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# The Relationship Between the Level of Revanchist Behavior and Emotional State and Sleep Quality

İzzet Fidancı[1], [MD]
ORCID: 0000-0001-9848-8697

Hilal Aksoy[1], [MD]
ORCID: 0000-0002-3330-9317

Duygu Ayhan Başer[1], [MD]
ORCID: 0000-0002-5153-2184

Duygu Yengil Taci[2], [MD]
ORCID: 0000-0003-2978-6863

Mustafa Cankurtaran[3], [MD]
ORCID: 0000-0002-8213-7515

[1]Hacettepe University Faculty of Medicine, Department of Family Medicine, Ankara, Turkey.

[2]Ankara Education and Research Hospital, Department of Family Medicine, Ankara, Turkey.

[3]Hacettepe University Faculty of Medicine, Department of Internal Medicine, Division of Geriatric Medicine, Ankara, Turkey.

Corresponding Author: İzzet Fidancı
Hacettepe University Faculty of Medicine, Department of Family Medicine, Ankara, Turkey.
E-mail: izzetfidanci@gmail.com

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Objective: The aim of this study is to examine factors that can affect revanchist behavior such as emotional state and sleep quality, and to evaluate the relationship between them.

Materials and Methods: 461 individuals at the age of 18 and above who referred to our polyclinic for any reason, and agreed to participate were included in the study via conducting a survey after their written consents were obtained. A survey that consisted of socio-demographic information in the first section, and "the Vengeance Scale", "the Pittsburgh Sleep Quality Index", "the State-Trait Anxiety Inventory" and "Beck Depression Inventory" in the second section was applied to the participants. The data were analyzed with IBM SPSS V23.

Results: 52.7% of the participants were male and 47.3% were female. The mean age of the study group was 37.4 ± 11.2 years. 51.4% of the participants had severe depression according to the Beck Depression Inventory, while 20.4% had moderate, 16.3% had minimal and 11.9% had mild depression. The median value of the revanchist behavior levels did not differ according to gender (p=0.257). The median value of the revanchist behavior levels in males were 82, while it was 75 in female participants. The median value of the revanchist behavior levels did not differ according to the educational background (p=0.727). A statistically significant relationship was not found between revanchist behavior levels and age, state anxiety, trait anxiety, Beck depression point and PSQI (p>0.05).

Conclusion: The absence of a significant relationship between revenge behavior and age, anxiety level, depression and sleep quality will help us to improve the quality of life of societies rather than personal psychological characteristics, and this behavior level that can also cause violence will be minimized.

Key words: Revenge, emotional state, sleep

## INTRODUCTION

Individuals, who are in constant communication in communal living, can sometimes disagree and have conflicts with each other, and can display harmful attitudes and behaviors such as humiliation, contempt, unjust acts etc. Although some individuals may not have directed harmful attitudes and behaviors towards others in reality, have not insulted them or treated them unfairly, there may be a false perception from others that they have done at least one or some of these things. Individuals who believe others display such painful attitudes and behaviors towards them, no matter what the reason is, might be unable to constrain their negative emotionality triggered by being perceived as worthy of such bad treatment. Even though they have such emotions, some individuals might want to relieve their pain by gravitating towards rational behaviors such as

limiting, restructuring or completely terminating their relationship with such individuals. On the other hand, some can struggle with regulating their negative emotionality they developed towards the people who treat them so poorly, such as intense anger, hatred, hostility, aggression etc. With the desire to have revenge that may arise from this situation and an "eye for an eye" understanding, they may want to hurt those who hurt them to make them pay [1-3].

Examining the relationship between personality traits and emotions of vengeance, it has been suggested that there is a strong relationship between psychoticism and neuroticism, which is one of the five-factor personality traits, and emotions of vengeance. For example, it has been stated that psychotic individuals might be more likely to seek revenge. It has been specified that psychotic individuals' tendency for non-empathic thoughts, aggressive and antisocial behaviors might facilitate their orientation towards revenge seeking behaviors. Similarly, it is thought that neurotic individuals might be more likely to seek revenge due to their tendency to easily get angry and anxious and act impulsively [4-7].

