
Anger Episodes in High- and Low-Trait-Anger Community Adults



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Anger is a basic emotion, experienced by almost all human beings in response to the unwanted and unexpected behavior of others. Yet, there is little consensus as to which characteristics may differentiate people who experience normal versus exaggerated or pathological anger reactions. We examined the self-reported characteristics of specific anger episodes in 93 community adults who were high (HTA) or low (LTA) on trait anger. Using a componential model, they were asked to identify a recent anger episode and report on the triggers and associated cognitions, characteristics of the experience, desired and actual patterns of expression, and outcomes. HTA adults, in comparison to their LTA counterparts, exhibited anger reactions that were more frequent, intense, and enduring. They also reported more negative cognitions. Of particular importance, the HTA adults reported more physical aggression, negative verbal responses, drug use, and negative anger-related consequences. Thus, clinically important anger reactions may emerge as a function of the anger trait. Results are discussed in terms of implications for diagnosis and treatment. © 2002 Wiley Periodicals, Inc. *J Clin Psychol* 58: 1573-1590, 2002.

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Emotion theorists (e.g., Darwin, 1872/1965; Ekman, 1971; Izard, 1977; Plutchik, 1980; Watson, 1930) consistently have identified anger as a basic emotion that is presumed to be found in all humans. As a reaction to environmental events, anger has a number of adaptive functions such as providing an internal signal that goals are blocked or thwarted (Berkowitz, 1994), communicating to others that their actions are viewed as an encroachment on freedom or resources (Rothenberg, 1971), and mobilizing protective actions when dealing with a perceived threat (Novaco, 1976).

However, for a subset of individuals, anger may become exaggerated and dysfunctional (Deffenbacher, 1993; Lachmund & DiGiuseppe, 1997). Identification of such individuals and understanding their anger episodes is important for a number of reasons. First, high anger is related to, and seems to be causative of, a variety of problems such as heart disease, marital violence, self-defeating decisions, etc. For example, Williams et al. (2000) completed a 53-month prospective study of 12,986 African-American and Caucasian men and women who initially were disease free. Using Spielberger's (1988) Trait-Anger Scale, they found that, "Proneness to anger places normotensive middle-aged men and women at significant risk for CHD morbidity and death, independent of established biological risk factors" (p. 2034). Regarding anger and marital violence, Barbour, Eckhardt, Davison, and Kassinove (1998) showed that maritally violent men score higher on trait anger and anger expressed outwardly, and they were lower on anger control. Anger also may affect negatively decision making and lead to self-defeating behaviors. For example, Owens, Fuller, and Kassinove (2002) investigated the relationship of trait anger to decisions to aggress in a simulated Wartime Prisoner's Dilemma game. Because high-trait-anger players made more attack responses resulting in losses, it was concluded that trait-anger and anger-control difficulties might be toxic factors in poor decision-making and self-defeating behavior. Other correlational evidence suggests that high anger is related to anxiety, misuse of alcohol, aggressive and risky behavior while driving, and more "close calls" and minor accidents (Deffenbacher, Huff, Lynch, Oetting, & Natalie, 2000). The second reason for understanding anger among those having problematic reactions is that identification of a subset of pathologically angry individuals will lead to more formal diagnoses, increases in research funds for further study of anger, and improved treatments. Such identification will be based not only upon knowledge of the overall relationship of anger to other maladaptive behaviors, as noted above, but also to knowledge of differences between individuals who experience normal anger and those who experience anger that is more frequent, intense, and enduring. Unfortunately, our understanding of anger episodes and the personality correlates of people likely to experience exaggerated and dysfunctional anger is incomplete.

Because anger is reported to clinicians as a subjective phenomenological experience, self-reports of anger episodes as they occur in the natural environment are meaningful for obtaining information (Averill, 1983; Kassinove & Sukhodolsky, 1995; Novaco, 1994). Indeed, many descriptive investigations have been conducted from this phenomenological perspective.¹ In two earlier studies, for example, college students recorded their anger experiences for one week using a controlled diary method (Gates, 1926; Meltzer, 1933). Considering both of these studies together, 144 college students contributed 538 anger episodes for analysis. More recent investigators (e.g., Averill, 1983; Kassinove, Sukhodolsky, Tsytarev, & Solovyova, 1997) have used a different method. They asked participants to recall a *single* anger episode, to describe it in an open-ended fashion, and

¹We note that Jerry Deffenbacher and his colleagues have used descriptions of the worst ongoing anger episode as part of a battery of outcome measures used in several treatment studies. For a summary of characteristics of HTA college students obtained from some of those studies, readers are referred to Deffenbacher (1993).

then to respond to specific questions about the event. Averill's (1983) sample consisted of 80 university students and 80 community residents, whereas Kassinove et al. (1997) used a multicultural sample of 401 American and 346 Russian students. Taken together, these studies have added to our understanding of how anger is experienced by broad nonspecific groups and some general patterns have emerged. For example, we know that anger is quite common. Most people report that they experience anger from one to several times per week, depending on how data are collected (Gates, 1926; Kassinove et al., 1997; Meltzer, 1933). In addition, anger episodes generally are of moderate intensity as compared with annoyance or rage. Using a "0" (none) to "100" (extreme) scale, average intensity ratings for anger ranged from 52 (Gates, 1933) to 60 (Kassinove et al., 1997). In addition, the majority of anger episodes are of short duration, with modal responses across studies reported at less than 30 minutes (Gates, 1926; Kassinove et al., 1997; Meltzer, 1933).

