

Explaining the Bases and Fundamentals of Anger: A literature Review

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Abstract

Introduction: Anger is one of human beings fundamental emotions. Susceptible environments of high anger outbreak comprise military and clinical settings. The aim of the present study was a conceptual consolidating of the theoretical constructions of anger, differentiation from other alike constructions and grounding a theoretical base for future studies.

Method: In the present systematic review, keywords including “anger, hostility, aggression, violence, impulsivity, anger and religion, anger and military, anger construction, anger and health, anger and society” were searched in “PubMed, ScienceDirect, Google Scholar, Google Patent, MagIran, SID, Proquest, Ebsco, Springer, IEEE, Kolwer, & IranDoc” searching engines. Due to the relation of the different parts of studies, academic publishing, publishing after 2000 and the Jadad system, relevant sources were selected. The manuscripts were then finalized by the evaluation of five experts in the anger domain via the Delphi method.

Results: 20 distinctive definitions, 4 related major constructions, 4 major classifications, incidence rates in varied populations, situations in military and clinical settings, and causes of anger have been distinguished.

Conclusion: conducting systematized studies according to unified theoretical constructions, would better show the anger status in different clusters of the society. In high-risk environments (e.g., military and clinical environments) anger management trainings are mandatory before and during services.

Keywords: Anger, Aggression, Violence, Systematic Review, Delphi Method, Jadad Method

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Introduction

Emotions are subjective, biological, goal-directed, and are a social phenomenon. Innate phenomena which occur in different individuals in similar circumstances, seldom have influence from cultural and learning situations, and elicit determined physiological responses. One of the fundamental emotions in human beings is anger. Anger may range from a transient irritation to a full outrage. However, it is considered as a natural phenomenon and like other feelings and emotions, is a sign of mental health, hygiene, and human affects [1, 2]. Anger could be considered as desirable, because, it is a way for a human to show off her/his negative feelings. In addition, it is the underlying motif of many courage and valor actions in battle and military situations. Nevertheless, high levels of anger cause many problems. Blood hypertension and other bodily changes resulting from anger, make thinking and decision-making procedures difficult and may harm physical and mental health [3, 4].

Contradictory to commonsense, anger is not just a negative emotion, like aggression and hostility; it is a normal emotion and a transcendental and a universal feeling [5]. Moreover, anger can act as a character armor in some way [6]. If one can present her/his anger in a positive way, it could be considered as a healthy function, and vice versa, if the anger presentation outrages, it can damage individual and her/his

surrounding social environment [7]. While many philosophers and authors have warned about the consequences of spontaneous and uncontrolled anger, there is no consensus about the intrinsic value of anger among them. In some situations, anger expression can be used as a manipulation strategy for social influences.

Most of the time, anger is a result of harmful and/or unexpected interpersonal relations. If there would come any kind of conflict and dissatisfaction in interpersonal relations, it might be a trigger of frustration and anger. On the other hand, anger can also develop dissatisfaction by increasing the annoyance and hence, this void cycle can increase tension in social aspects of life. Anger, even if not expressed, could increase hostility of individual and harm his actions and functions in the context of interpersonal and social situations, adaptation, goal achievement, family life, and job opportunities [8, 9].

One of the acute contexts of the expression of anger is in military situations. In military environments, anger expression and aggression is usually considered as a way to compensate feelings such as shame, inferiority, irritation, hurt, and unassertiveness in front of superior personnel [10]. The risks in regards to the expression of anger in military environments among military personnel as well as anger expression towards their family members are high [11, 12]. Clinical environments are another focal point of anger expression. Considering the lasting and unpleasant influences of



anger and the consequences of aggressive actions and the reactions towards clinicians as well as its probable and potential effect on therapeutic decision-making procedures, one of the most important issues in clinical settings is optimal dealing with anger episodes and the restriction of such events. These, indeed, need a great knowledge of fundamental and underlying factors of anger activation in individuals [13].

Studies on anger and related constructs are in paper and books (section) in both Persian and English. However, no published work is devoted to comprehensively analyzing the construction of anger. However, in many alike studies different constructions have been assessed and examined (such as aggression, hostility, violence, etc.). The present paper tries to conceptually consolidate the theoretical construct of anger as well as clarifying and differentiating it from alike constructions, in order to provide a paved way for future studies about anger, and anger management and control.

