REVIEW DERLEME

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# Management of Anger and Aggression in Adolescents: Traditional Review

## Ergenlerde Öfke ve Saldırganlığın Yönetimi: Geleneksel Derleme

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**ABSTRACT** Anger can be defined as: "An emotional response to an event that is perceived as a threat, violation or injustice." Anger and aggression can be seen in adolescents, particularly due to psychological, physiological and hormonal effects. When anger is experienced, people can react in four different ways. These are continuous anger, internal anger, external anger and controlling anger. It is more important for young people not to get angry, but to learn how to control their anger. In order to manage anger in adolescents in a healthy and effective way, it is necessary to make a psychosocial assessment and identify some situations that may cause anger. Inappropriate home environment, school environment that is not protective for adolescents, substance abuse, excessive use of internet and social media, unhealthy diet and eating disorders caused by this diet, adolescents' lack of social skills, some problems in romantic relationships, all kinds of abuse and neglect can play a role in the emergence of anger. It is not possible to control anger without knowing the adolescent and his/her characteristics. As uncontrollable anger in adolescents can lead to aggression, timely and appropriate psychosocial assessment should be carried out, necessary psychological support should be provided, necessary social skills should be acquired and patients should be referred to appropriate centres for psychiatric support if necessary.

**Keywords:** Anger; aggression; adolescent; psychosocial assessment

**ÖZET** Öfke; tehdit, ihlal ya da adaletsizlik olarak değerlendirilen bir olaya verilen duygusal tepki olarak tanımlanabilir. Ergenlerde özellikle psikolojik, fizyolojik ve hormonal etkilere bağlı olarak öfke ve saldırganlık görülebilmektedir. Öfke yaşandığında insanlar dört farklı şekilde tepki verebilirler. Bunlar sürekli öfke, öfkenin içe dönük olması, öfkenin dışa dönük olması ve öfkenin kontrol altına alınması olarak sayılabilir. Ergenlerin hiç öfkelenmemesi değil, öfkesini nasıl kontrol edebildiği daha önemli bir konu olarak düşünülmelidir. Ergenlerde öfke yönetimini sağlıklı ve verimli bir şekilde yapabilmek için de psikososyal değerlendirme yapmak ve öfkeye neden olabilecek bazı durumları ortaya çıkarmak gerekmektedir. Ergenin yaşadığı ev ortamının uygun olmayışı, okul ortamının ergen için koruyucu nitelikte olmaması, herhangi bir madde kullanımı, aşırı düzeyde internet ve sosyal medya kullanımı, sağlıksız beslenme ve bu beslenmenin yarattığı yeme bozuklukları, ergenlerin sosyal becerilerden yoksun olması, romantik ilişkilerde yaşanan bazı sorunlar, her türlü istismar ve ihmal öfkenin ortaya çıkmasında rol oynayabilmektedir. Ergeni ve özelliklerini bilmeden öfkesini kontrol etmek mümkün değildir. Ergenlerde kontrol edilemeyen öfke saldırganlığa da yol açabildiğinden yerinde ve zamanında psikososyal değerlendirme yapılarak gerekli psikolojik destek sağlanmalı, gerekli sosyal beceriler kazandırılmalıdır. Ergenlerin öfkesi yönetilemediği takdirde ergenlere destek olmak, ergenlerin yaşam kalitesini yükseltmek açısından uygun danışmanlıkla aile ile iş birliği içinde uzun süreli takip ve tedavilerin yapılabileceği merkezlere hastalar refere edilmelidirler.

**Anahtar Kelimeler:** Öfke; saldırganlık; ergen; psikososyal değerlendirme

Anger is defined as an emotional response to an event that is considered as a threat, violation or injustice. It regulates social and interpersonal behaviours together with physiological and psychological processes related to self-defence and coping with problems. Being angry, which can be seen from time to time as a component of developmental stages in adolescents, is a normal emotion that can

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be felt by everyone when expressed appropriately. People use this universal emotion as a means to get rid of mental and emotional pressure. In order for anger to be healthy and useful, it must not be denied or suppressed, but must first be accepted, recognised and expressed in a controlled manner. The level of this anger and the way it is expressed are very important. Anger beyond control may lead to a series of problems uncontrolled anger may lead to aggression. In this case, school, work and family life of adolescents are negatively affected by the deterioration of interpersonal relationships.[1-5] The aim of this review is to identify the various types of anger that can be challenging to manage among adolescents and to explore potential management strategies. As anger may escalate into aggression, intermittent focus will be given to this related issue.