Anger reactions seem to occur primarily in a social context with people who are quite familiar to us. Estimates of the percentage of episodes that occur with people who are described as *well-liked* or *loved* range from 53% (Averill, 1983) to 61% (Kassinove et al., 1997). Of particular interest to clinicians, when asked about the *actual behavior* engaged in when angry, verbal responses are reported as the most common. Yelling or screaming was reported in 43% (Meltzer, 1933) to 58% (Kassinove et al., 1997) of anger episodes. In contrast to what might be expected based on lay ideas, physically aggressive responses were uncommon and were reported only 2% (Meltzer, 1933) to 10% (Kassinove et al., 1997) of the time. However, it is unknown as to whether this holds true for adults high on trait anger who might be referred to clinicians. Also surprising has been the finding that the after effects or consequences of anger in broad samples have tended to be evaluated as positive more than half of the time (Averill, 1983; Gates, 1926; Kassinove et al., 1997). Again, it is unknown if this holds true for high-trait-anger adults.

Overall, few sex differences have been documented in terms of anger experiences and expressions. Although Kassinove et al. (1997) found several differences (e.g., women experienced more anger at home and men reported fewer alternative feelings following an anger episode), they concluded that these were far overshadowed by the similarities in anger between the sexes. In his broad sample, Averill (1983) concluded that the only consistent difference between men and women was that women reported crying more often.

Whereas these studies provide important baseline information regarding how anger typically is experienced in the natural environment by broad non-specific samples, a number of limitations are evident. First, participants were not selected based on any anger-related criterion. Thus, it is unclear whether high-trait-anger persons have more problematic anger episodes and reactions, and whether they would report different triggers, experiences, or expressive patterns. Second, previous investigations have relied heavily on student samples, which raise concerns about generalization to the broader adult population. Third, previous research has not identified specific aspects of dysfunctional anger reactions that might be of concern to practitioners who are developing treatment programs. For example, a componential conceptualization (Kassinove, et al., 1997) requires that anger episodes be broken down into parts (i.e., triggers, appraisals/thoughts, experiences such as patterns of physical activation, and behavioral expressions) in order to work with patients to reduce symptoms in each area (e.g., Feindler & Ecton, 1986; Kassinove & Tafrate, 2002; McKay & Rogers, 2000). Questions remain about the specific internal and external triggers, thoughts and other patterns of stimulus appraisal, experiences, and patterns of expression that may exist in adults prone to experience anger frequently.

The present study was undertaken to obtain descriptive data about differences in anger episodes in a community sample of adults who were high or low on anger as a trait.

We expected that high-trait-anger adults might have more exaggerated and dysfunctional anger episodes, as marked by increased experiences and expressive patterns. In addition, if high-trait-anger adults did have more dysfunctional episodes, it also seemed likely that the outcomes of their angry interactions would be more negative.

Method

Participants

Adults (over age 25) were recruited through weekly newspaper announcements seeking individuals described as either *easily frustrated, annoyed, and angered*, or *easy going, patient, and laid back*. In order to select statistically high- and low-anger-prone adults, the Trait-Anger Scale (TAS; described below) was administered to all persons who responded to the announcements. Cutoff scores were set at the upper quartile (>21 for men, >22 for women) and lower quartile (<14 for men, <15 for women), because previous research has shown that participants in the upper quartile often have serious anger-related consequences (Tafrate & Kassinove, 1998).

A total of 228 individuals were screened and 129 met either the high- or low-trait-anger criteria. Of those who completed the TAS, 51 were in the upper quartile group and 42 were in the lower quartile group. These 93 participants (48 men and 45 women) reported a mean age of 34.28 ($SD = 7.50$; range 25–52). The sample was racially diverse and consisted of participants who identified themselves as Caucasian/White (61%), African-American/Black (21%), or Hispanic/Latino (14%). Approximately one-quarter (24%) of the sample lived alone. However, the most common living situation was with a spouse or partner (45%). The majority (55%) were employed full-time, and their yearly incomes ranged from zero to \$85,000 ($M = \$25,708$; $SD = \$16,810$). The unemployment rate of the sample (24%) was considerably higher than the current national average, which is around 5% for adults (Bureau of Labor Statistics, 2001). The sample was well educated, as only 11% reported less than 12 years of schooling. The majority (59%) had completed some college or had earned an undergraduate degree. Two men were accepted, although they considered themselves to be students. One was age 29, divorced with no income, and was working on an undergraduate degree; the second was 28, never married, and was working on a graduate degree. Both were in the low-trait-anger group. In terms of group equivalence, χ^2 and independent t -test analyses indicated that the HTA and LTA groups were similar on the demographic variables of sex, age, ethnicity, living situation, education, and income. However, differences were detected on the variables of marital and employment status, indicating that HTA adults were less likely to be married and more likely to be unemployed. These differences are not surprising and perhaps reflect real-world anger-related difficulties faced by the HTA participants.

Measures

The Trait-Anger Scale (Spielberger, 1988; TAS) is designed to measure an individual's propensity to experience and express anger across a variety of situations. It consists of 10 statements that describe subjective feelings of anger. In response to the sentence stem, "How I generally feel," respondents rate on a 4-point Likert-type scale (1 = almost never to 4 = almost always) how characteristic each item is for them. Higher scores indicate greater trait anger. The TAS has been shown to be internally consistent ($\alpha = .82$; Spielberger, 1988) to correlate positively with other measures of anger (Spielberger, 1988), and to discriminate high anger individuals from others (Deffenbacher, Demm, & Brandon, 1986; Lopez & Thurman, 1986).