Methods

The design of the present study was a systematic review which is a review study that focuses on research questions. In a systematic review, the effort is put to collect, recognize, evaluate, select, and synthesize all evidence related to research questions [14]. The study population consisted of all the published work about anger in both Persian and English journals and books. The keywords of the study were anger, hostility, violence, aggression, impulsiveness, anger in military, anger constructions, anger and society, anger and health. The search was done according to aforementioned keywords in searching engines including ScienceDirect, Simorgh, IranDoc, PubMed, Magiran, SID, Proquest, Kolwer, IEEE, Springer, Google Scholar, Google Patent, Ebsco, Taylor and Francis in order to find the most relevant and accessible academic work. The entrance criteria comprised subjective relevance to the study keywords, relevant to the study, being published by academic institutions and published after the year 2000. In addition, other important indices of the relevance of the resource were their title and level of relevance which had been indicated by searching engine. To evaluate the founded resources, the Jadad Scale was used. The Jadad Scale which is also known as the Oxford quality scoring system, is a process to independently assess the quality of the methodology of the study [15]. Papers which got scores two and upper in the Jadad scale were chosen as final samples. Moreover, in order to increase the validity of the results and to reduce the biases in final analysis, the Delphi method was implemented. The Delphi method is a way to finding out innovative and reliable ideas, and/or to provide desirable information for decision-making. This method is a structured process to collect and classify the available knowledge of professionals and experts according to dialectical logic [16]. In the present study, applying the Delphi method consisted three consecutive steps: first, the idea of the study was sent to five clinical psychologists who were experts on anger management and research, and they were asked to give their suggested contents of the study. In the second step, their ideas were mixed up and returned and asked to identify whether the contents are acceptable in their

points of view. In this round, they changed some of the contents. In the third step, their new headlines were mixed up again and given back to them to reassess the contents. The headlines in this step were fixated and no changes had been made. This headline consisted the final results of this study (table 1).

Table 1. Delphi method steps

Round	Content
1	Anger definition, anger classification, anger etiology, aggression, aversion, hostility, violence, anger in religion, anger in military,
2	Anger definition, anger classification, anger etiology (biological, psychological), impulsiveness, aggression, aversion, hostility, violence, anger in military, anger in clinical settings
3	Anger definition, anger classification, anger and alike concepts (aggression, hostility, violence, and impulsiveness), anger epidemiology, anger etiology (biological, psychological, and neurophysiological roots), anger in military, anger in clinical settings, anger consequences.

In order to study the theoretical constructs of anger, 320 journal papers and 184 book (chapter)s had been evaluated from which, 85 journal papers and 93 book (section)s were used according to the entrance criteria. In addition, according to the criteria of systematic review, 36 journal papers were considered as the bases of the present paper. The most important ethical issue of the present paper, was the copyrights of the authors which has been respected throughout this study.

1. Anger definition

Anger has been variously defined by psychologists, philosophers, and scholars. However, two issues are common among them all [17]:

1. The principal anger factors includes threats, frustrations, and obstacles in the way to the personal goals.
2. The aim of the anger, is usually defense, fight, or destruction.

There is no consensus about an accurate definition of anger and the concept has been used in different meanings in common language. In fact, anger is an emotion, which could be said in short, that ends in aggression. Anger is an affective emotional state which ranges from mild irritation to savage outrage and often shows up when the way to achieving goals or satisfying needs are blocked [18]. On the basis of the present research, 20 main definitions about anger were found which are implemented in specific contexts [19].

2. Anger-related constructs

Often, authors have considered some phrases and constructions homogeneous and synonym with anger, although they are different formally and in essence. Therefore, they have assessed and evaluated these constructions analogous to anger which has produced many problems of analysis, generalization and interpretation of the study results. These phrases include aggression, hostility, violence, and impulsiveness.

There are significant differences between anger and aggression in professional investigations. Human aggression is defined as any behavior which is done with the aim of harm or

destruction to one other [20]. Aggression is considered as hostile, offensive, coercive, and/or oppressive behavior or character and could occur as retaliation or without any distinct motive. In social sciences, aggression is an intention to make harm or an action to increase social dominance. Predatory or defensive actions within varied species are not considered as aggression. Aggression ranges from relational (verbal, and/or nonverbal) to physical actions and is distinctive from assertiveness [21].

Another construct is hostility. Anger points to a kind of emotion and is a negative reaction to an intention from which the individual is informed. Nevertheless, hostility is a kind of attitude including negative awareness about the interpersonal relations [22]. Hostility is considered as a kind of psychological compulsion and extortion which is an effort to suppress the reality in order to represent the desired feedback, even if it is accompanied by bullying actions from individuals and groups in different social situations with the purpose of the approval of presumptions [23].

