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ABSTRACT

Research has revealed a considerable degree of stability of Type A behavior from adolescence to adulthood. Other research has reported an association between anger and certain dimensions of cardiovascular risk in adolescent subjects. Such findings suggest that further study of the Type A phenomenon as it is expressed in adolescents may enhance current understanding of coronary prone behavior and may provide a means through which to identify Type A patterns early enough in the lifespan to introduce preventive strategies when needed. This study sought to describe the experience and expression of anger, hostility, and interpersonal aggressiveness in 19 Type A and 11 Type B adolescent males. Subjects completed the Adolescent Structured Interview, the State-Trait Anger Scale, and the Interpersonal Behavior Survey. The results revealed no significant differences between Type A's and Type B's on self-report measures of global anger and aggressiveness, and no significant relationship between interpersonal hostility and self-confidence for Type A's or Type B's. Type A's were found to be more likely than Type B's to lose their temper and to act in physically aggressive, verbally aggressive, and passive aggressive ways. (Author/NB)

Differences in Anger, Hostility, and Interpersonal Aggressiveness in Type A and Type B Adolescents

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Running Head: DIFFERENCES IN ADOLESCENTS

Abstract

This study sought to describe the experience and expression of anger, hostility and interpersonal aggressiveness in 19 Type A and 11 Type B male adolescents ages 15 and 16. No significant differences were found between Type A's and Type B's on self-report measures of global anger and aggressiveness, and no significant relationship between interpersonal hostility and self-confidence was demonstrated for Type A's or Type B's. Type A's were found to be more likely than Type B's to lose their temper, and to act in physically aggressive, verbally aggressive, and passive aggressive ways. Results were discussed in terms of previous research findings, and implications, as well as possible directions for future studies were explored.

Differences in Anger, Hostility, and Interpersonal Aggressiveness in Type A and Type B Adolescents

Speculation about the role of emotional, behavioral, and psychological factors in the pathogenesis of physical disorders and disease processes has prompted research examining the relationship of the Type A behavior pattern to the onset of coronary heart disease (CHD) and coronary atherosclerosis. The behavioral hallmarks of this coronary prone behavior pattern include extremes of competitive achievement striving, time urgency or impatience, aggressiveness, and easily aroused hostility (Matthews, 1982). These core characteristics of the Type A behavior pattern are observed in susceptible persons under sufficiently challenging environmental circumstances.

The importance of anger, hostility, and aggressiveness in the Type A behavior pattern as it relates to the incidence of atherosclerosis and coronary heart disease has become increasingly highlighted by recent research findings. For example, MacDougall, Dembroski, Dimsdale, and Hackett (1985) found a significant association between Type A components "potential for hostility" and "anger-in" and severity of

coronary artery disease. In addition, research has demonstrated that Type A's are more interpersonally aggressive than Type B's (for example, Holmes and Will (1985).

While investigators have focused largely on adult manifestations of the Type A behavior pattern, research investigating the stability of Type A behavior across childhood, adolescence, and young adulthood has revealed a considerable degree of stability of Type A behavior from adolescence to adulthood (Steinberg, 1986). And Siegel (1984) has reported an association between anger and certain dimensions of cardiovascular risk in adolescent subjects. Findings such as these suggest that further study of the Type A phenomenon as it is expressed in adolescent subjects may enhance current understanding of coronary prone behavior, as well as provide a means through which to identify Type A patterns early enough in the lifespan so that preventive strategies could be introduced.

This study is an investigation of the Type A behavior pattern in male adolescents, and includes an attempt to describe the experience and expression of anger, hostility, and interpersonal aggressiveness in

Type A subjects using self-report measures. Given research findings concerning anger in Type A adults, it was hypothesized that anger would be experienced more continuously in Type A adolescents than in their Type B cohorts. It was further hypothesized that Type A's would demonstrate higher levels of interpersonal aggressiveness than Type B's. A third hypothesis was that Type A's who scored particularly high on measures of intepersonal hostility and verbal aggressiveness would demonstrate lower levels of self-confidence in their interpersonal skills than Type B's. This hypothesis was based on findings suggesting that attempts to exert control may underlie expressions of the Type A behavior pattern (Siegel & Leitch, 1981; Siegel, Matthews, and Leitch, 1981). An examination of the differences between Type A's and Type B's in modes of anger expression was also of concern in the present study.