A nine-page questionnaire, adapted from Kassinove et al. (1997), was used to obtain information about a single anger episode experienced by each participant. Following a number of demographic questions, participants were asked to describe, in an open-ended format, a recent time when they felt angry. No restrictions were imposed in terms of selecting their recent anger episode. This episode then was explored in detail by asking them to respond to specific restricted and partially open-ended items about the (a) triggers, (b) appraisals, (c) experiences, (d) expressions, and (e) outcomes related to their reported anger episode.

For example, seven specific questions were asked regarding anger *triggers*. These included how recently the event took place, location, day of the week, time of day, target of anger, and relationship with the target. Participants simply checked off the responses that best reflected their own experiences. Thus, frequency data were generated from these questions.

In terms of *appraisals*, participants were provided with a list of 24 positive and negative cognitions and were asked to respond to the item, "What kinds of thoughts were going through your mind during or right after the anger episode you described above?" They were permitted to select as many of the cognitions they believed they experienced. Data regarding cognitions were related to the theories of Ellis (Ellis, 1994; Ellis & Tafarot, 1997) and Beck (1976) and were examined in several ways. First, the actual number of dysfunctional cognitions selected by each participant was obtained in order to compare means between the two groups. In addition, frequency data were obtained regarding the number of participants from each group who endorsed each type of cognition. Specifically, Ellis has postulated that four core beliefs moderate emotions such as anger (Walen, DiGiuseppe, & Dryden, 1992). These are *awfulizing* (i.e., exaggerating the consequences or level of hardship associated with aversive events), *low frustration tolerance* (i.e., underestimating one's ability to deal with discomfort or adversity), *demandingness* (i.e., elevating personal desires to moral dictates or rules which are then imposed on self, others, and the world), and *global self/other rating* (i.e., blaming and condemning oneself or another "in-toto" for specific behavioral acts). Self- and other ratings were examined separately in this study. Beck's (1976) work has emphasized the tendency for individuals with emotional problems to engage in distortions of reality and inaccuracies in their perceptions of situations and the cognition list was thus related to such variables.

In the area of *experiences*, participants were asked to identify from a list of 17 physical sensations (e.g., upset stomach, rapid or pounding heart) how many sensations they experienced during or immediately after the identified anger episode. The number of sensations identified by each participant was obtained in order to compare means between the two subject groups. In addition, frequency data were obtained regarding the number of participants from each group who selected each type of physical symptom.

Regarding anger *expressions*, both behavioral desires ("I wanted to") and actions performed ("I actually did") were assessed by asking participants to consider their identified anger episode and select from a series of 27 behaviors (e.g., fight, hit, kick, push, or shove someone; yell and scream; keep things in and boil inside). Again, participants were permitted to select as many of the actions as they desired. Data were examined in terms of the frequencies in which participants in each group selected each type of expression mode.

Several types of *outcomes* were examined in relation to the identified anger episode. First, participants were asked to select from a list of 15 feelings (e.g., foolish, sad, triumphant) those that best reflected what they experienced after their anger passed. Second, the impact that anger had on the relationship with the target person was assessed by having participants select from a list of 20 potential outcomes (e.g., my relationship with

person became stronger, my relationship with the person became weaker). Finally, in considering both the short-term and long-term consequences, participants indicated whether their anger episode resulted in positive, neutral, or negative outcomes. Data on all outcome variables were obtained in terms of reported frequencies.

Participants also rated the *intensity* of their recent anger experience on a scale from zero (No emotional arousal) to 100 (The maximum emotional arousal I have ever experienced). Thus, mean intensity ratings from the two groups were obtained. To assess *duration* of anger episodes, participants responded to the question "How long did the anger last?" by selecting one from a list of seven alternatives ranging from "five minutes or less" to "more than a week." Data were examined in terms of the frequencies in which participants in each group selected each category. Finally, unrelated to the identified anger episode, participants were asked to rate the *frequency* with which they typically experience anger. In response to the statement "I would say that I usually feel angry . . ." participants selected from a list of six alternatives ranging from "once a day, or more" to "never" the one that was most descriptive of their experiences. The questions in the present study were administered as part of a larger survey, titled the *Life Experiences Survey*² that also investigated comorbidity patterns in anger-prone adults. Additional results from that survey are reported elsewhere (Tafrate & Kassinove, 2001).

Procedure

Respondents to the newspaper announcements were administered the TAS verbally, over the telephone, by a graduate research assistant. Scores were calculated immediately and persons who met either the high- or low-anger criterion were invited to the office for a private appointment to fill out the *Life Experiences Survey*. At the time the invitation was extended, they were told they would receive \$35.00 for participating. Each subject signed an informed-consent form. Upon completion of the *Life Experiences Survey*, they were compensated for their time.

Results

Episodes of anger were analyzed across six dimensions:

- a. the trigger or event description,
- b. the frequency, intensity, and duration of anger,
- c. cognitions related to the trigger,
- d. physical sensations experienced,
- e. desired and actual expressions, and
- f. outcomes.

Primary analyses, using χ^2 tests for categorical data and independent *t*-tests to compare group means, were conducted to determine if differences existed between the HTA and LTA groups. Selected χ^2 analyses also were conducted to examine potential sex differences. Because the purpose of the present study was to obtain descriptive information regarding anger experiences among those likely to have problematic anger reactions, these analyses were limited to differences between HTA men ($n = 28$) and women ($n = 23$).

