

The Relationship between Depression, and Interpersonal Style, Self-Perception, and Anger



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SUMMARY

Purpose: The aim of this study was to investigate the relationship between depressive symptoms, and self-concept, interpersonal style, and anger in a group of patients diagnosed with depression and a control group that included volunteers without clinical symptoms.

Method: The study included 64 patients (patient group) diagnosed with depression according to DSM IV and 71 volunteers (comparison group) without a psychiatric diagnosis. The participants were given a questionnaire to collect data on their demographic characteristics and life circumstances, along with the Interpersonal Style Scale, Brief Symptom Inventory, Multidimensional Anger Scale, Social Comparison Scale, and Beck Depression Inventory.

Results: T-test comparisons showed that the patient group had significantly higher negative interpersonal style scores, higher anger, and more negative self-perception. The results of regression analysis showed that the severity of depression in the patient group could be predicted by aggressive and internalized anger, dissatisfaction with interpersonal relationships, and negative self-perception. The less severe depressive symptoms in the comparison group was predicted by lower level of education, dissatisfaction with life in general, and a positive self-perception.

Conclusion: Among both the patient and comparison groups, the depressive symptoms they experienced were closely related to how they perceived themselves, their life in general, and their interpersonal relationships. We therefore hypothesize that anger plays a significant role in the transformation of depressive symptoms into full-blown depression.

Key Words: Depression, anger, self-perception, interpersonal style

INTRODUCTION

Depression is currently a very common problem and can affect a person in any period of his/her life. Although the reported frequency and prevalence of depression change according to the method of investigation, the prevalence rate is generally between 9% and 20%. While the lifetime risk of having depression is between 8% and 12% among males, it is between 20% and 26% among females (Öztürk 2004). Nevertheless, this high rate of occurrence has made it possible to conduct many studies on the disorder.

An examination of the literature shows that self-perception plays an important role in depression. Individuals with a po-

sitive self-perception can handle the difficulties in their lives without losing their health; however, those with a negative view of themselves have problems (Joseph et al. 2003).

It is known that self-perception is not only a product of one's behaviors; interpersonal variables also play an important role (Safran and Segal 1990). In other words, an individual's general interpersonal style (Birtchnell 1993) and his/her perception of this style (Buren and Nowicki 1997) are reflected in the process of the interaction. There are several studies in the literature that report a strong relationship between depression, and self-perception, and interpersonal relationships (Burwell and Shirk 2006; Galambos et al. 2006). It is also known that one of the most important obstacles to smooth interpersonal rela-

Received: 26.01.2010 - Accepted: 12.07.2010

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tionships is anger (Wiseman et al. 2006). Each individual has their own way of responding to and coping with anger-evoking situations. Those with an effective and adaptive interpersonal style usually can solve such problems more easily (Lench 2004). Anger management is seen as an important variable, both for well-being and depression (Painuly et al. 2005).

The theoretical approaches to anger in depression, especially those that are analytically oriented, agree that repressed anger, specifically internalized anger, can lead to depression. As such, most studies conceptualize anger as internalized and externalized (Kendall 1970; Begley 1994). In summary, the related studies report that depressed individuals have ineffective interpersonal skills and experience more interpersonal problems (Libet and Lewinsohn 1973; Petty et al 2004), they do not manage their anger effectively (Ingram et al. 2007; Aydemir et al. 2002), and they have a negative self-perception (Galambos et al. 2006).

The present study aimed to investigate self-perception, interpersonal style, and anger, as a group, in the context of depression, ranging from mild depressive symptoms in healthy individuals to the more serious symptoms observed in patients diagnosed with depression.

METHODS AND MATERIALS

Sample

The study included a patient group (diagnosed with major depression according to the DSM-IV criteria by university or public hospital psychiatry clinic psychiatrists) and a comparison group that consisted of symptom-free individuals, randomly selected from the community, and matched with the patient group in terms of age, gender, level of education, and socio-economic status (SES). The patient group included 64 patients (49 female, 14 male [1 patient did not indicate their gender]) between 17 and 65 years of age. The comparison group consisted of 71 individuals (50 female, 21 male) aged between 18 and 56 years. Mean age of the patient group was 33.97 ± 10.74 years, versus 32.47 ± 9.68 years in the comparison group. Mean age for the entire sample was 33.16. .