## EPIDEMIOLOGY

Since the feeling of anger in adolescents can sometimes be seen as a normal reaction and is often seen together with some diseases, it seems very difficult to give precise epidemiological data. According to DSM-5 diagnostic criteria, disruptive mood disorder accompanied by anger and aggression can be seen in 2-5% of the population. Oppositional defiant disorder, intermittent explosive disorder, and conduct disorder are seen in 3.3%, 2.7%, 4% respectively and anger may accompany these disorders. Aggression and anger can also be observed in attention deficit/hyperactivity disorders, with a rate of 5% in community samples.[6] Since some diseases may be the basis of anger and aggression, more scientific studies are needed in the adolescent population.

## ETIOLOGY

The prefrontal and orbital frontal cortex has an important function in impulse control. These areas provide top-down control and act as a brake system in the body. On the other hand, regions that make up the limbic system such as the amygdala and insula trigger bottom-up emotions excessively. Disruption of the balance between these regions leads to excessive anger and aggression. In adolescents, impulse control may be difficult because the prefrontal and orbital frontal cortex completes its development later.[7] Some conditions that may play a role in anger and aggression are listed below:

**a. Prefrontal, frontal orbital cortex and temporal lobe lesions:** Tumours and traumas in these areas may lead to anger and aggression.[8,9]

**b. The effect of neuromodulators:** There are some neurotransmitter effects on anger and aggressive behaviours in human. Decrease of seratonin level may play a role especially in impulsive aggression.[10,11] Also, among catecholamines, dopamine and norepinephrine may play a role in aggression.[12] Dopamine play a role in the initiation and maintenance of aggressive behaviour.[13] Imbalance in glutamatergic/gabaminergic activity may contribute to hyperactivity of subcortical limbic regions. Gamma-aminobutyric acid Type A receptor modulators may increase aggression.[14] Neuromodular effects are summarised in Table 1.

**c. Genetic factors:** Twin and family studies show that aggression, especially impulsive aggression has a significant heritability (44%-72%).[15,16] Aggression together with antisocial behaviours may be observed as a result of gene and environment interaction.[17]

**d. Environmental factors:** In terms of social learning theory, anger and violent behaviours are types of learning that the individual performs in his/her social environment. According to social learning theorists, aggression, like all other behaviours, is acquired through learning. Adolescents and children's observation and cultural experience of aggression play an important role in the etiology. However, low socioeconomic level, lack of social support systems, history of sexual abuse and neglect,

**TABLE 1:** Neuromodular effect in anger and aggression.

| Physiopathological conditions related to the cerebral cortex | Physiopathological conditions related to the limbic system |
|---|---|
| Decreased serotonin levels | Decreased gamma-aminobutyric acid level |
| Dopamine and norepinephrine increase | Increased glutamate level |

and nutritional deficiencies have been associated with aggression.[18]

## TYPES OF ANGER AND AGGRESSION

When anger is experienced, people can react in four different ways. These are continuous anger, anger inward, anger outward and anger control.

**a. Trait anger:** Situational anger is an emotion that arises depending on the current situation and its intensity and duration can vary from person to person. It occurs when the person's purposeful behaviour is prevented or when the person perceives the event as an injustice or rejection. Situational anger also shows how severe subjective feelings such as moodiness, anger and rage are experienced. Trait anger, also known as anger tendency, is a concept that expresses how often situational anger is experienced. Individuals with high levels of trait anger get angry more often and experience more frustration, anger and threat perception. Therefore, these individuals experience more problems caused by anger in their relationships and it may be more difficult for them to manage their anger.[19,20]

**b. Anger-out:** It is the uncontrolled direct expression of anger in order to cope with stress caused by stimuli that triggers anger. People may express their anger outwardly with a mild tantrum, or they may express it verbally by shouting and swearing, or they may show it in a way that leads to physical aggression by breaking, throwing or beating someone.[21,22]