²Copies of the *Life Experiences Survey* can be obtained from the first author.

Triggers / Event Descriptions

Eighty-five percent of participants reported an anger experience that occurred within the previous six months, and 45% selected an episode that occurred during the previous week. Approximately half (48%) of all reported anger episodes occurred at home. As coded from open-ended responses, the distribution among other settings (i.e., work, car, social situations) was relatively even. Anger episodes were reported across all days of the week, with the majority (81%) occurring on weekdays. However, approximately one-quarter of the participants could not remember the exact day. In terms of time of the day, the afternoon and evening hours were peak anger periods, accounting for 64% of reported events. Anger was triggered most often by the actions of another person (85%), often a spouse or live-in partner (27%), someone at work (17%), or a stranger (19%). In addition, the target of anger was described as someone "well-known and liked" or "loved" in more than half (54%) of the cases. No differences between the HTA and LTA anger groups emerged on the χ^2 analyses regarding event descriptions or triggers. Thus, HTA and LTA adults appear to have become angered by similar external situations.

Frequency, Intensity, and Duration

HTA participants reported that they experience anger significantly more often than LTA participants, $\chi^2(5) = 63.72, p < .001$. Thirty-three percent of HTA subjects reported that they become angry "once a day or more" and an additional 53% experienced anger "a few days a week." Thus, 86% reported anger episodes at least a few times each week. In contrast, only 7% of LTA participants reported frequencies in these two categories. The most-often checked category for the LTA group was "rarely, if ever" (45%). The reported anger episodes were perceived to be significantly more intense for HTA participants ($M = 75.29; SD = 16.89$) than LTA participants ($M = 58.57; SD = 18.82$); $t(91) = 4.51, p < .001$. However, considerable overlap of scores between the two groups existed. Scores for the LTA group were distributed normally; thus, very few (5%) of these participants reported anger intensities greater than 90. In contrast, many of the HTA participants (26%) reported intensity levels at 90 or above. In terms of duration, the majority (54%) of anger episodes, for the sample as a whole, was less than an hour in length. Again, there was a significant difference between the HTA and LTA groups, $\chi^2(2) = 8.76, p < .05$. More than twice as many HTA anger participants (45%) reported that their anger episode lasted "more than a day" as compared to LTA participants (17%). There were no significant sex differences among HTA participants on the dimensions of frequency, intensity, and duration.

Cognitions

The mean number of dysfunctional cognitions (as defined by Ellis, 1994 and Beck, 1976) reported per anger episode was 3.24 ($SD = 1.68$) for HTA participants and 2.00 ($SD = 1.19$) for LTA participants. An independent samples *t*-test comparing the mean scores found a significant difference between the two groups, $t(91) = 4.01, p < .001$, indicating that HTA participants were more prone to dysfunctional thinking. Table 1 presents the χ^2 analyses for the frequency that each type of cognition was reported by high- and low-anger participants during their anger episodes. Demandingness was the most frequently reported cognition (endorsed by 86% of the HTA and 95% of the LTA participants). Global ratings of others also were reported frequently in both groups (endorsed by 60% of HTA and 44% of LTA participants). However, demandingness and global ratings were

Table 1
 Percent of HTA and LTA Adults Who Reported Various Cognitions During Anger Episodes

Cognition Type	High Anger (<i>n</i> = 50)	Low Anger (<i>n</i> = 41)	$\chi^2(1)$	Total Sample (<i>n</i> = 91)
Demandingness	86	95	2.10	90
Ratings of Others	60	44	2.34	53
Low Frustration Tolerance	60	29	8.56**	46
Distortion	48	12	13.30***	32
Awfulizing	40	20	4.44*	31
Ratings of Self	36	10	8.46**	24

* $p < .05$; ** $p < .01$; *** $p < .001$.

not reported at significantly different rates for the two groups, indicating that these types of cognitions are common to most anger episodes.

However, differences were found for four types of cognitions. HTA adults endorsed awfulizing and low frustration tolerance more often than did LTA adults. HTA participants also were more likely to engage in global self-rating and were much more likely to admit that their thinking was distorted and exaggerated. There also were significant sex differences for the HTA participants, indicating a greater tendency for women to report awfulizing, $\chi^2(2) = 4.84$, $p < .05$, and self-rating, $\chi^2(2) = 4.83$, $p < .05$.

Physical Sensations

The mean number of physical sensations reported per anger episode was 3.67 ($SD = 2.59$) for HTA participants and 1.90 ($SD = 1.32$) for LTA participants. An independent samples *t*-test comparing the mean scores found a significant difference between the between the two groups, $t(91) = 4.00$, $p < .001$, indicating that HTA participants experienced a greater number of physical sensations. Table 2 presents the χ^2 analyses for the percentage of individuals who endorsed each type of physical symptom. Although muscle tension (44%), rapid heart rate (36%), and headaches (30%) were the most commonly reported sensations for the sample as a whole, a wide range of sensations reportedly were experienced. Significant differences between HTA and LTA adults were found only for reports of headaches and dizziness. Given the large number of items and the relatively small sample size, many of the sensations were endorsed infrequently, resulting in reduced statistical power to detect differences in these items. Thus, the sensations that distinguished between HTA and LTA adults at the .10 level of significance also are noted in Table 2 and are presented as items for further investigation. In addition, several differences emerged between HTA men and women. More women reported headaches, $\chi^2(2) = 6.85$, $p < .01$, and increased heart rate, $\chi^2(2) = 5.37$, $p < .05$.

