' preference of treatment modality independent of psychological distress in end-stage renal disease, they declared: hemodialysis patients employing passive-aggressive behaviors which is from defense styles whereas this related with patients personality. Beresford et al (2006) searching about cancer survival probability as a function of ego defense (adaptive) mechanisms versus depressive symptoms, result shows: ego defense mechanisms as response of distress and cancer diagnosis condition in patients, although advance adaptive defense mechanisms must be modified for dissonance behavior-treatment in cancer patients. Pervichkoa et al (2014) comparative analysis shows patients with Hypertension diagnosis widely encounter from defense styles and more developed ability for feeling. Ortiz-Rivas et al (2014) suggest older adult patients consciously used defense mechanisms as coping strategies, furthermore, Intestinal stoma patients indicate physical and psychological health problem, then patients reflected level of self-image adaptation, meanwhile elderly patients use only a small part of defense mechanisms as coping process. Laurent et al (2014) patients used various defense styles to fight versus intrinsic emotional in error situation, psychological defense styles improved by following dissonance experience because they lead to learn

professional capacity and knowledge against error event.

### **B. Research on defense style questionnaire**

Defense Style Questionnaire (DSQ) is a self-report instrument designed to measure defensive functioning and coping styles. Therefore DSQ had questionable tool in other culture. Drapeau et al (2011) defense functional style (DFS) invigorating schedule of defense mechanisms that state completely occur then neither model don't reflect defense functional in both sex. Petraglia et al (2009) researched around gender differences in self-reported defense mechanisms: a study using the new defense style questionnaire-60, they indicated men and women differently applied from defense styles to adaptive with dissonant situation meanwhile, state have clinical relevance. Carlos António Ribeiro (2014) declared: the DMRS support several psychoanalytic theories about the relationship between defensive functioning with the subjects of personality and affective disorders, defense mechanism rating scale interpretation and therapeutic alliance, conflict, and the different types of psychotherapy. Wastell (1999) by defensive focus and the defense style questionnaire study suggested that Valliant's classification and leveled Defense Style Questionnaire (DSQ) in both study were vigorous and theoretically strong, two research such as: considering female and male in study 1 and study 2 respectively. Meanwhile, clinical practice are explored, particularly defense styles related with personality and anxiety disorders. Thygesen et al (2008) according to the assessing defense styles: factor structure and psychometric properties of the new defense style questionnaire 60 (DSQ-60), they shows DSQ-60 is new factor, which instrument reflecting defensive functioning in healthy individuals and improved psychometric properties. Image distorting, affect regulating, and adaptive are three factor of defense style meanwhile, Cronbach's alpha for the three styles was .64, .72, and .61, respectively. Crasovan and Maricutoiu (2012) they declared original factor by alternate models for grouping the defense mechanisms into higher-order factors furthermore, confirmatory analysis completely equip for Rumanian sample. Reflecting to the fact Cronbach's alpha level of defense style questionnaire were very low in other researches. Investigation about validity DSQ-60 questionnaire accomplished in different culture including: Chinese, Dutch, Egyptian Arabic, Finnish, French, German, Italian, and Norwegian. American psychiatric association (2013) defined Defense mechanisms as modified emotion in intensive stressor situation. Number of defense like: projection, splitting and acting out are maladaptive defenses. Suppression and denial are defenses belong to severity and inflexibility for maladaptive or adaptive

defense (P-819). Cramer (1991) defense styles as endlessly thought process hence, verbal behavior is sensible sample which psychometric features described by test.

### **C. The present research**

This present research presents results obtained on the adaptation of the DSQ 60 on Iranian cancer patients sample. The objectives of this is analyze the internal consistency of DSQ-60 scales. The adaptation of DSQ 60 questionnaire in Iranian was carried out over a period of approximately 12 months starting with April 2014 until March 2015. In the cross-cultural adaptation for DSQ-60. First, in order to obtain a Iranian version of the DSQ-60, we translated the items through retroversion. Thus, the items of the questionnaire were translated from English into Iranian by 1 (university professors), working under the double-blind procedure. Initially, all items were translated from English into Iranian, and then, another 2 persons translated them from Iranian into English. The items resulting from the back translation were compared with those from the original questionnaire.

Finally, the result (the elements of cultural context) was optimized for a better understanding of the item's meaning. Based on the identified correspondence, the translation into Iranian was considered a proper version of the original instrument.