**c. Anger-in:** It is defined as keeping anger inside, having difficulty in expressing it and/or expressing it with passive reactions. Individuals who direct their anger inwards can mask their anger with passive reactions such as miscommunication, withdrawal, sulking and pouting. This anger may turn into physical violence, verbal/critical language (such as swearing) or self-harm.[23,24]

**d. Anger-control:** The ability to express anger appropriately is called "anger management". It is the best way to express emotions and manage anger without any violence. Anger control, which is important in personal and social development, also important for the protection of mental, physical and emotional health. The good anger control help individuals to establish stronger and healthier relationships with others.[25]

## REACTIVE AND PURPOSEFUL AGGRESSION

Aggression can be reactive or sometimes proactive, which is goal-oriented. These two types of aggression are functionally differentiated according to the intensity of emotions, the level of control over behaviour and the ability to comprehend the consequences of behaviour. In reactive aggression, individual defines situations that include taking revenge against perceived threats with anger. It is associated with anger, impulsivity and decreased threshold of inhibition. In purposeful aggression, the individual does not encounter a direct provocation event, shows a purposeful aggression for a desired goal and the expectation of reward motivates this situation. While reactive aggression is associated with high arousal level and negative affect, purposeful aggression is associated with low arousal and blunting of emotional reactions.[26,27]

## THE IMPORTANCE OF PSYCHOSOCIAL ASSESSMENT IN ADOLESCENTS

During adolescent assessment and counseling, it is crucial to conduct a psychosocial evaluation in addition to taking their medical history, personal and family history, and diagnostic laboratory tests after a physical examination. The psychosocial assessment helps to identify psychological and social factors contributing to adolescent's condition and provides insight into possible treatment options. Morbidity and mortality risks can be uncovered through conducting a psychosocial evaluation utilizing the Home environment, Education and employment, Eating, peer-related Activities, Drugs, Sexuality, Suicide/depression, and Safety acronym. This evaluation involves approximately 45-60 minutes and is condensed in Table 2. Early detection of potential hazardous scenarios and illnesses that may provoke the patient's anger and aggression can be achieved through such assessments. It is of utmost significance to discern the reasons underlying the patient's anger to effectively regulate and manage it.[28,29]

**TABLE 2:** Psychosocial assessment "HEEADSSS".

| |
|---|
| ■ **Home environment:** The presence of any problem at home where the adolescent lifes may affect the adolescent's health. The house where the adolescent lives and his/her life at home should be evaluated thoroughly. |
| ■ **Education and employment:** After home life, school is the second place where adolescents spend most of the time. If the person is not going to school, it should be questioned whether he/she is working or not. School or work performance are the components that give important clues about the person and should be evaluated. |
| ■ **Eating:** Eating disorders are frequently seen in adolescents and are increasing rapidly. Conditions such as obesity, anorexia neurosis, bulimia neurosis should be evaluated with a detailed dietary questioning. |
| ■ **Peer related activities:** Adolescents' social activities change rapidly over time. Learning about the activities of young people and making some suggestions to them positively affect both their social communication and their physical and mental health. |
| ■ **Drug use and abuse:** Substance use is an important issue in young people and should be questioned carefully. Since smoking cigarettes is a transitional substance, it is the first substance to be questioned. |
| ■ **Sexuality:** Problems related to sexuality, sexual activities and sexual life are usually the most difficult topics for adolescents to discuss with the physician. Counselling on this subject is an important part of preventive medicine. The questions directed to the adolescent sexuality should be selected by taking into account the pubertal period of the adolescent. |
| ■ **Suicidality/depression:** It is known that approximately half of the mental illnesses in adulthood start in adolescence. Therefore, it is important to evaluate young people mentally and to provide necessary counselling with psychologist, social worker and/or psychiatrist services. |
| ■ **Safety:** There is an increase in risky behaviours especially in middle adolescence. It is known that a large proportion of mortality in adolescence is caused by preventable causes. Identifying the risks and counselling can be effective in reducing adolescent mortality. |

HEEADSSS: Home environment, Education and employment, Eating, peer-related Activities, Drugs, Sexuality, Suicide/depression, and Safety.