On the other hand, it has been suggested that deferential individuals having stronger empathic skills and behaving in a more selflessly and modestly in interpersonal relationships might decrease their emotions and behaviors of revenge and might facilitate forgiveness for them [8-10]. Behaviors and emotions of revenge are situations that people find difficult to accept and it can create complications in research due to its psychological basis. This can be considered among one of the research limitations. The aim of this study is to examine factors that might affect revanchist behavior, such as emotional state and sleep quality, and evaluate the relationship between them.

## MATERIALS and METHODS

Our study was conducted with observational, analytical and prospective methods between May – September 2020 in a family practice polyclinic in a university hospital. Individuals who were 18 years of age and older, who referred to the polyclinic for any reason and agreed to participate in the study were included in the study after they gave their

written consent. Before we started our survey, study approval was obtained from the Hacettepe University Non-Interventional Clinical Research Ethics Committee (Project No: GO-20/332, Decision No: 2020/09-11).

The participants were given a survey, which consisted of 4 questions evaluating their socio-demographic information in the first section, and a second section, which included "The Vengeance Scale", "The Pittsburgh Sleep Quality Index", "The State-Trait Anxiety Inventory" and "The Beck Depression Inventory". The necessary permissions were given for the usage of all respective surveys.

### The Vengeance Scale (VS)

The Vengeance Scale, developed by Stuckkless and Goranson, consists of 20 descriptive items and one dimension. Turkish adaptation study of the Vengeance Scale were conducted by Satıcı et al. Cronbach alpha internal consistency coefficient 0.91 and the test-retest reliability coefficient was 0.87, performed with 28 days' intervals [3]. The ranking of the scale is a 7-point Likert scale with the intensity options of the items ranging from, 1=Completely disagree to 7=Completely agree. High scores obtained from the scale show that the individual has high levels of seeking revenge. The internal consistency reliability coefficient of the scale has been found as 0.92, and its test-retest reliability coefficient has been found as 0.90 obtained with testing with four-week intervals. In VS's criterion-related validity study, it was observed that emotions of revenge were negatively related to empathy (r=- 0.38) and positively related to anger (r=0.56) [3,11].

### The Pittsburgh Sleep Quality Index (PSQI)

It was developed by Buysse et al. (1989) [12], adapted to Turkish by Ağargün et al. (1996) [13]. PSQI is a 19-item self-report scale that evaluates sleep quality and disturbances within the past month. It consists of 24 questions, 19 of the questions being self-report questions and 5 of the questions being questions to be answered by a partner or roommate. The scored 18 questions of the scale consist of 7 components. Subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication and daytime dysfunction. Each component is evaluated between 0-3 points. The total score of the 7 components gives the total scale

score. The total score varies between 0-21. The total score being bigger than 5 shows "bad sleep quality" [14,15].

## The State-Trait Anxiety Inventory

Anxiety can be in two manners, "state anxiety" and "trait anxiety". State anxiety is the individual's expression of complex emotive reactions emerging from stress in dangerous situations due to environmental factors. As for trait anxiety, it is the individual's tendency to be uneasy, worry, apprehensive and have intense emotive reactions independent from environmental worries [16]. The State-Trait Anxiety Scale was developed by Spielberger et al. in 1970 and adapted to the Turkish society by Öner and Le Compte in 1985. It is a Likert scale that measures state and trait anxiety levels separately with 20 questions. The scale, which was translated to Turkish and its validity and reliability studies were conducted in 1975, consists of state anxiety and trait anxiety scales with twenty items each. The scores vary between 20 (low anxiety) and 80 (high anxiety) [16].

## Beck Depression Inventory

It was developed by Beck et al. in 1961, with the purpose of measuring the behavioral results of depression in adults [17]. It can be applied to healthy and psychiatric patient groups. It is a scale that determines individuals' risk of depression and evaluates the level of depressive symptoms and intensity variation. It provides a four-point Likert scale measurement. The score range varies between 0-63. For intensity, it is interpreted as; 0-9= minimal, 10-16= mild, 17-29= moderate, 30-63= severe [18]. Subscale scores are measured with the cognitive-affective factor and somatic performance factor. The validity and reliability studies for the Turkish version of the scale were conducted by Hisli et al. [19], and its cut-off point was accepted as 17.