Method

The subjects included thirty-three 15- and 16-year-old Caucasian male volunteers drawn from communities in a major metropolitan area on the West Coast, a major Southeastern city, and a small Southeastern town. Subjects were recruited through public high schools, teen

soccer teams, church groups, and personal referrals of interested volunteers. The test scores for two subjects were not included because these subjects were rated as Type X, and the test scores for a third subject were omitted because they were invalid. Hence, actual data analysis was carried out using the test scores of the remaining 30 subjects, 19 of which were Type A, and 11 of which were Type B.

Materials

Adolescent structured interview (ASI). The ASI (Siegel and Leitch, 1981) is used to assess the Type A behavior pattern in adolescents. Classification of subjects is based on content of responses as well as behaviors and speech characteristics manifested during the interview that are indicative of the Type A behavior pattern. The wording of some interview questions were changed slightly for the purposes of this research, and these changes were made after conferring with one of the developers of the ASI, J. M. Siegel (personal communication, March 7, 1985).

State-trait anger scale (STAS). The STAS (Spielberger et al., 1983) is a 30-item scale designed to assess and differentiate state and trait anger. The

Trait Anger scale (T-anger) was of particular relevance to this study.

Interpersonal behavior survey (IBS). The IBS (Mauger & Adkinson, 1980) is a 272-item true/false inventory designed to distinguish assertive behaviors from aggressive behaviors and to sample subclasses of these behaviors. IBS scales of relevance to this research included the General Aggressiveness, Rational scale (GGR), the Hostile Stance scale (HS), the Expression of Anger scale (EA), the Verbal Aggressiveness scale (VE), the Physical Aggressiveness scale (PH), the Passive Aggressiveness scale (PA), and the Self-Confidence scale (SC).

Procedure

The ASI was administered individually to each subject, and each of these sessions was tape recorded for later scoring. Following the interview, each subject was instructed to complete the STAS and then the IBS. For three subjects, scheduling difficulties required that they complete the IBS portion of the study in two sessions. Upon completion of all tasks, subjects were briefed on the purpose of the research, given the opportunity to ask questions about the procedures they

had experienced, and thanked for their participation. Logistical considerations necessitated flexibility in requirements for place of testing for each participant. Hence, some subjects completed the interview and questionnaires in a school environment, some at church facilities, and some in their homes.

The ASI for each subject was independently scored by two raters, each of whom classified classified subjects into one of four categories, including strong A (A1), less developed A (A2), a mixture of A and B (X), and the relative absence of Type A characteristics (B). Only global Type A and Type B ratings were employed in the study. Rater disagreements were resolved using the formula employed by Chesney, Black, Chadwick, and Rosenman (1981), according to which, B + X = B; B + A2 = X; X + A2 = A2; X + A1 = A2; and A2 + A1 = A2. Among the 30 subjects included in data analysis, 19 were classified as Type A2 and 11 were classified as Type B. None of the subjects were classified as Type A1. Interrater reliability computed for global Type A and Type B ratings of the 30 subjects was .90.

Results

A series of one-way ANOVAs were computed in order to

examine the extent to which the city of testing, source of referral, or place of testing might have influenced the results on each of the relevant IBS and STAS subscales. The results of this analysis showed that of 39 one-way ANOVAs, four reached statistical significance, a result that can be attributed to chance factors. This suggests that variability due to city of testing, source of referral, and place of testing, had minimal impact on data outcome and need not be considered as sources of ambiguity in interpreting the obtained results.