Desired and Actual Expressions

Regarding behavioral desires related to the anger episodes, both HTA and LTA adults equally were likely to want to resolve the situation, engage in avoidance activities, or make bodily expressions. However, as shown in Table 3, HTA participants reported a significantly greater desire to engage in negative verbal behaviors, physical actions, substance use, and anger suppression.

Table 2
 Percent of HTA and LTA Adults Who Reported Various Sensations During Anger Episodes

Physical Sensations	High Anger (n = 51)	Low Anger (n = 42)	$\chi^2(1)$	Total Sample (n = 93)
Muscle Tension	53	33	3.59 ^H	44
Rapid Heart Rate	43	26	2.89 ^H	36
Headache	45	12	12.06***	30
Upset Stomach	28	12	3.42 ^H	20
Flushing	22	17	.36	19
Trembling	20	17	.13	18
Positive Energy	18	14	.19	16
Fatigue	20	10	1.83	15
Sweating	18	5	3.67 ^H	12
Fluttering in Stomach	16	7	1.61	12
Other	12	12	0.00	12
Nausea	12	7	.56	10
Rapid Breathing	14	2	3.77 ^H	9
Tingling Sensations	10	7	.21	9
Feelings of Unreality	10	2	2.10	7
Dizziness	10	0	4.35*	5
Indigestion	8	0	3.44 ^H	4
Diarrhea	8	0	3.44 ^H	4

^H $p < .10$; * $p < .05$; *** $p < .001$.

In terms of what the participants reported that they actually did when angry, both groups (60% of the HTA and 52% of the LTA) reported making some type of bodily gesture more than half of the time. Surprisingly, responses aimed at achieving resolution (endorsed by 30% of HTA participants and 45% of LTA participants) were not reported at a significantly different rate. Nonetheless, significant differences emerged for three action patterns. HTA participants were almost twice as likely to engage in some type of negative verbal response, three times more likely to act physically aggressive, and three times more likely to use substances than were LTA participants. These results suggest that HTA individuals have a greater tendency to engage in behaviors that are likely to result in negative consequences. There were no differences between HTA men and women, indicating that both sexes expressed their anger in a similar manner.

Outcomes

Table 4 provides the frequencies of both positive and negative feelings reported by participants. Significantly more of the LTA participants reported feeling relieved and satisfied following the anger incident. In contrast, HTA participants reported significantly more depression, disgust, foolishness, and shame. LTA adults appear more likely to experience positive after-reactions, whereas HTA adults demonstrate a pattern of negative feelings following anger. Furthermore, among the HTA participants, women reported more sadness than did men following their anger episodes, $\chi^2(2) = 8.42, p < .01$.

In terms of the impact that the anger episodes had on interpersonal relationships (Table 5), approximately half of the participants in both groups reported that they continued to have a relationship with the source of their anger. Overall, few of the participants (14% of HTA and 5% of LTA) reported increased respect for the person who was

Table 3
 Percent of HTA and LTA Adults Who Reported Various Impulses and Expressions
 During Anger Episodes

Impulses/Expressions	High Anger (n = 50)	Low Anger (n = 42)	$\chi^2(1)$	Total Sample (n = 92)
Anger Out Verbal				
Impulses	64	38	6.14*	52
Actions	74	38	12.05***	58
Anger Out Physical				
Impulses	56	29	7.00**	44
Actions	22	7	3.91*	15
Avoidance Activities				
Impulses	38	26	1.45	33
Actions	28	26	1.04	27
Substance Use				
Impulses	38	12	8.06**	26
Actions	38	12	8.06**	26
Resolution				
Impulses	36	38	.04	37
Actions	30	45	2.28	37
Anger In				
Impulses	34	12	6.13*	24
Actions	28	29	.01	28
Bodily Expressions				
Impulses	28	21	.53	25
Actions	60	52	.54	57

Note. Anger out verbal specifically refers to threatening, yelling, screaming, arguing, disagreeing loudly, or making nasty, sarcastic, or abusive remarks; Anger out physical includes fighting, hitting, kicking, pushing, or shoving someone, or hitting, throwing, slamming or destroying something; Avoidance activities include escape or withdrawal from the situation, exercise, watching television, reading, etc.; Substance use includes drinking beer or alcohol, taking medications such as aspirin, Tylenol, Valium, etc., taking other drugs such as marijuana, LSD, cocaine, heroin, etc.; Resolution includes compromise, discussion, attempts to find a solution, or trying to resolve the problem; Anger in includes controlling anger and not showing it, keeping quiet, harboring grudges, and not telling anyone, keeping things in and boiling inside; Bodily expressions include glaring, frowning, giving a stern icy look, or making bodily expressions such as rolling eyes, crossing arms, etc.

* $p < .05$; ** $p < .01$; *** $p < .001$.

the cause of their anger. In terms of relationship strength, significantly more HTA adults reported a weaker relationship because of the anger episode, whereas more LTA adults indicated a stronger relationship. Whereas more LTA participants reported no change in the amount of time spent with the source of their anger, the majority of HTA participants indicated that they spent less time with the source of their anger following the episode. Anger episodes appeared to have little impact on the relationships of LTA individuals. In contrast, HTA adults experienced more anger-related damage to relationships. There were no significant sex differences for the HTA participants on any of the relationship variables.