One of the major consequences of anger is violence which includes the intentional use of power or physical force, in the form of perceived or real threat against an individual, group, and/or community of people and has a high risk of injury, death, psychological trauma, mal development, and/or deprivation. This definition, emphasizes on intentionality of the action itself, without the consideration of its consequences [24]. In another definition, any aggressive action in physical, social, economic, and/or psychological form(s) which is done for the accomplishment of one's goals without the consideration of other's intentions, is called violence [13]. Violence occurs whenever the balance between impulses and internal control becomes disrupted. Any situation in which aggressive impulses are increased in the context of reduction of control, can end in violence. It shall be regarded that defining the consequences of violence just in terms of injury or death, only confines the prompt understanding of all influences and effects of violence on individuals and the society [25].

Impulsiveness is a multifactor construct which includes an attitude towards action on the basis of a caprice and represents an action/behavior of having no foresight, thought, or consideration of consequences, as it induces [26]. Impulsive actions are typically weak, naïve, high risk, and have no congruence with their situation of performance and often result in undesirable consequences which puts successful goals and strategies in danger [27]. The construction of impulsiveness comprises from at least two distinct components: acting without a fair amount of insight which might

be (not) functional; and the preference of short-term gains to long-term gains [28].

3. Anger classifications

Typically, three dimensions of physiological, social, and psychological (cognitive) aspects are found in descriptions and expressions of people about their anger. The physiological domain is about physiological and somatic changes in the body which occurs in the confrontation with situations of the annoyance of feelings of limitation [29]. Social and psychological (cognitive) domains explain personal interpretations of perceived anger. In other words, it could be said that individuals' interpretations of anger are bound to social and cognitive components of anger in people's surrounding environment. On the basis of physiological perception of anger, individual's reactions are regulated by rational and irrational beliefs, past experiences, and interrelation of events with each other. Therefore, according to action dimensions of anger, individuals respond differently considering the type of the stimuli and their own cognitive settings. Some people tend to repress, bear, and control their anger, while others try to show off their anger in some way. These anger confrontations are completely influenced by the society and social environment of the person [30]. Major classifications of anger are presented in table 2 [31].

4. Epidemiology of anger

Information about the prevalence of anger is not clear, because, many studies in this domain have surveyed the prevalence of violence, aggression, and hostility rather than anger. In addition, these surveys have neither investigated the prevalence in certain periods of time in the mass population, nor reported the prevalence rates. Therefore, estimates in this area shall be interpreted from the descriptive tables of these surveys. Despite these limits, information shows that the prevalence of anger and aggression is high in the society. In a study about impulsiveness in Rasht, it appeared that the prevalence of anger in mothers is 62.32% [32]. In a study about anger expression and control in parents, data revealed an average level of 42.7% of anger expression in the population [33]. In a study on female and male students of the University of Tehran, authors reported that 38.3% of the university students express high levels of anger [34]. In another study on female and male students of the University of Tehran, 32% of the population reported high levels of anger expression in their everyday life [35]. Furthermore, some authors have found in their study on the male students of the Kharazmi University that 40% of the population reported high levels of anger experience and expression [36].

Table 2. Classifications of Anger

Classification	Author	Features
Dualistic classification of anger	The center for psychiatry and neurology of USA (2013)	Aggressive Anger: Bullying, brutality, destructiveness, grandiose, distressing, harmful, annoying, manic behaviors, selfishness, threatening, blaming, unpredictability, hateful actions Passive Anger: Apathy, unsympatheticity, escapism, defeatedness, obsessive behaviors, mental abuse, cryptical actions, stealth, self-blame, self-scarification.
State-trait anger theory	Spilberger, et al (2009)	State Anger: Describing anger feelings which are experienced by individuals in any time and could range from irritation to rage outbreak. Trait Anger: A global tendency in any individual to experience angry feelings.

Health/un-healthy anger	Potter Efron (1996)	<p>Healthy Anger: Ends in self-preservation, defends one's values and bounds, protection and regain of rights, confrontation with others' anger.</p> <p>Unhealthy Anger: People use it to achieve goals other than healthy anger, and is a means to achieve goals other than extirpation of risks and dangers.</p>
Islamic classification of anger	Allame Madjlesi (1974)	<p>Fall Short: Weakness or having no anger power</p> <p>Temperance: Anger comes timely and proper so that it does not go further than divine laws and rationale, and rather, follows them.</p> <p>Extravagance: Anger dominates self and proprioum to the extent which one's actions and behaviors are going further than divine laws and rationale.</p>