## **III. METHODOLOGY**

### **A. Participants**

After the translation was completed, we administered the DSQ-60 to cancer patients sample, Sample Participants (n=200) were recruited from a local cancer population in Iran. We obtained informed consent from all participants and we administered the DSQ-60 and a socio-demographics questionnaire. Each patient took approximately 30-40 minutes to complete the questionnaires. The study started on 12th April 2014 and ended on 20th March 2015. there is not any out because all persons completed the DSQ-60, because they failed to answer to more than three items. For the case in which the number of the items with no answer was 3 (or lower), the missing value was completed with an average value of that particular item reported to the average value of all other completed items regarding the demographic characteristics of the subjects reported to the number of scores remained in the analysis.

### **B. DSQ-60**

The DSQ-60 is purported to measure the conscious derivatives of 30 defense mechanisms, with two items per defense. The defense mechanisms assessed include: acting-out, affiliation, altruism, anticipation, denial, devaluation of self, devaluation of other, displacement, dissociation, fantasy, help-

rejecting, complaining, humor, idealization, intellectualization, isolation, omnipotence, passive-aggressive, projection, projective identification, rationalization, reaction formation, repression, self-assertion, self-observation, splitting of self, splitting of other, sublimation, suppression, undoing, and withdrawal.

Respondents answer each of the 60 items on a 9 point likert scale with anchors of one (not at all applicable to me) and nine (completely applicable to me). Scores for each defense are calculated by taking the mean of the two items representing the defense. Style cores are derived by taking the mean of the items belonging to each factor scale.

### **C. Statistical Analysis**

The Statistical Package for Social Sciences (SPSS) version 21.0 was used for the estimation, we used the principal components method in factor analysis and used method goodness of fit index (GFI). Therefore, we used weight regression. We assessed the internal consistency of DSQ-60 scales using the traditional Cronbach's coefficient alpha index.

## **IV. RESULTS**

### **A. Exploratory factor analysis**

The sample included 82 men (41%) and 118 women (59%) and the mean age of participants was 44.74 years (SD=16.95). Principal components analysis with varimax rotation was conducted on the whole sample (n = 200) using the mean scores for each defense styles. Orthogonal rotation was employed as we sought to unearth factors, which were relatively independent of one another. The goal was to see how the 30 individual component of psychology defense styles loaded onto 3 factors, commonly referred to as psychology defense styles. Eleven defense styles had eigen values greater than one and together accounted for 30% of the variance.

Examination of the scree plot, scree elbow curves, and eigen values above two indicated that three factor solution was the most parsimonious. The three rotated factors accounted for 56.2%, 22.8% and 21% of the variance (total 100%). Table 2 displays the rotated factor loadings and side loadings.

Eigen values and variance estimates for the rotated solution are provided in Table 3. As a general rule, eigen values loading .30-.40, all factor loadings should be reported to ensure sufficient information for a full evaluation, examination of the three factors revealed that some components needed to be deleted; some failed to make theoretical sense in their

groupings, while others loaded poorly, or had high side loadings. Confirmatory factor analysis was conducted to further determine the strongest items of the scale and make recommendations for refinement (Floyd and Widaman, 1995).

### **B. Confirmatory factor analysis**

The goodness of fit index (GFI) statistics for three factors is provided in Table 4. As with the exploratory analysis, the mean score for each component was used. In model one, defense styles with factor loadings less than .4 in the exploratory analysis was dropped (n = 9 – component 5, 15, 17, 20, 21, 24, 26, component 29 and component 30). In factor one, 11 components of defense styles were dropped due to their standardized regression weights. In addition 20 components were dropped from factor two for theoretical reasons. Factor three 22 components were dropped due to its regression weight in. The model proved to be the best fitting for a combination of empirical and theoretical reasons ( $\chi^2/df= 19.27$ ; GFI= 16429.131). Table 5 contains the factor loadings and Table 7 contains intercorrelations of the factors and Table 8 shows intercorrelations 30 defense styles. In the final model, the first factor was best described as the image-distorting and is comprised of Splitting of other, Projection, Denial, Devaluation of other, Projective, Omnipotence, Devaluation of self, Fantasy, Splitting of self, Idealization and Isolation. Factor two as affect-regulating contained Altruism, Passive-aggressive, Suppression, Sublimation, Reaction, Self-observation, Self-assertion, Withdrawal, Help-rejecting and Affiliation. The third factor adaptive contained Rationalization, Humor, Acting-out, Intellectualization, Displacement, Repression, Undoing and Anticipation.

### **C. Reliability**

Internal consistency reliability of the three styles was assessed in sample using Cronbach's coefficient alpha (see Table 6). In the sample (n = 200), the alpha for image-distorting (ex = 0.54), affect-regulating (ex = 0.53) and adaptive (ex = 0.5) were found to be poor in terms of potential clinical significance.