Participants also were asked to consider the short-term and long-term consequences of their anger episodes (Table 6). HTA adults (49%) tended to evaluate the short-term outcome of the episode to be negative, whereas LTA adults (41%) rated the outcome as neutral. However, results for short-term outcomes did not reach statistical significance. A significant difference was found regarding the long-term outcomes of the episodes. In terms of positive consequences, LTA participants reported positive outcomes at twice the rate of HTA participants. In addition, HTA adults reported a negative outcome four times more frequently than did LTA adults. Thus, it appears that anger-prone adults experience

Table 4
Percent of HTA and LTA Adults Who Reported Various Emotions Following Anger Episodes

Emotional Outcomes	High Anger (<i>n</i> = 51)	Low Anger (<i>n</i> = 42)	$\chi^2(1)$	Total Sample (<i>n</i> = 93)
Negative Emotions				
Irritated or Annoyed	49	38	1.12	44
Depressed	51	14	13.74***	34
Disgusted	43	14	9.11**	30
Sad	31	21	1.16	27
Concerned	26	21	.21	24
Guilty or Ashamed	35	7	10.44***	23
Foolish	28	10	4.74*	19
Anxious/Fearful	18	7	2.26	13
Positive Emotions				
Relieved	12	36	7.56**	23
Satisfied	2	17	6.34*	9
Happy	2	10	2.59	5
Triumphant	4	5	.04	4
Joyous	2	0	.83	1
Other				
Anger Has Not Yet Passed	24	10	3.17	17
No Reaction	10	7	.21	9

p* < .05; *p* < .01; ****p* < .001.

more long-term negative consequences related to their anger episodes. When considering just the HTA participants, no significant sex differences in perceived outcomes emerged.

Discussion

This is the first study to describe anger episodes in a sample of high- and low-trait-anger non-student adults. Using a componential model, each participant identified a recent experience of anger and reported on the triggers, characteristics of the experience, desired and actual patterns of expression, and outcomes. The data suggest that the anger experiences of high-trait-anger adults differ on a number of dimensions from adults low on trait anger, suggesting that clinicians and theorists alike recognize that HTA adults may represent a unique clinical group. Thus, the present findings are discussed in terms of understanding components of anger that are more prevalent in HTA adults and the implications for diagnosis and treatment.

Characteristics of Anger in HTA Adults

Practitioners often have relied on the dimensions of frequency, intensity, and duration to determine whether a specific symptom is healthy or dysfunctional. The self-reports of anger provided in this study indicate that these dimensions are useful for identifying individuals with problematic anger reactions. HTA adults reported specific anger episodes that were more frequent, intense, and enduring, thus reinforcing the hypothesis that anger reactions of HTA adults are problematic and worthy of attention by clinicians. Such episodes are the ones most likely to lead to the interpersonal and clinical problems associated with anger.

Table 5
Percent of HTA and LTA Adults Who Reported Various Relationship Outcomes Following Anger Episodes

Relationship Outcomes	High Anger (n = 51)	Low Anger (n = 42)	$\chi^2(2)$	Total Sample (n = 93)
Ongoing Relationship with Source			.09	
Continue to Interact	49	50		50
No Longer Interact	29	31		30
Unsure	22	19		20
Relationship Strength			7.89*	
Stronger	4	17		10
Weaker	47	26		38
Unsure/No Change	49	55		52
Amount of Time Spent with Source			9.96**	
Increased	8	2		5
Decreased	67	41		55
Unsure/No Change	26	57		40
Respect for Source of Anger			3.40	
Gained Respect	14	5		10
Lost Respect	45	38		42
Unsure/No Change	41	57		48

* $p < .05$; ** $p < .01$.

HTA adults endorsed more problematic cognitions than did LTA adults. Specifically, HTA adults were four times more likely to admit that their perceptions of the anger-engendering event were "distorted." This tendency has been well documented in angry and aggressive children and adolescents who show deficits in interpreting others' intentions (Dodge & Coie, 1987) and misinterpret ambiguous or benign interactions as hostile (Dodge, Price, Bachorowski, & Newman, 1990). It appears that anger-prone adults possess a similar negative bias in interpreting potentially provocative situations. HTA adults also reported significantly higher rates of awfulizing, low frustration tolerance, and negative self-ratings. The present findings are consistent with the hypothesis that certain

Table 6
Anger Episode Outcomes Reported by HTA and LTA Adults

Ratings	High Anger (n = 51)	Low Anger (n = 42)	$\chi^2(2)$	Total Sample (n = 93)
Short-term Outcome			5.32	
Positive	20	33		26
Neutral	31	41		36
Negative	49	26		39
Long-term Outcome			9.90**	
Positive	27	53		40
Neutral	32	37		35
Negative	41	10		25

** $p < .01$.

cognitions mediate the exaggerated anger experiences reported by the HTA adults. Rumination and irrational and distorted thinking may increase the frequency and intensity of anger and prolong the duration of the episodes. This suggests that it would be useful to develop interventions to decrease ruminative and irrational thinking, to increase accurate interpretations of events, and to create more tolerant and flexible philosophies in anger reduction programs. These, of course, are the well-known components of cognitive restructuring programs such as those of Ellis (1994) and Beck (1976). Of course there are limitations inherent in using a checklist methodology such as the one employed in this study. Having subjects provide narrative accounts of their thinking during anger episodes might reveal additional relevant cognitions.