Data collection instruments

Demographic Information Form

This questionnaire is composed of 34 items, some of which are open ended and others that are answered with a 5-point Likert-type scale. The participants were asked to report their perceptions of their current economic, physical, and emotional status, and their life in general on the Likert-type items. The responses to these 4 items were indexed as "dissatisfaction with life". Similarly, the participants were also asked to

rate their satisfaction with their family of origin, their relationship with their intimate partner, relationships with friends, level of loneliness, and the number of close friends. The responses to these items, as a total, were computed as a score for "dissatisfaction with interpersonal relationships". Higher scores indicated greater dissatisfaction.

Interpersonal Communication Style Scale (ICSS)

This is a 60-item, 5-point Likert-type scale developed by Şahin et al. (2007), which measures interpersonal communication style. Factor analysis during the scale's development process revealed 6 factors, namely, "dominant style", "avoidant style", "angry style", "insensitive style", "manipulative style" and "belittling style". The scale is reported to yield satisfactory psychometric information (Şahin et al. 2007).

Brief Symptom Inventory

This 53-item, 4-point Likert-type scale was originally developed by Derogatis (1992). It is reported to measure psychological symptoms in both patients and non-patients. The Turkish version of BSI was adapted for use in Turkey following 2 different studies with different populations; adults (Şahin and Durak 1994) and adolescents (Şahin, et. al. 2002). The Inventory was reported to be composed of 5 factor-based subscales by the Turkish adaptation studies: depression, anxiety, negative self, somatization, and hostility. In the present study only the anxiety and somatization subscales were used for analysis.

Multi-Dimensional Anger Scale

This Likert-type scale was developed by Balkaya and Şahin (2003) and consists of 5 dimensions; "anger symptoms", "anger-related situations", "anger-related thoughts", "anger-related behaviors", and "interpersonal anger". In the present study only the "anger-related behaviors" and "interpersonal anger" dimensions were used. The anger-related behaviors dimension has 3 scales: "aggressive behaviors", "anxious behaviors" and "trying to remain calm". The interpersonal anger dimension has 4 scales: "vindictive reactions", "passive-aggressive reactions", "internalization reactions", and "indifferent reactions". There scale's reliability and validity are well known.

Social Comparison Scale (SCS)

This 18-item, 6-point Likert-type scale measures how individuals evaluate themselves on 18 dichotomous dimensions, based on a comparison to others. The original version was a 5-item scale developed by Gilbert and Trent (1995). During the Turkish adaptation 13 items were added and a new version was developed (Şahin and Şahin 1992). High scores indicate a positive self-perception. Its reliability and validity are well known.

Beck Depression Inventory (BDI)

This 21-item inventory is widely used to measure the severity of the emotional, cognitive, and somatic aspects of depression. Its acceptability for use with the Turkish population has been reported (Hisli 1988, 1989).

Procedure

In order to control for the effect of the order in which the instruments were completed, they were distributed to the participants in a random order. The participants took between 20 and 40 minutes to complete the forms. The data were inspected to determine the instruments' reliability, and normal distribution for both the patient and comparison groups; 17 forms were discarded as outliers. Taking into consideration the cut-off point (17) suggested by Hisli (1988, 1989), the individuals with BDI scores >15 (n = 11) were discarded from the comparison group, and patients with BDI scores <20 (n = 13) were discarded from the patient group. Additionally, 3 individuals from the comparison group who reported they had a psychiatric diagnosis in the past were also excluded.

RESULTS

Correlations among the study variables

As previously mentioned, the aim of this study was to investigate the relationship between depression and the 3 variables studied individually in the literature. As such, the first step consisted of correlation analysis, the results of which are shown in Tables 1-3. Initially, the main variables we studied were correlated with each other (Table 1).