### **D. Discussion**

Defense mechanisms were general acceptable regulation in patient populations hence, clinicians can most effectively target defenses in psychotherapy (Olson et al 2011). Taylor JB (2014) defense styles encounter in every patients, defense indicate how patient response to stress in other situation, in particular, when ego defense styles appear they give enormously useful information for a clinician to make diagnosis decision.

In this study exploratory factor analysis revealed a three factor solution, yet not all items loaded satisfactorily. Confirmatory factor analysis was used to find the best empirically and theoretically cogent groupings. defense styles questionnaire considered three factors of defense styles. It is possible that this defense styles questionnaire(DSQ-60) was revealed due to our 3 use of exploratory and confirmatory analysis, and in-depth consideration of theory.

There are some similarities between our findings and those of other authors. Further, defenses which perform well in factor analysis do not always reliably cluster together within styles. Internal consistency for all components was acceptable (.68)meanwhile this alph affected by culture It is not only ferquent choice of certain defense mechanisms that is influenced by cultural factors, defense mechanisms are universal phenomena (Tseng, 2001).the styles are correlated it is possible that despite rigorous back translation procedures, the French and English versions may have contained different meanings (which may explain, in part, different alpha levels between the groups). There are various limitations to our results.

Internal consistency reliabilities are generally poor but factors are highly correlated. It is possible that despite rigorous back translation procedures the Chinese, Dutch, Egyptian Arabic, Finnish, French, German, Italian, Norwegian and Roman versions may have contained different meanings (which may explain, in part, different alpha levels between the groups). The Defensive Style Questionnaire – 60 designed for the assessment of the defense mechanisms compatible with the mechanisms of psychological defense included in the DSM IV (APA, 2003/2000). Over time, DSQ has known several editions (with 40, 42, 81 or even 88 items), but DSQ-60 is the latest edition of this instrument. Some authors consider that DSQ is the most used instrument for the analysis of psychological defense mechanisms, and it is included in the American Psychiatric Association's Handbook of Psychiatric Measures (Crasovan DI, 2012).

The strengths of the study lie in the use of both exploratory and confirmatory factor analysis in patients samples. Every effort has been made to make our analytic approach explicit and replicable while detailed reporting has been used to illuminate our rationale for retaining specific components on 3 factors of DSQ-60. Empirical and theoretical criteria were used for the factor analyses, and special attention was given to examination of the factor loadings, side loadings, eigen values, and sere plot.

Multiple paths appear fruitful for future research. First and foremost, the results of both the exploratory and confirmatory factor analyses suggest that a number of components need to be revised, an iterative approach should be taken to revise the poorly performing components of DSQ-60 to conduct pilot testing on new items. It is crucial that all components perform well on the scale given the importance of making the DSQ-60.

Others could improve ecological validity by using non patient populations. defense styles loadings and factors may vary in a non patients sample given the low base rates of certain components. As the recommended sample size of 200 for confirmatory factor analysis was narrowly met, new studies could employ larger, more diverse samples (including equal numbers of men and women). There is strong correlation between somatic and psychological experience was revealed, as part of an original complex psychosomatic model, patients with oncologist diagnosis using defense style as coping strategies and emotional response to all condition of diagnosis (Stepanchuk et al, 2013). Piccinelli et al (2014) Italian version is first research in medical oncology, this tool correspondence to original questionnaire then frequency and variety of questionnaire is suitable for research on defenses in medical oncologists. Researchers should be measured for covariance purposes of psychological defense styles. Finally, further work should be conducted in the areas of predictive, test-retestreliabilities, and concurrent and discriminant validity, with particular focus on other self report measures of psychological defense styles.

The present study indicates that the DSQ-60 is a adaptive instrument in Iranian cancer patients. Our results were consistent with the previous research on the DSQ-60 indicating that the psychometric features need to be improved before the wider use of the scale. Further, DSQ-60 is a suitable tool to assess cancer patients psychological defense styles and that may be used for psychological interventions to improve the care of these patients.