## Statistical Method

The data were analyzed with IBM SPSS V23. Suitability to normal distribution was examined with the Kolmogorov-Smirnov Test. In the comparison of data that do not fit the normal distribution, the Mann Whitney U Test was used for two groups, Kruskal Wallis Test was used for more than two groups. The relationship between the variables was examined with the Spearman Correlation Analysis. Data that did not fit normal distribution was given

as median (minimum – maximum). The significance level was accepted as p<0.05.

## RESULTS

52.7% of the participants (n=461) were male and 47.3% of them (n=218) were female. The mean age of the study group was 37.4 ± 11.2 (min:18, max:56) years. 31.5% (n=145) of the participants had an undergraduate degree, 24.5% (n=113) had a high school degree, 16.9% (n=78) had a doctorate, 10% (n=46) had an associate degree, 8% (n=37) had a graduate degree, 3.7% (n=17) had a secondary school degree, 3.3% (n=15) had a primary school degree. 14.5% (n=67) of the participants were students, 14.5% (n=67) were healthcare professionals, 13.9% (n=64) were teachers, 12.4% (n=57) were engineers or architects, 11.7% (n=54) were academicians. 51.4% (n=237) of the participants had severe levels of depression in the Beck Depression Inventory, 20.4% (n=94) had moderate, 16.3% (n=75) had minimal and 11.9% (n=55) had mild levels of depression. The examined sociodemographic characteristics and the classification of Beck depression scores of the participants are shown in Table 1.

The age median value was found as 38. The state anxiety median value was found as 51. The trait anxiety median value was found as 51. The Beck Depression score median value was found as 30. The PSQI median value was found as 11. The revanchist behavior level median value was found as 81 (Table 2).

The median value of revanchist behavior level scores did not differ according to gender (p=0.257). While the revanchist behavior level median value was 82 in males, it was found as 75 in females. The median value of revanchist behavior level scores did not differ according to educational background (p=0.727). While the highest revanchist behavior level score was obtained in the secondary school graduate group as 96, the lowest score value was obtained in the group with no educational background as 74.5. The median value of revanchist behavior level scores did not differ according to occupation (p=0.492). The median value of revanchist behavior level scores did not differ according to the Beck depression levels (p=0.844) (Table 3). Also, there was no relationship between the subsections of the PSQI and revanchist behavior.

**Table 1.** General characteristics of the participants

|  | Mean | Standard Deviation |
| --- | --- | --- |
| Age | 37.4 | 11.2 |
|  | Frequency (n) | Percentage (%) |
| Gender |  |  |
| Male | 243 | 52.7 |
| Female | 218 | 47.3 |
| Educational background |  |  |
| None | 10 | 2.2 |
| Primary School Degree | 15 | 3.3 |
| Secondary School Degree | 17 | 3.7 |
| High School Degree | 113 | 24.5 |
| Associate Degree | 46 | 10.0 |
| Undergraduate Degree | 145 | 31.5 |
| Graduate Degree | 37 | 8.0 |
| Doctorate | 78 | 16.9 |
| Profession |  |  |
| Student | 67 | 14.5 |
| Health worker | 67 | 14.5 |
| Engineer-architect | 57 | 12.4 |
| Academician | 54 | 11.7 |
| Teacher | 64 | 13.9 |
| Police | 45 | 9.8 |
| Unemployed | 55 | 11.9 |
| Other | 52 | 11.3 |
| Beck depression levels |  |  |
| Minimal | 75 | 16.3 |
| Mild | 55 | 11.9 |
| Moderate | 94 | 20.4 |
| Severe | 237 | 51.4 |

**Table 2.** Descriptive Statistics

|  | Median | Minimum | Maximum |
| --- | --- | --- | --- |
| State Anxiety | 51 | 20 | 80 |
| Trait Anxiety | 51 | 20 | 80 |
| Beck Depression Points | 30 | 0 | 63 |
| PSQI | 11 | 0 | 21 |
| Revanchist behavior Levels | 81 | 20 | 140 |

Note: All of the test results show skewed distribution.