As Table 1 shows, anger-related behaviors, interpersonal anger reactions, interpersonal style, and self-perception scores were all significantly correlated with the depression scores

in the expected direction^{3/4}the correlation coefficients ranged between $r = .25$ ($p < 0.05$) and $r = -.60$ ($p < 0.000$). Moreover, these variables also correlated with the different psychological symptom clusters measured by the BDI. Two correlations that did not reach the level of significance were between anger-related behaviors, and self-perception and anxiety, and between interpersonal anger reactions, and somatization and dissatisfaction with interpersonal relations. The same variables were significantly correlated with dissatisfaction with life ($r = .208$, $p < 0.05$ and $r = .232$, $p < 0.05$). The correlations between self-perception, and dissatisfaction with life and dissatisfaction with relationships were $r = -.610$ ($p < 0.001$) and $r = -.603$, ($p < 0.001$), respectively. The correlation coefficients between depression score, and a general dissatisfaction with life and dissatisfaction with interpersonal relationships were calculated as $r = .71$ ($p < 0.001$) and $r = .75$ ($p < 0.001$), respectively.

Table 2 shows the relationship between the different anger-related behaviors; interpersonal anger reactions and the main variables of the study (psychological symptoms, dissatisfaction with life, dissatisfaction with relationships, and self-perception) (Table 2).

The highest correlations of the psychological symptoms (depression, anxiety, and somatization), and dissatisfaction with life and relationships scores were between aggressive and anxious anger-behaviors, and vindictive interpersonal anger reactions. Trying to remain calm was negatively correlated with anxiety, dissatisfaction with life, and dissatisfaction with relationships, and was positively correlated with self-perception. As the frequency of these behaviors (trying to remain calm) increased, positive self-perception also increased, and the symptoms and dissatisfaction scores decreased, and vice-versa. On the other hand, as internalized anger reactions increased, anxiety increased significantly. Additionally, as indifferent reactions increased, dissatisfaction with life decreased significantly.

TABLE 1. Intervariable correlations (total group).

	2	3	4.	5	6	7	8	9
(1)	.343**	.251*	.498**	-.596**	.773**	.707**	.747**	.711**
(2)		.548**	.340**	-.161	.167	.249*	.276*	.208*
(3)			.592**	-.226*	.218*	.084	.187	.232*
(4)				-.477**	.397**	.210*	.432**	.437**
(5)					-.710**	-.441**	-.610**	-.603**
(6)							.682**	.750**
(7)							.520**	.527**
(8)								.795**

* $P < 0.05$, ** $P < .001$

1: BDI; 2: anger-related behaviors; 3: interpersonal anger; 4: interpersonal style;

5: self-perception; 6: BSI anxiety; 7: BSI somatization; 8: dissatisfaction with interpersonal relations; 9: dissatisfaction with life.

TABLE 2. Correlations between various anger-related behaviors, interpersonal anger reactions, and symptoms (total group).

	1	2	3	4	5	6	7
BDI	.442**	-.190	.312**	.236*	-.010	.169	-.099
BSI Anxiety	.314**	-.237*	.341**	.215*	-.060	.274**	-.161
BSI Somatization	.290**	-.113	.274**	.109	-.180	.147	-.071
Dissatisfaction with life	.360**	-.247**	.359**	.263**	.081	.062	-.195*
Dissatisfaction with relationships	.502**	-.295**	.306**	.227*	-.003	.110	-.150
Self-perception	-.284**	.248**	-.275**	-.218*	.019	-.172	.189

*P<0.05, **P<0.001

1: Aggressive behaviors; 2: trying to stay calm; 3: anxious behaviors; 4: vindictive reactions;

5: passive aggressive reactions; 6: internalized anger; 7: indifferent reactions.

Table 3 shows the correlations between interpersonal style and the research variables. As can be seen, the correlations between interpersonal style, and depression and anxiety, and between somatization symptoms, and dissatisfaction with life and relationships were significant.

Those with higher dominant, avoidant, angry, indifferent, and manipulative interpersonal style scores also had higher depression, anxiety, somatization symptom, and dissatisfaction with life and relationships scores. The mentioned relationships ranged between $r = .21$ ($p < 0.05$) and $r = .67$ ($p < 0.000$). The same interpersonal styles were also highly correlated with anger-related behaviors and interpersonal anger reactions ($r = .207$, $p < 0.05$ and $r = .643$, $p < 0.000$). A negative correlation was observed between these styles and self-perception, ranging between $r = -.302$, $p < 0.001$, and $r = -.462$, $p < 0.001$. No relationship was observed between belittling style and the other variables, except interpersonal anger ($r = .438$, $p < 0.001$) and dissatisfaction with life ($r = .207$, $p < 0.05$).