5. Anger in military and armed personnel

In military environments, people with high levels of flexibility and ability to adapt to military disciplines (hierarchical system of official power, mere obedience of seniors, etc.), have the least amount of anger expressions and can direct their negative feelings derived from being repressed. This can be done by increasing their physical ability, martial capabilities, education, martial knowledge, etc., and show courage and valor in different situations in order to promote military hierarchy. Therefore, these personnel usually show less angry actions and/or aggressive behaviors in compared to others. However, people with less of aforementioned adaptive capabilities, make schema of omnipotence and take ultimate control of power and cannot then, accept the current situation. These people are usually unable to control their sense of self-expression and their need to seek power. Hence, they become angry and aggressive and make many problems in military systems [37]. The risks and threats of anger expression in military environments are high, because, military personnel have access to knowledge and instruments of anger expression (martial arts techniques, hand-to-hand combat techniques, cold weapons, hot weapons, etc.), and there are several reports of injury and harm to comrades as well as family members in terms of physical abuse, sexual abuse, organ impairment, mutilative behaviors, and even homicide [11]. Moreover, many spouses and family members of the military personnel complain about their anger expression and aggressive behaviors [12].

In the mere published studies about the US military personnel, it is reported that in these populations the risk of anger expression and aggressive behaviors are high and specifically, when these staff are under job stress and train, generally 42% of male personnel show physical violence against their spouses, 90% show verbal violence, and 100% have reported to have virtually used psychological violence against others [38].

Several studies have been conducted on the military personnel in Iran investigating varied dimensions of mental health. However, there are just a few studies devoted to anger assessments or have used instruments which assess anger, its levels, and prevalence. In those that used such instruments, the reports have not provided exact information about the prevalence rates. As there is no access to such databases, the accurate evaluation of anger in this population was not possible in the present study. According to a study on the students of a military university, "tendency towards being nervous" which is the main context of irritation and anger

in people, reduced significantly after three educational semesters which included full military education [39]. Studies on Iranian border forces show pathological high levels of anger among them which indicates an urgent need to interventions based on anger management and control among them [40, 41]. In a recent study on mental health of non-armed military staff, including office staff, industrial-production, service, educational, and research personnel, it revealed that they are at a high risk of anger explosion and in need of anger management and control interventions [42]. Although estimated cut-off points for the military-standardized instruments are higher than the civil population, these results show a great need for anger management and control in military staff [41].

One important aspect in military services is becoming a prisoner of war (POW). Becoming a POW as an inevitable result of a war, produces many psychological problems for POWs. Despite many studies about former POWs, there are a few published studies about the current POWs, probably because of security issues. This shall be noted that mental status of these two states (formerly and currently being a POW) as well as their physical and social states are completely different. Anger has a bold role in this situation and it has been revealed that the level of anger can influence the captivity period of military staffs as well as their interactions with the prison environment [43]. In a brilliant study, psychological characteristics of Iraqi POWs in Iran was assessed in the time of the captivity. The results indicated that the levels of anger expression were related to levels of education, history of past psychological and/or psychiatric problems, history of past physical illnesses, having children and the duration of captivity. Increase in the duration of imprisonment resulted in an increase in depressive signs and a reduction in the aggression in POWs. Level of education was an important protecting factor against anger and aggression, so that higher levels of education were negatively related to anger expression [44].

6. Anger in clinical settings

In hospitals, especially psychiatric and ambulatory units, psychiatric urgencies include any confusion and disturbance in thought, feeling, or behavior which need immediate therapeutic intervention. For varied reasons, the number of urgency patients are increasing; the main reason is thought to be violence [45]. One of the most important reasons of which people go to emergency units are psychotic states in which is lost in reality. People under acute psychotic crises,

act under influence of their delusional and/or illusion system which highly increases the rate of angry, aggressive, and even violent actions against others [46].

Moreover, in bedridden patients, those who show aggressive action profiles, may beat others, claim to need protection against themselves, break stuffs, or try to leave their residence. Often, Psychotic patients have no insight about their disorder and their acting-out, uncontrolled and blind-fold behaviors and actions. This is why they make diagnosis and therapeutic rapport hard. These people refuse patient role and may show domineering behaviors and actions, make therapists angry, and/or do violent attacks against them [47].

3.7. Origins and causes of anger

Angry people usually find their causes of anger in some aspect of voluntarily, personal, and controllable actions and behaviors of other people. Nonetheless, this explanation is based on angry person's intuition that as a result of anger emotions have lost the capability of self-monitoring and objective observability. Anger could have multidimensional origins which some of them are events far from the individual. However, people often merely find more than one cause for their anger. Anger experiences are stemmed in temporal-environmental context and problems which apparently do not end in anger, and can gradually and fundamentally make some bases for triggering an anger expression which is attributed to focal and surrounding elements [48]. It appears that in order to make a better understanding of anger, there is a great need to know its fundamentals. In general, in the reviewed references, origins of anger were inspected in psychological (attachment theory, sensitivity to reinforcement theory, and five-factor model of personality), physiological, neuropsychological, and religious (Islamic) domains [49] which are abstracted in table 3.