A statistically significant relationship was not found between revanchist behavior levels and age, state anxiety, trait anxiety, Beck depression scores, PSQI (p>0.05) (Table 4).

**Table 3.** Comparison of the results of the test scores for revanchist behavior according to groups

|  | Median (min-max)*** | Test statistics | p |
| --- | --- | --- | --- |
| Gender* |  |  |  |
| Males | 82 (20 - 140) | $X^2$=24868 | 0.257 |
| Females | 75 (20 - 140) |  |  |
| Educational background** |  |  |  |
| None | 74.5 (48 - 122) | $X^2$=4.448 | 0.727 |
| Primary School Degree | 76 (24 - 134) |  |  |
| Secondary School Degree | 96 (39 - 135) |  |  |
| High School Degree | 74 (20 - 140) |  |  |
| Associate Degree | 81 (20 - 137) |  |  |
| Undergraduate Degree | 75 (20 - 140) |  |  |
| Graduate Degree | 95 (20 - 138) |  |  |
| Doctorate | 86.5 (20 - 140) |  |  |
| Profession** |  |  |  |
| Student | 85 (21 - 140) | $X^2$=6.417 | 0.492 |
| Healthcare professional | 82 (20 - 140) |  |  |
| Engineer-architect | 87 (20 - 140) |  |  |
| Academician | 99 (22 - 140) |  |  |
| Teacher | 71.5 (21 - 132) |  |  |
| Police | 68 (20 - 138) |  |  |
| Unemployed | 70 (25 - 138) |  |  |
| Other | 74 (20 - 135) |  |  |
| Beck Depression Levels** |  |  |  |
| Minimal | 77 (20 - 140) | $X^2$=0.822 | 0.844 |
| Mild | 79 (22 - 134) |  |  |
| Moderate | 81.5 (20 - 140) |  |  |
| Severe | 79 (20 - 140) |  |  |
| Total | 81 (20 - 140) |  |  |

$X^2$: *Mann Whitney U Test**Kruskal Wallis Test statistics ***median (minimum – maximum)

**Table 4.** Results of the correlation analyses of the scores for revanchist behavior with other scales examined

|  | R | p |
| --- | --- | --- |
| Age | -0.038 | 0.421 |
| State Anxiety | -0.024 | 0.608 |
| Trait Anxiety | 0.065 | 0.166 |
| Beck Depression Scores | -0.041 | 0.378 |
| The Pittsburgh Sleep Quality Index (PSQI) | -0.044 | 0.346 |

r: Spearman correlation coefficient

## DISCUSSION

Even though the basis of the vengeance emotion is defined as feeling anger towards someone who hurt them and the desire to hurt them, it is an emotion created by more than one factor, including personality type and effectively genetic factors. Even though it did not have a direct relationship with the factors we compared with revanchist behavior levels in our study such as, emotional state, depression and sleep quality, the facts that the revenge levels were higher in some groups provided insight on the factors this complicated emotion is related to.

In addition to the knowledge that not everyone behaves with a desire to seek revenge, when examining the relationship between gender and revanchist behavior, in their study from 2006, Singer et al. found that males are more prone to revenge, and that they enjoy the feeling of vengeance more. It has been displayed that when male participants saw cheating opponents get struck by electricity, the reward circuit in the brain was more activated than females [20]. The conducted brain scan studies reveal that when we punish others' bad behavior, we are pleased with the situation [21]. In our study, a statistically significant relationship with gender was not found.

Research shows that 20% of homicides [22], 60% of armed assaults in schools are caused by revenge [23,24]. In our study, a relationship between educational background and vengeful emotion levels was not found, the highest rates of vengeful emotion levels were observed in secondary school graduates.