Between group comparisons

A t-test comparison was made between the patient and comparison groups in terms of the research variables: interpersonal style, self-perception, anger-related behaviors, interpersonal anger, anxiety, somatization, and dissatisfaction with life and relationships. The results obtained after Bonferroni correction are given in Table 4a.

The results show that the patient group had significantly higher anxiety, somatization, negative interpersonal style, anger, and dissatisfaction with life and relationships scores, and that their self-perception was significantly more negative.

Table 4b shows the comparison between the 2 groups according to the various anger-related behaviors, interpersonal reactions, and interpersonal styles.

As the results indicate, the patients reported being significantly more aggressive, anxious when angry, and reacting vindictively in their interpersonal relationships. Those in the control group more frequently indicated that they try to remain calm when angry. When the 2 groups were compared in terms of their interpersonal styles, significantly more participants in the patient group reported that they used dominant, avoidant, angry, and insensitive styles.

Variables predicting the severity of depression symptoms

Since non-clinical populations also have depressive symptoms (Kumbasar 2000), we decided to investigate which variables were unique to the patient group, compared to the non-clinical sample. Consequently, 2 separate hierarchical regression analyses were performed for each group. The BDI scores of the 2 groups were taken as the dependent variable. The independent variables in the first step were demographic variables (age, gen-

TABLE 3. Correlations between various interpersonal styles and symptoms (total group).

	1	2	3	4	5	6
BDI	.242*	.496**	.446**	.387**	.330**	.14
BSI Anxiety	.210*	.474**	.366**	.340**	.333**	.075
BSI Somatization	.014	.299**	.226*	.251**	.140	-.071
Anger-related behaviors	.217*	.207*	.349**	.320**	.286**	.171
Interpersonal anger reactions	.496**	.401**	.643**	.354**	.481**	.438**
Dissatisfaction with life	.256**	.448**	.396**	.67**	.309**	.207*
Dissatisfaction with relationships	.297**	.487**	.368**	.246**	.233**	.156
Self-perception	-.302**	-.462**	-.378**	-.348**	-.320**	.152

*P<0.05, **P<0.001

1: Dominant style; 2: avoidant style; 3: angry style; 4: insensitive style; 5: manipulative style; 6: belittling style.

TABLE 4a. Comparison between the patient and comparison groups in terms of the research variables.

Variables	Patient group		Comparison group		t
	n = 64		n = 71		
	x	ss	x	ss	
Interpersonal style	141.71	29.89	116.34	26.41	4.73***
Anger-related behaviors	45.09	8.93	36.63	6.07	5.88***
Interpersonal anger	135.81	24.33	124.13	25.52	2.36*
Self-perception	68.90	15.56	85.30	10.91	6.29***
BSI anxiety	72.05	9.99	8.18	5.55	13.197***
BSI somatization	16.45	6.81	5.25	4.22	11.145***
Dissatisfaction with life	15.83	2.86	11.01	1.88	11.157***
Dissatisfaction with relationships	15.44	2.77	10.69	2.23	10.717***

*P<0.05, ***P ≤ 0.001

der, level of education, and income). In the second step anger-related behaviors (aggressive, anxious behaviors, and trying to remain calm) were entered into the equation, and interpersonal anger reactions (vindictive, passive-aggressive, internalization, and indifferent reactions) were entered in the third step. The interpersonal style variables (dominant, avoidant, angry, insensitive, manipulative, and belittling) were entered in the fourth step. For the fifth and sixth steps, dissatisfaction with life and relationships, and self-perception were entered, respectively. The results are shown in Table 5.

Table 5 shows that self-perception, with a 2% contribution to the change in the variance in both groups, was a common predictive variable for depressive symptoms of varying severity (F = 8.39 for clinical depression; F = 4.35 for mild depressive symptoms). The more severe depressive symptoms in the patient group, along with negative self-perception (Beta = -.21),

dissatisfaction with relationships (F = 10.86), internalized interpersonal anger reactions (F = 6.93), and aggressive anger behaviors (F = 5.34), altogether significantly explained 72% of the total variance in the scores. For milder depressive symptoms in the comparison group, lower level of education (F = 4.77) and dissatisfaction with life (F = 6.14) were the other 2 predicting variables. Altogether, including self-perception, these 3 variables significantly explained 33.4% of the total variance; however, for this group, the Beta for self-perception was .15, indicating a more positive self-perception.