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**Tables**

**Table 1. Demographic characteristics (n = 200)**

Demographic Variable	N	Mean (SD)	%
Female	118		59
Male	82		41
Age	200	44.74(16.94)	

**Table 2. Exploratory factor analysis (n = 200)**

Defense styles (n=30)	Factor I	Factor II	Factor III
1 Altruism	.32	-.08	.53
2 Passive-aggressive	-.16	-.12	
3 Suppression	.45	.17	.01
4 Sublimation	.17	.04	.64
5 Splitting of other	.13	.19	-.36
6 Rationalization	.45	-.21	.05
7 Humor	.08	.2	.68
8 Projection	-.14	.57	-.26
9 Reaction	.17	.05	.46
10 Self-observation	.56	.01	.24
11 Denial	.14	.53	.28

12 Devaluation of other	.52		.15	-.2	
13 Projective		.66		.02	-.2
14 Dissociation		.01		.34	.13
15 Self-assertion		.03			.27
16 Omnipotence		.63		-.12	.18
17 Acting-out		.01		.37	-.33
18 Devaluation of self		.02		.58	-.21
19 Fantasy		-.16		.57	.05
20 Withdrawal		.14			.24
21 Intellectualization		.37		.05	-.32
22 Splitting of self		.16		.48	-.5
23 Displacement		.22		.45	.14
24 Repression		-.03		.14	.31
25 Idealization		.52		-.13	.11
26 Isolation		.16		.26	.1
27 Help-rejecting	-.05	.5	-.02		
28 Undoing	.54	.2	.19		
29 Anticipation		.28		.34	.23
30 Affiliation.3	.26	.09			

**Table 3. Rotated variance and eigenvalues (n = 200) sample**

Image.distorting	Affect.regulating	Adaptive	Total
Eigenvalue	1.686.684	.6303	
Variance (%)	56.27	22.8	21
			100

**Table 4: Goodness of Fit Indices model cancer patients (n = 200) sample**

$\chi^2/df^a$	GFI <sup>b</sup>	Sig
19.27	16429.131	.000

<sup>A</sup>Chi-square adjusted for degrees of freedom, <sup>b</sup>Goodness-of-fit index

**Table 5. Standardized regression weights in the cancer patients (n = 200) sample**

	Factor 1	factor 2	factor 3
Splitting of other	.26		
Projection	.27		
Denial	.19		
Devaluation of other	.15		
Projective	.18		
Omnipotence	.21		
Devaluation of self	.21		
Fantasy	.22		
Splitting of self	.24		
Idealization	.17		
Isolation	.17		
Altruism.12			
Passive-aggressive.22			
Suppression		.26	
Sublimation		.27	
Reaction		.26	
Self-observation			.18
Self-assertion.27			
Withdrawal.25			
Help-rejecting		.28	
Affiliation.23			

Rationalization.22	
Humor.37	
Acting-out .29	
Intellectualization.27	
Displacement	.28
Repression	.36
Undoing.26	
Anticipation.23	

Note. Each column contains standardized regression weights in the cancer patients samples respectively

Table 6. Cronbach's coefficient alpha values for the defense styles(DSQ-60)

	Factor I	Factor II	Factor III
Image.distorting		Adaptive	
	Affect.regulating		
	.54	.53	.47

Table 7. Correlations of three factors defense styles(DSQ-60) in the sample (n = 200)

Image.distorting	Affect.regulating	Adaptive	Image.distorting	1
.416**	.42**			
	.416**	1	.417**	
	.42**	.417**	1	

\*\*p<.001, \*p<.005

Table 8. Correlations of components defense styles(DSQ-60) in the sample (n = 200)

Defense mechanism	mean	Std.deviation	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Altruism	13.69	1.32													
2 Passive-aggressive	10.56	2.4-.28**													
3 Suppression	9.45	2.86.04	.07												
4 Sublimation	4.47	2.8.34**	-.08	.18**											
5 Splitting of other	10.62	3.1-.05	-.01	.1	-.08										
6 Rationalization	12.91	1.8.14*	-.21**	.26**	.06	-.03									
7 Humor	8.94	2.95	.28**	.02	.08	.42**	-.10	.05							
8 Projection	8.86	3.28-.12	.29**	.13	-.1	.24*	-.16*	-.09							
9 Reaction	10.88	2.88.26**	-.07	.03	.25**	-.1	.07	.14*	-.01						
10 Self-observation	12.6	1.98	.23**	-.03	.23**	.14*	-.15*	.14*	.04	-.17*	.19				
11 Denial	11.12	2.27	.08	.26**	.03	.03	-.06	-.07	.32**	.11	.05	.10			
12 Devaluation of other	12.94	1.83	-.05	.06	.19**	-.07	.02	.21**	-.0	-.04	-.0	.19**	.08		
13 Projective	12.27	2.19	.13	-.06	.3**	.0	.09	.08	-.04	.01	-.02	.24**	.02	.31**	
14 Dissociation	11.94	2.38	-.07	.16*	.03	-.06	.02	-.05	.15*	.1	.11	.03	.18**	.04	
15 Self-assertion	10.94	2.92	.14*	.09	.17*	.15*	.06	-.01	.2**	.17*	-.11	.07	.13	-.03	
16 Omnipotence	10.72	2.52	.24**	-.17*	.31**	.22**	.13	.27**	.15*	-.18**	.06	.26**	.0	.14*	
17 Acting-out	12.31	2.36	-.08	.24**	-.08	-.18**	.19**	-.16-.1	.21**	-.14*	-.15*	.11	.05	.1	
18 Devaluation of self	9.6	2.57	-.13	.26**	.14*	-.0	.14*	-.10	-.04	.36**	.04	-.04	.27**	.08	
19 Fantasy	11.24	2.7	-.17*	.22**	-.06	-.01	-.10	-.16*	.06	.27**	.02	-.03	.18**	.12	
20 Withdrawal	12.63	2.76	.04	.09	.08	-.0	-.01	.03	-.1	.07	-.0	.08	.05	-.02	
21 Intellectualization	12.65	2.18	-.11	-.03	.03	-.15*	.06	.13	-.06	-.02	-.1	.12	.0	.42**	