In their study, Ayduk et al. showed that individuals who have certain personality characteristics (in addition to neurotic behaviors, people who are more prone to anxiety and depression) are more prone to display aggressive reactions in the face of rejection. It was stated that a revenge assault can be a natural reflex in the face of rejection, however it was also stated that not everyone who is high in "rejection sensitivity" resort to violence [25]. In a study conducted by Yoshimura with 152 participants, the respondents reported experiencing anger, fearful anxiety, positivity, and remorse after enacting revenge. Anxiety was defined with the words; fearful, anxious, jittery,

doubtful [26].In our study, a relationship was not found between depression and anxiety states and revanchist behavior levels. However, results might have differed since their emotional states after taking revenge were not inquired.

In our study, the rates of thoughts of seeking revenge were found to be higher in academicians compared to other professions. Many people exhibit such grudge-holding behavior even in universities, which are supposed to be free, scientific and impartial organizations. It negatively affects both the life of the grudge-holding individual and the person this grudge is directed at, and it may result in irreparable harm. According to the research conducted with academicians, most of the academics who participated in the research hold a grudge [27,28].

Although revanchist behavior was frequent in academicians, there are many things to be done in order to understand the reasons for revenge in all work fields and to neutralize this emotion. In addition, further examination of these behaviors within organizational contexts will also contribute to defining and determining what is empirically consistent with revanchist behaviors, and how administrators can manage the major direct and side effects and consequences of revanchist behaviors thoroughly, and then other relationships in the scope of revanchist behaviors to improve organizational performance, since the desire for revenge not only disrupts individuals' mental well-being, it also disrupts interpersonal relationships due to its aggressive and violent nature [29].

In our study, following academicians and engineer-architects, the highest rates of revenge were found in students. Students who are dissatisfied with their grades attempt to seek revenge against their instructors by rating them poorly, hoping that poor ratings will result in the instructors' termination or other negative consequences [30].

In studies conducted with healthcare workers, the average desire for revenge was determined to be lower than the median value [1,31]. This situation might be because of the empathy abilities and communication skills of healthcare providers. Certainly, the effect of frequent on-the-job training regarding communication skills is undeniable.

Although there is an overarching purpose behind revanchist behaviors, it is correlated with a number of negative social and psychological behaviors including depression and physical aggression [32]. In our study we did not find any relation between revanchist behaviors and depression and anxiety status.

In their study, İyigün et al. [33] showed the relationship between sleep quality and mental health in areas such as body image, self-respect, depression, anxiety and stress in university students. Sleep disorders, stress disorders, psychosomatic disturbances etc. can be seen in individuals who display revanchist behavior or individuals who are exposed to revanchist behavior [34]. While studies related to the relationship between revanchist behaviors and sleep quality, one of the parameters we evaluated in our study, are limited, we think that due to the relationship between sleep quality and anxiety, emotional state and depression, it might also have an indirect effect on revanchist behavior.

The most important limitation of our study is that it was conducted during the COVID-19 pandemic period. During extraordinary periods such as pandemic and disaster periods, human psychology (psychological parameters such as mood and sleep quality, etc.) may vary. Also, due to the uncertainty and fear of infection during the pandemic period, the number of participants in our study was less than we planned. Another limitation of the study is that the questions can be approached with bias because of not accepting the feeling of revenge. In post-pandemic studies, there will be no additional psychological effects and a higher number of participants will be reached. In the literature, there are no studies related to the factors affecting the

behavior of revenge, and we think that our study will contribute to the literature in this sense.

## CONCLUSION

Revenge is an intense feeling found in all humans, and we can find it in theaters, novels, movies, and even laws written throughout history. According to evolutionist psychologists, the reason for this is the idea that if we respond to an injustice by taking revenge, they will not dare to do the same thing to us again. According to the Equality Theory, people feel sorry when they are not treated fairly.

Although there are differences in the definition of revanchist behavior, the concept that is explained is the same and it can be expressed that due to the numerous factors that affect this behavior, personality traits and genetic makeup might also have an effect. The desire to seek revenge not only affects the individuals' mental well-being, but also negatively affects the individuals' interpersonal relationships due to its aggressive and violent nature. The absence of a significant relationship between revenge behavior and age, anxiety, depression and sleep quality leads us to social healing requirements rather than personal psychological characteristics.

## CONFLICT of INTEREST STATEMENT

All of the authors declare no conflict of interest concerning the research, authorship or publication of this article.

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