DISCUSSION

The aim of this study was to investigate the relationship between some variables (anger, self-perception, and interpersonal style) and the severity of depression. These variables were

TABLE 4b. Comparison between the patient and comparison groups in terms of the anger variables.

Anger-Related Behaviors	Patient group		Comparison group		t
	n = 64		n = 71		
	x	ss	x	ss	
Aggressive behaviors	30.13	7.62	23.58	5.26	5.59***
Trying to stay calm	31.91	6.84	34.19	6.25	1.92*
Anxious behaviors	14.91	3.07	12.91	2.62	3.92***
Interpersonal Anger Reactions					
Vindictive reactions	62.79	18.20	52.91	16.15	3.03**
Passive-aggressive reactions	31.68	6.03	31.63	7.00	.046
Internalized reactions	33.49	6.61	31.77	5.75	1.525
Indifferent reactions	6.52	3.03	7.44	3.16	1.67
Interpersonal Style	Patient group		Comparison group		t
	n = 64		n = 71		
	x	ss	x	ss	
Dominant style	70.05	7.78	22.85	8.22	2.185*
Avoidant style	27.07	7.21	21.57	5.61	4.81***
Angry style	26.31	6.67	21.21	6.02	4.52***
Insensitive style	27.05	6.69	22.36	6.30	3.96***
Manipulative style	25.86	5.91	22.63	6.31	2.96**
Belittling style	10.22	3.36	9.66	4.11	.830

*P<0.05, **P<0.01, ***P<0.001

TABLE 5. Variables that predicted depression scores.

Group	Variables	R	R2	R2 Chg.	Beta	t	F Chg.	F
Depressed patients' depression	Aggressive behaviors	.50	.250	.250	.45	2.77*	5.34*	5.34*
	Internalized reactions	.69	.480	.230	.31	1.768	6.64*	6.93**
	Dissatisfaction with relationships	.84	.699	.219	.36	1.912	10.21**	10.86***
	Self-perception	.85	.72	.02	-.21	-.998	.995	8.39***
Comparison group's depression	Education level	.38	.146	.15	-.31	-1.87	4.77*	4.77*
	Dissatisfaction with life	.56	.313	.17	.44	2.68	6.57*	6.14**
	Self-perception	.58	.334	.02	.15	.91	.834	4.35*

*P<0.05, **P<0.01

investigated as a whole, so that their interrelationships would also be considered. With this aim in mind, 2 regression analyses were conducted based on the depression scores in the patient and comparison groups. The analyses showed that a large portion (72%) of the variance in the more severe depression scores was explained primarily by anger (aggressively expressed and internalized) and dissatisfaction with interpersonal relationships. Negative self-perception also made a small contribution. On the other hand, a smaller portion (33%) of the variance in the milder depressive symptoms was predicted by lower level of education, dissatisfaction with life, and a more positive self-perception. It is possible that for this group, dissatisfaction with life, if combined with a low level of education and a more positive self-perception could be perceived as "injustice" and end up in mild depressive symptoms. The more positive self-perception of this group might also have been an indication of the positive perceptual bias of the "normal" individuals (Ingram and Reed 1986). On the other hand, the experience of more intense anger, along with deteriorating interpersonal relationships and self-esteem, might be responsible for an increase in depression.

The results of the correlation analysis conducted with the total group supports this interpretation. An increase in anger-related behaviors (especially aggressive and anxious behaviors) was related to an increase in negative interpersonal style (especially dominant, avoidant, insensitive, and manipulative styles [Table 3]). On the other hand, an increase in negative interpersonal style was related to an increase in dissatisfaction with interpersonal relationships and life in general (Tables 1-3). It is possible that increased anger in the patients might have been related to the increase in vindictive styles they reported using in their interpersonal relationships (Table 4b). Correlation analysis revealed that an increase in vindictive behaviors was related to higher depression, anxiety, and dissatisfaction with life and relationships scores, while at the same time it was related to a decrease in positive self-perception (Table 2). An increase in anxiety might also explain the internalized anger reactions of the patients (Table 5). Table 2 shows that an increase in internalized anger reactions was related to an increase in anxiety. There is no doubt that inter-

nalization of anger reactions in interpersonal relationships could also lead to an increase in the severity of depression. Considering the items on the internalized anger scale (I think he/she does not care for me, I think of what I did wrong, etc.), it can be seen that it might be related to low self-esteem.