22 Splitting of self	9.48	2.94	-.21**	.2**	.07	-.20**	.33**	-.0	-.25**	.37**	-.15*	.0	.11	.12
15*														
23 Displacement	12.27	2.25	-.05	.16*	-.05	.02	-.02	.04	.18*	.01	.08	.04	.45**	.08
.13														
24 Repression	8.8	2.89	.03	-.02	-.01	.12	-.01	.0	.18**	-.07	.12	-.07	.08	.01
-.06														
25 Idealization	12.78	2.12	.23**	-.11	.0	.07	.0	.24**	.06	-.23**	.1	.22**	.08	.15*
.23**														
26 Isolation	7.13	2.06	.09	-.02	.15**	.19*	.12	.04	.16*	.01	-.03	.06	.01	.12
-.02														
27 Help-rejecting	9.41	3	.11	.15*	.05	.03	.22**	-.13	.04	.34**	.03	-.10	.07	.00
-.02														
28 Undoing	12.22	2.07	.20**	-.0	.15*	.24**	.11	.09	.06	.03	.26**	.34**	.08	.21**
.29**														
29 Anticipation	13	1.86	.16*	.04	.07	-.0	-.08	.04	.07	.08	.17*	.27**	.26**	.04
.05														
30 Affiliation	12.5	2.61	.05	.11	.09	.06	-.0	.04	.06	.08	.07	.09	.01	.19**
.16														

Note: N=200; \*/\*\* correlation is significant at p<.05; internal consistency indicators (Cronbach's alpha) are presented.

Descriptive statistics, inter-correlations and internal consistency of DSQ-60 scales

Defense mechanism	14	16	15	17	18	19	20	21	22	23	24	25	26	27	28	29	30
14 Dissociation																	
15 Self-assertion	.11																
16 Omnipotence	-.03	.14*															
17 Acting-out	-.09	-.04	-.05														
18 Devaluation of self	.03	.01	-.13	.24**													
19 Fantasy	.25**	.08	-.3**	.08	.26**												
20 Withdrawal	.04	.01	.01	.03	.12	.13											
21 Intellectualization	.11	-.05	.0	.07	.07	.11	-.17										
22 Splitting of self	.01	-.04	.01	.23**	.37**	.15	.17	.1									
23 Displacement	.21**	.01	.04	.25**	.14*	.12	.07	.02	.2**								
24 Repression	-.08	.07	-.01	-.02	.02	.14*	-.03	.01	-.1	.06							
25 Idealization	-.0	-.02	.34**	-.0	-.09	-.14	.17	.19**	-.08	.09	-.08						
26 Isolation	-.0	.11	.12	.06	.09	.15	-.05	.13	.17	.05	.17	-.06					
27 Help-rejecting	.04	.13	-.05	.17*	.18**	.25**	.22**	-.09	.3**	.09	.07	-.11	.19**				
28 Undoing	-.03	.03	.25**	.01	.02	.04	.07	.08	.08	.12	.12	.12	.08	-.0			
29 Anticipation	.18*	.12	.07	.03	.11	.22**	.18**	.01	.08	.12	.0	.14	.0	.05			
.17																	
30 Affiliation	.15*	.04	-.0	.08	.07	.09	.04	.0	.23**	.07	.12	-.06	-.02	.25**	.21**		

Note: N=200; \*/\*\* correlation is significant at p<.05; internal consistency indicators (Cronbach's alpha) are presented in italics.