## CONTROL AND TREATMENT OF ANGER AND AGGRESSION

**a. Primary prevention:** Similar with many diseases, primary prevention, that is, investments to be made in preventive health services and adolescents should be the main principle in the treatment of anger and aggression. In general, , providing support to parents from low socioeconomic levels, providing pre-pregnancy education to mothers and providing necessary controls, preventing substance abuse, providing pre-school education opportunities for children are the basic items of primary protection. Community involvement is also necessary for constructive support for adolescents. In prevention programmes, the peer education model can be beneficial in terms of ensuring that young people avoid unhealthy behaviours. The main principle of peer education, which is an important strategy in health promotion, is based on responding better to people who are close to them in terms of both experience and age. With the help of volunteers and the budget allocated, many adolescents can be reached easily. The quality of the programme is important in terms of reaching the targets.[30-32]

Some techniques are useful in primary protection: In order to be able to use some of the techniques, firstly it is necessary to recognise the anger. Once the anger is recognised, the person can then put some solutions into action. Anger can be taken under control before it gets out of control. So, at first anger should be recognised. Anger is graded between an imaginary degree 1 and 10, which we call anger-meter. One defines a calmer state where there is no anger and 10 defines a state where there is a risk of losing control with intense anger. A person does not suddenly reach a state of high anger. Therefore, if each person acts by reviewing the anger meter, this situation can be dealt with without intense anger. In a situation where anger is gradually rising, a break, deep breathing, walking can often be useful. If the threshold of anger is rising, it is necessary to stop and take a break from anger. You can use words or phrases such as "calm down", "calm down", yoga-like exercises that are not tiring may be useful. In order to put these into practice, these techniques need to be used in practice and automatised.[33-36]

**b. Secondary prevention:** Treatment of uncontrollable anger and aggression in adolescents should

be carried out in collaboration with an adolescent health specialist, child psychiatrist and clinical psychologist. Cognitive behavioural therapies and mindfulness trainings are widely used and found to be effective in anger management. Cognitive behavioural therapy (CBT) has been found to effectively manage and reduce anger-related emotions and behaviours. Through cognitive behavioural therapies, erroneous thoughts are replaced with correct thoughts.[37,38]

In addition to CBT, mindfulness-based therapy is widely used to treat anger and aggression. It has been observed that mindfulness training reduces amygdala activity. Studies show that mindfulness-based CBT is more effective in treating anger and aggression than other behavioural treatments. This is probably because mindfulness-based CBT improves cognitive and neural abnormalities related to anger.[39,40]

**c. General treatment and management:** Treatment of some underlying diseases such as attention deficit/hyperactivity, behavioural disorders and depression is important. In the treatment of maladaptive anger and aggression, Selective serotonin reuptake inhibitors, antipsychotics, mood stabilisers can be used in appropriate cases in accordance with the diagnosis in addition to CBT. Drug treatment alone is not sufficient in adolescent patients. Treatments should be individualised by considering underlying conditions together with other treatment modalities.[41,42]

**d. Management of the emergency patient:** In pediatric emergencies, we occasionally encounter patients with a high degree of aggression and anger. First, treatment should be carried out in an environment that will ensure the safety of both staff and patient, if possible with a security escort. It is necessary to pay attention to the items in the environment and on the patient that may cause any injury. If the degree of aggression is mild, the problem should be tried to be solved by reducing environmental stimuli in a calm manner. If this method does not work, 25-50 mg diphenhydramine can be administered orally. In moderate aggression, haloperidol/risperidone 0.5-1 mg orally may be given together with behavioural methods and diphenhydramine may be continued. In severe aggression, isolation and detection should be performed by remaining calm.[43,44]

## CONCLUSION

In conclusion, anger is a universal, natural and humanal emotion. Even if a controllable anger is not pleasant, it has a protective function and regulates emotions. Not the absence of anger, but the high degree of anger and its leading to aggression should be seen as a problem. It is important to be aware of the underlying causes of anger and aggressive behaviours of adolescents and to regulate their follow-up and treatment with both cognitive and behavioural therapies, drug treatments and to refer them to appropriate units.

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