Before examining the specific research questions of interest in the study, t-tests were conducted to assess the differences between Type A and Type B scores across the relevant subscales of the IBS and the STAS. The results of this analysis, which are shown in Table 1, reveal two significant outcomes. Type A subjects scored significantly higher than Type B subjects on the VE subscale of the IBS ($p = .02$), as well as on the IBS PA subscale ($p = .02$). While differences on the remaining

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Insert Table 1 about here

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subscales did not reach statistical significance, it is

noteworthy that for each subscale measuring anger, aggression, and hostility, there was a noticeable trend such that Type A subjects demonstrated higher mean subscales scores than Type B subjects.

Table 2 summarizes the findings gleaned from

Insert Table 2 about here

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multiple regression analysis of the specific research hypotheses of interest in the study. Analysis of the hypothesis that anger is experienced more continuously and aggressiveness is more prevalent in Type A's than in Type B's was accomplished by examining the degree to which scores on both the STAS T-anger scale and the GGR scale of the IBS were associated with ASI rating. The results revealed a nonsignificant association between these two subscale scores and ASI rating (multiple r = .11, p = .20). Hence, this hypothesis was not supported by the data.

Examination of the hypothesis that Type A's who show greater interpersonal hostility and verbal aggressiveness would be expected to demonstrate lower levels of self-confidence in their interpersonal skils than Type B's

involved elucidation of the extent to which scores on both the HS and VE scales of the IBS were associated with scores on the SC scale of the IBS for Type A's and Type B's, respectively. The results were nonsignificant for both Type A subjects (multiple r = .03, p = .76) and Type B subjects (multiple r = .33, p = .19). These results do not support the hypothesis that Type A hostility and aggressiveness may in part be a response to experienced lack of interpersonal self-confidence.

The main finding was related to Type A and Type B differences in expression of anger and aggressiveness. This question was explored by looking at the degree to which the PH, PA, EA, and VE scales of the IBS were associated with ASI rating, the analysis of which revealed a significant association (multiple r = .33, p = .03). Furthermore, post hoc analysis using multiple regression procedures revealed a significant association between the PA and VE scales of the IBS and ASI rating (multiple r = .30, p = .006).

Discussion

Type A adolescents did not demonstrate significantly greater levels of trait anger than Type B's, and did not show a significantly greater degree of global

interpersonal aggressiveness than Type B's. Since recent research, including literature on Type A adolescents (Siegel, 1984), has provided remarkably consistent evidence that anger and aggressiveness are significant components of the Type A behavior pattern, the failure of the present study to lend corroboration to such findings is puzzling. The fact that a trend was observed such that Type A subjects had higher mean scores than their Type B counterparts on each measure of anger and aggressiveness employed in the study suggests the possibility that had a greater number of subjects been included in the study sample, statistical significance might have been attained for more than just the two subtests for which significant mean differences in Type A and Type B scores were demonstrated.

It is also possible that the absence of Type A1 subjects may have created a state of affairs according to which the Type A group was not sufficiently extreme for significant differences in levels of trait anger and global interpersonal aggressiveness to emerge between Type A and Type B subjects involved in the study, since persons rated as Type A1 are presumably more likely to manifest a fully developed, or strongly defined coronary

prone behavior pattern than are Type A2 individuals. A further possibility is that the measures used in the study may not have been adequate to sufficiently distinguish differences between Type A and Type B adolescents on the dimensions of global anger and aggressiveness. As self-report instruments, the IBS and the STAS are measuring self-perceptions, and it is possible that subjects may have perceived themselves in a manner that was discrepant with actual levels of angry feelings or aggressive behavior. Controlled experimental manipulations may provide a clearer depiction than self-report scales of differences between Type A and Type B adolescents in global levels of trait anger and interpersonal aggressiveness.