Regarding anger-related physical activation, HTA participants reported a greater number of physical sensations associated with their anger episodes. This is consistent with the higher intensity ratings reported in the HTA group. However, only head-related sensations, such as headaches and dizziness, emerged as more prominent among HTA adults. These data are consistent with other reports that anger (and depression) is a common concomitant of chronic headache (Duckro, Chibnall, & Tomazic, 1995; Hatch et al., 1991). Clinicians working with angry adults would be wise to assess psycho-physiological symptoms, as they may exacerbate anger. Other physical-activation patterns were not identified in this study. Sensations traditionally associated with anger, such as muscle tension, rapid heart rate, and rapid breathing, while reported more frequently by HTA participants, did not reach statistical significance. Similarly, gastrointestinal symptoms (e.g., upset stomach, indigestion, and diarrhea) were reported more frequently by HTA adults, but also did not reach significance. Further research using a larger sample might help to clarify the physical symptoms most often associated with problematic anger reactions. We conclude, tentatively, that interventions that target physical sensations, such as relaxation training, may be useful.

In considering expressive patterns, HTA adults reported a significantly greater desire or impulse to engage in potentially self-defeating behaviors and actually were more likely to perform such behaviors than were their LTA counterparts. Of particular importance are rates of physical aggression. In non-clinical samples, physical aggression typically has been reported to occur in only a small percentage of anger episodes (Averill, 1983; Kassinove et al., 1997; Meltzer, 1933), prompting the conclusion that anger is associated only loosely with aggressive behavior. In the present study, the reported rates of aggressive behavior of the HTA adults reveal a more severe picture. Aggression was evident in one out of every five episodes analyzed in the HTA group. This was three times higher than the rate of aggression reported by the LTA adults. Previous descriptive research with non-clinical participants may well have underestimated the association between anger and aggression in persons likely to appear in the mental-health system.

HTA adults also were twice as likely to engage in verbal responses such as yelling, screaming, arguing, threatening, and making sarcastic and abusive remarks, as were their LTA counterparts. Such verbal responses were surprisingly common, occurring in approximately 75% of experiences described by the HTA adults. Of course, even verbal responses can prove costly in terms of damage to interpersonal relationships and increased responsiveness of the cardiovascular system. Thus, developing assertive verbal skills to replace the strong and offensive verbalizations associated with anger may be important for clients seeking anger treatment.

Another behavior pattern of particular concern for the HTA participants was their reported tendency to use alcohol and illicit or prescription drugs when feeling angry. Several researchers also have noted high rates of substance use in samples of angry college students (Deffenbacher, 1993) and adults (Tafrate & Kassinove, 1998). The present

findings indicate that it is important for clinicians to assess the comorbidity of substance-use disorders among their angry clients and, possibly, to include this element in treatment.

In terms of anger-related outcomes, HTA adults reported experiencing significantly more negative feelings such as depression, disgust, foolishness, and guilt/shame following their anger episodes. In contrast, LTA participants were more likely to report several positive after-reactions, such as relief and satisfaction. Again, it appears that previous descriptive research with non-clinical participants (Gates, 1926; Kassinoe et al., 1997) has not acknowledged adequately the negative emotional consequences associated with anger in HTA adults. One potential explanation for the relationship between anger and other negative feeling states is that anger leads to impairment and loss, resulting in additional triggers for depression, guilt, and shame.

Adults in the HTA group also were more likely to report weaker relationships and that they spent less time with the source of their anger following the episode. In contrast, anger episodes did not change the nature of relationships for the LTA participants. One implication for practitioners working with angry clients is to consider the social (or systems) context of the individual. It may be wise for treatment goals to be broad, focusing not only on anger reduction, but also on issues such as minimizing damage to relationships and rebuilding and strengthening social networks.

Previous descriptive research has found that non-clinical participants were more likely to view their anger episodes as leading to positive outcomes rather than negative outcomes (Averill, 1983; Kassinoe et al., 1997). This finding also was supported in our LTA participant group, as they generally rated the consequences of their anger as positive or, at least, neutral. Again, HTA adults reported a different picture. The most prevalent response was that anger resulted in negative consequences in both the short and long term. These findings suggest that adults with clinical anger problems tend to view many of their own anger reactions as undesirable and likely to interfere with optimal functioning.

Shared Characteristics of Anger in HTA and LTA Adults

Some characteristics emerged as common to both LTA and HTA adults. In terms of triggers, our results are similar to those found in previous descriptive studies (Averill, 1983; Gates, 1926; Kassinoe et al., 1997; Meltzer, 1933). Anger most often was reported to occur at home, on weekday afternoons or evenings, and typically was triggered by the actions of another person. The target of anger most frequently was described as someone "well-known and liked" or "loved," and often was described as a live-in partner or a colleague at work. The lack of differences between the HTA and LTA participants indicates that standardized anger inventories, structured interviews, and potential diagnostic criteria that rely on trigger patterns are not likely to prove adequate for identifying individuals with problematic anger reactions.

Regarding cognitions, the overwhelming majority of both HTA and LTA adults endorsed demandingness. Thus, the belief that others *should* act differently appears to exist in most anger experiences. Replacing a demanding and inflexible cognitive outlook (e.g., "That driver *should* signal when changing lanes") with a more flexible or preference-based view (e.g., "I wish that driver would signal before changing lanes") may be an important shift for clients seeking to reduce anger. HTA and LTA participants alike also frequently endorsed rating other people, suggesting that those with functional and exaggerated anger reactions tend to blame and condemn others.