Discussion

According to the results of the present study, it appears that from the given 20 definitions, the definition of the American

Psychological Association of anger is more applicable which sees anger as an "emotion that relates to individual's psychological interpretation of being under attack, abused, or rejected, and is considered as a tendency towards reaction by retaliation" [3]. In addition, anger has proven to consist of three levels [50-51]:

A) Cognitive level which consists of issues that lead in arousal.

B) Somato-affective level which comprised issues about tension, irritation, and agitation

C) Behavioral level which includes withdrawal and quarreling

In analyzing anger constructions, the differentiation of aggression, hostility, violence, and impulsiveness shall be considered. Keeping in mind that as they have some similarities, many authors have mistakenly used them as synonymous, whereas they have different literature and empirical backgrounds and their assessment instruments are completely different from each other.

In the classification of anger, except the State-Trait Anger Theory [52], which classifies anger on the basis of subjective feelings and personality traits, authors have classified anger according to its behavioral output. Therefore, it appears that the State-Trait Anger Theory is the best way of classifying anger for the reason of measurement and the assessment of anger among the inspected classifications.

The prevalence of anger in a mass population varies from 16.25% among adolescents [18], to 30-40% in university students [34, 36], and 90% against family members in military personnel [38]. This shows a great need of global and unified surveys throughout all the society sectors to accurately estimate the anger expression prevalence rates, especially in military and armed forces, as well as composing precise instruments of anger assessment with parallel forms for different sectors with comparable scales, and follow-up the anger management protocols.

Studies revealed that the prevalence and incidence rates of angry actions and behaviors are more common in military and therapeutic environments. Actually it unfortunately appears to be a routine issue in these environments [13, 42].

Table 3. Causes and Origins of Anger

Anger Causes	Explanation
Psychological	<p>Attachment Theory Childhood strategies for anger coping will endure in adulthood. Alike childhood, anger in adulthood is an alarm to the individual that there is a problem which shall be solved. Different insecure attachment styles in childhood, results in aggressive behaviors in adulthood.</p> <p>Sensitivity to Reinforcement Theory People with high levels of stress and anxiety (their BIS or FFFS is dominant) are highly sensitive to signals of threat and punishment, and show many angry behaviors and reactions. Individual differences in defensive distance about some real constant distance could be considered as an underlying personality dimension in terms of "sensitivity to punishment" or "threat perception" which are major factors in producing anger in human beings in different situations.</p> <p>Five-Factor Model of Personality Neuroticism is one of the five factors of personality which is constant in adulthood and comprised six facets namely anxiety, anger and hostility, depression, self-consciousness, impulsivity, and vulnerability. Neurotic people are typically full of negative feelings especially anxiety, depression, and anger.</p>
Physiological	<p>Physiological changes in anger are results of the activation of sympathetic branches of autonomous nervous systems which prepares body for dealing with specific situations. These changes include increase in blood pressure, increase in heart rate, increase in number (and decrease in depth, simultaneously) of respiration, increase of blood sugar, distention of blood vessels of central nervous systems and stripped muscles, decrease in blood flow of digestion organs, increase in sweating, decrease in secretion of saliva and mucus (and hence, mouth, nose, and throat become dry), bristling of body hairs, and distention of pupils. In anger,</p>

	arousal of the autonomous nervous system is controlled by the hormonal activity of the central and cortical parts of the adrenal glands and secretion of certain hormones.
Neuropsychological	Hypothalamus and limbic systems, especially amygdale, send impulses to the brain stem and as a result autonomic nervous system directly influence internal organs and muscles. Moreover, in anger dominance, lateral orbitofrontal cortex has the highest activity.
Religious (Islamic)	The main cause of rage and wrath in human beings is grandiose, arrogance, and condescension. Human beings usually become angry when her/his grandiose or arrogance is blemished.

With respect to this fact, there would be a sound suggestion to change educational and managerial policies in military and clinical environments for the personnel, so that they can realize the anger construction and optimum ways of dealing with, preventing, and reducing these events. Given the fact that most of the underlying factors of anger are stemmed in learning and psychological processing systems, and according to the fact that one can make control over her/his physiological and somatic functions through psychological practices, it appears that well-established psychological interventions on anger management and control can reduce and eliminate angry actions and behaviors in individuals and the society.

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