Internalization of anger is an expected reaction in depression (Begley 1994), and it can also be seen as an expression of aggression toward one's self. As the results of the present study were based only on correlations, there is no way to draw a causal relationship. Consequently, it is not clear whether or not the aggressive behaviors that predicted more severe depression symptoms in the patients were a cause or a consequence; however, if an aggressive interpersonal style was always present in an individual, it would not be wrong to assume that it would hinder their interpersonal relationships and lead to the exclusion of this individual from social relationships, resulting in the conclusion that they are unlovable and the possibility of depression. The literature reports that depressed individuals have negative self-perceptions (Galambos et al. 2006), negative interpersonal styles (Libet and Lewinsohn 1973), and dysfunctional expressions of anger (Ingram et al. 2007). In the present study, all the interpersonal styles, except belittling (dominant, avoidant, angry, and manipulative), were significantly related to depression, as previously reported (Libet and Lewinsohn, 1973). The belittling style was related to anger and dissatisfaction with life. The between group comparisons also resulted in similar findings, indicating that dominant, manipulative, angry, and avoidant interpersonal styles can discriminate between depressed and non-depressed individuals. It is possible that these styles are especially important for problems in interpersonal relationships, resulting in anger, which is an important component of depression (Ingram et al. 2007).

The relationship observed in the present study between depression, and dissatisfaction with life and interpersonal relationships was previously reported (Koivumaa-Honkane et al. 2004; Gotlib and Whiffen 1989). Dissatisfaction with life, whether it is conceptualized as a negative thought, as in the cognitive paradigm (Williams et al. 1997), or as a decrease in positive reinforcement, as in the behaviorist tradition (O'leary and Wilson 1986), is central to the well being of an individual. As

such, it was not a surprise that it was a predictive variable for the distress experienced by those in the comparison group.

Other studies have reported a relationship between a low level of education and depressive symptoms (Slone et al. 2006). In the present study, a low level of education was predictive of mild depressive symptoms in the comparison group, along with dissatisfaction with life and a positive self-perception (Table 5). It is possible that a low level of education might set the stage for dissatisfaction with life; however, when these 2 conditions, low level of education and dissatisfaction with life, coexist with more positive self-perception, they might lead to the experience of injustice and may be a forerunner of mild depressive symptoms in a “normally functioning” individual.

In conclusion, the results of all of the analyses (correlation, regression, and between-group comparisons) conducted in the present study show that there was a considerable relationship between depression, and interpersonal style, self-perception, and anger. Considering these findings as a whole, it can be hypothesized that a self-perception developed over time and the interpersonal style one develops based on this self-perception can be related to the level of satisfaction with life and relationships, and the level of anger experienced, which might lead to depression. A positive interpersonal style based on a positive view of one's self might offer protection against depression. An interaction that results in positive feedback and reinforcement might also be a source for a more positive self-perception and well-being.

Nevertheless, some questions remain unanswered by the present study, which might be important for future investigations. The study did not determine if the variables that were observed to be related to depression were a cause or a consequence of depression. Consequently, there is an apparent need for cause-and-effect studies, which can supply important clues to the interventions used to alleviate symptoms of depression. For example, if we know that anger is a precursor of depression, preventive measures could include anger management training. There is no doubt that a study designed to investigate the effectiveness of anger management or communication skills training based on follow-up measures would yield much more reliable information on causal factors of clinical depression.

Another limitation of the present study is related to the age and gender makeup of the sample. This unevenness in the gender make up is also found in the related literature; some studies are conducted with only females (Rinck and Becker 2005) or with a smaller number of males (Joorman et al. 2005). This is also the case in the present study. Even though we made every attempt to collect data from males, the fact that most of the patients that presented to the psychiatry clinics were female made this impossible. As such, the results should be interpreted with caution. It is possible that males might experience depressive symptoms in relation to different variables than those observed in the present study. Nevertheless, it would not be wrong to suggest that the findings offer important clues to the nature of depression, which should be tested in future studies.

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