One form of anger expression frequent in both HTA and LTA participants was the use of some type of bodily gesture (e.g., glaring, frowning, rolling eyes, or crossing arms)

when angry. This suggests that, for practitioners working to reduce anger expressions, indicators related to facial expressions and body posture may be targets for change.

In relation to outcomes, adults in both groups typically reported that they continued to interact with the source of their anger. Thus, relationships were unlikely to be terminated as a result of one anger episode. Permanent anger-related damage to relationships probably takes place over time, and in clinical practice, opportunities to rebuild social networks may be present for many angry clients.

Sex Differences Among HTA Adults

Few sex differences were found among the HTA participants. Men and women appear to be more alike than different. Although our conclusions run contrary to popular opinion (i.e., men are more likely to express anger outwardly than women), they are similar to the findings of other researchers who have noted few meaningful sex differences in regard to anger (Averill, 1983; Deffenbacher, 1993; Kassino, et al., 1997).

No formal analyses were performed on anger trigger patterns due to the reduced sample size (HTA group only) and the large number of potential responses. However, sex differences were found among the HTA adults on other dimensions. In relation to cognitions, HTA women had a greater tendency to exaggerate the hardship associated with the anger-engendering event (i.e., awfulizing) and to blame or condemn themselves (i.e., negative self-rating). HTA women also were more likely to report the physical sensations of increased heart rate and headaches. Finally, HTA women reported more sadness following their anger episodes than did HTA men. This seems consistent with Averill's (1983) finding that, when angry, women were more likely to cry.

Anger as a Clinical Problem

Although the present data aid in the development of a profile for adults likely to have a clinical problem, a clear line of demarcation between normal and pathological anger experiences cannot be provided. Because anger is a common experience, any precise boundary would be artificial. Indeed, such a boundary also has proved elusive and controversial for other disorders as well (see Widiger & Clark, 2000, for a more detailed discussion).

Anger exists along a continuum. The frequency, intensity, and duration of the experience along with expressive characteristics, which lead to impairment in social functioning and personal distress, likely would suggest a clinically important disorder. Several characteristics could be included as part of a criterion set for a clinical anger disorder. These would be significant *angry affect* as indicated by frequent and intense anger episodes, a clear pattern of *outward expressiveness* involving negative verbal responses (e.g., yelling, screaming, arguing, threatening, and emitting sarcastic and abusive remarks); and periodic physical aggression (against objects, property, or persons). In addition, there likely would be regular *damage to social or vocational relationships*, and the episodes likely would be associated with *subjective distress*, as indicated by episodes, which are followed by negative feelings (e.g., depression, disgust, foolishness, guilt, or shame) or other negative consequences. On the other hand, anger episodes without physical aggression also may lead potentially to long-term medical consequences such as stroke and heart disease. Thus, physical aggression may not be a necessary element to be included in the formal definition of an anger disorder. For an in depth discussion, see Eckhardt and Deffenbacher (1995), who recommend formal anger diagnoses, with and without aggression.

Limitations and Future Research

We employed a statistical criterion for selecting a community sample whose anger we thought likely would be exaggerated and clinically problematic. Results from these HTA adults then were analyzed and discussed primarily in reference to an LTA comparison group. Of course, LTA adults represent the opposite extreme, thus potentially magnifying differences. As noted earlier, Kassinove et al. (1997), using similar methodology, analyzed anger episodes in a sample of students recruited irrespective of any anger-related criteria. Whereas LTA participants in the present study appeared to experience anger episodes less frequently than those in the Kassinove et al.'s (1997) sample, LTA subjects were remarkably similar on all other characteristics measured. This indicates that the LTA participants were not distinctly different from those in the middle quartile groups on many indices of anger used in the present study and served as an adequate comparison group. Nonetheless, comparing HTA adults to adults across all three quartile groups would strengthen future investigations.

The use of financial compensation to attract participants to the study may have resulted in an unemployment rate that was higher in the present sample than in the general population. Further research will help us determine the extent to which the present findings can be generalized to other community samples, such as individuals at differing levels of socioeconomic status. In addition, the retrospective nature of the design limits the accuracy of the findings. It certainly would be preferable to collect data as close to the anger episodes as possible. Our thinking was driven by typical conceptions of personality traits that likely would produce cross-situational stability of behavior. Thus, we thought it useful to study trait anger as a variable that might distinguish adults with problematic reactions. However, it is possible that other dimensions, as proposed by Spielberger (1988), such as anger-in or anger-out or anger-control, equally would be helpful in identifying a clinical group. Finally, some of the findings regarding the triggers, cognitions, experiences, and expressions of anger, as well as the outcomes, may be shared with other emotion categories. It certainly is possible that some triggers, for example, lead to anxiety, as well as anger, whereas some outcomes such as the loss of important relationships may follow depression, as well as anger.

In spite of these limitations, the present data suggest that it is important for psychologists to understand more about the many facets of anger. The development of meaningful diagnostic criteria for an anger disorder requires a far greater understanding of those anger experiences associated with impairment and distress than now exists. Obtaining descriptive information about the anger episodes of individuals from more traditionally defined clinical populations (e.g., adults seeking outpatient services, psychiatric inpatients, and individuals in correctional institutions) certainly would add to our current understanding. The well-documented and negative medical, cognitive, and interpersonal consequences suggest the importance of further study.

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