The one significant finding of the study was that Type A adolescents are more likely to act in angry or aggressive ways than Type B's. Specifically, the results suggested that Type A's are more likely than Type B's to lose their temper, and to act in physically aggressive, verbally aggressive, and passive aggressive ways in interpersonal contexts. If one were to assume for a moment, keeping in mind the highly speculative nature of such an assumption, that the lack of significant findings

regarding global levels of anger and aggressiveness in Type A and Type B adolescents reflected a true state of affairs, the outcome of these aspects of the current study might suggest that the differences between Type A and Type B adolescents is not so much in levels of anger and aggressiveness, but in the likelihood of expression of angry feelings or aggressive behavior in interpersonal contexts. Whether this is, in fact, the case, or whether the lack of significant differences between Type A and Type B adolescents on the dimensions of global anger and aggressiveness was related to insufficient sample size, it is clear that further research would be useful in clarifying some of the ambiguities found in this study.

The significant findings pertaining to differences in Type A's and Type B's in regard to expression of anger, hostility, and agressiveness are relevant to the question of whether Type A individuals hold their anger in or freely express anger in overt ways. The results suggest that Type A's may exhibit both passive and direct modes of anger expression. Type A's scored significantly higher than Type B's on measures of verbal aggressiveness and passive aggressiveness, the first of which connotes an active mode of expression, and the second of which

refers to a more passive and indirect mode of anger expression. Perhaps it would make sense to conceptualize anger expression in Type A persons along a continuum from passive to active, with anger-in corresponding to passive modes of dealing with anger, such as negativism, complaining, or stubbornness, and anger-out referring to more active and overt expressions of anger, such as losing one's temper, being verbally abusive, or being physically aggressive. Perhaps future research could more fully address the multidimensional nature of anger expression in Type A persons suggested from the findings of this study by examining the particular factors that might influence the mode of anger expression that Type A's may adopt under a specific set of circumstances.

A slight but nonsignificant difference in Type A and Type B mean scores was observed on a measure of self-confidence such that Type B's scored slightly higher than Type B's. Since the IBS SC scale does not yield an index of global self-image or self-esteem, the lack of significance in this instance could suggest that this measure is not sufficiently sensitive to demonstrate the association that was posited in the hypothesis regarding the relationship between interpersonal self-confidence

and hostility in Type A adolescents.

Overall, the findings of this study showed no significant differences between Type A and Type B adolescents on the dimensions of global anger and aggressiveness, and on measures looking at the relationship between levels of interpersonal self-confidence and hostility. Type A's were found to be more likely to lose their temper and to act in physically aggressive, verbally aggressive, and passive aggressive ways than Type B's. This particular result is consistent with the bulk of research findings on adult Type A and Type B differences with regard to the likelihood of angry or aggresive acts. It is hoped that questions raised by the findings of this study will serve to stimulate further research aimed at the elucidation of specific aspects of the vicissitudes of anger, hostility, and aggressiveness in relation to the Type A behavior pattern as observed in both adolescent and adult populations.

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Table 1

T-test comparisons of Type A/Type B Means on IBS and STAS Subscales

	Mean				
Variable	Type A (n = 19)	Type B (n = 11)	t	df	prob
IBS GGR	60.00	53.27	1.54	13.8	0.14
IBS HS	59.15	54.18	1.02	14.6	0.32
IBS EA	56.73	51.63	1.21	17.9	0.24
IBS VE	69.68	52.54	2.56	13.2	0.02*
IBS PH	52.89	51.45	0.34	20.4	0.73
IBS PA	58.68	51.09	2.48	23.1	0.02*
IBS SC	48.94	51.81	-0.80	24.4	0.42
STAS T-anger	34.57	32.00	1.10	22.6	0.28

*Significant result

Table 2

Summary of Multiple Regression Analysis Results

Predictor Variables	Dependent Variable	Multiple r	Prob
GGR, T-anger	ASI Rating	.11	0.20
PH, PA, EA, VE	ASI Rating	.33	0.03*
PA, VE	ASI Rating	.30	0.006*
HS, VE	SC	.02	0.68
HS, VE	SC (Type A)	.03	0.76
HS, VE	SC (Type B)	.33	0.19

*Significant result