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Relevance of Physical Activity with Rage and Rage Expression in High School Students

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ABSTRACT

This survey's chief objective is to compare rage expression styles and trait rage levels in high school students who carry out physical activities and those who not. Furthermore, an effort is made to analyze variations in variables associated with gender, age, playing digital games, and sports as a listed athlete. In order to attain that objective, the "Trait Anger and Anger Expression Style Scale" revealed by Spielberger et al. (1983) and adjusted to Turkish by Özer (1994), and a "Personal Information Form" produced by the researchers were used. The study sample comprises 205 pupils (101 male and 104 female participators) who carried out physical activities and studied at schools performing in Manisa. Information is assessed utilizing standard deviation, frequency, arithmetic means, Pearson correlation as well as t-test analysis methods. In light of the study findings, doing physical activities is essential in regulating and decreasing the consequences of the feeling of rage, which can harm individuals' lives considerably. Plus, lack of physical activity and playing digital games can be assessed as an essential factor that can trigger rage and rage factors.

Key words: Rage, Rage expression style, Physical activity, Rage in adolescents.

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INTRODUCTION

Individuals who try to adapt to technological developments may experience, under changing conditions, a feeling of anger in their inner world and sometimes also encounter this in their family and close acquaintances in their environment. Like joy, annoyance, happiness and sadness, anger is a common emotional state that is experienced and felt by everybody and that has existed since the creation of mankind. Coping with this mood, which generally occurs due to dissatisfaction and is experienced so intensely that it may reach the level of violence, is by no means easy. One of the reasons underlying the feeling of anger is stated to be a person's being impeded or an individual's being interfered with while aiming for a target [1].

It is seen that the subject of anger is one that has drawn a great deal of attention from researchers, and that the first scientific studies were begun by Novaco (1975) [2]. In his studies, Novaco emphasised that as well as negative aspects, anger also has positive aspects [3]. It is seen that the feeling of anger experienced by individuals emerges, develops and ends as a reaction to situations in which they feel powerless. Therefore, preventing an individual from achieving the social status that he/she can obtain and ignoring his/her personal and moral characteristics can cause alienation and development of anger in that individual. In this process, the individual will strive to regain his/her rightful status. Achieving this transformation will also facilitate individuals' achievement of their goals and their experiencing of social change [4]. In support of this idea, Tarhan (2008) stated that the feeling of anger experienced protects the individual from making mistakes and from dangerous situations [5]. On the other hand, according to Ambrose and Mayne (1999), anger nevertheless continues to be a significant problem for societies today, just as it was in the past [6]. The feeling of anger in individuals can sometimes be experienced with mild severity, sometimes with moderate severity, and at other times very severely. Cases of anger experienced with mild or moderate severity can also be of benefit to the individual depending on their level. However, it can be seen that a feeling of anger experienced with high intensity may be harmful both to the individual and to the person facing him/her [7,8].

For the feeling of anger to be fully experienced and for anger to be brought fully under control, first of all, this emotional state must be accepted by the individual without being suppressed. Then, together with the reasons for this feeling of anger, it is necessary that the individual sees which type of anger he/she is experiencing and that he/she internalises this [9]. Cases of anger that

do not occur in this way, and are suppressed, cause the individual to display undesirable behaviours and to experience feelings such as hatred [10].

In order to enable a healthier understanding of the feeling of anger and to simplify the concept of anger, Spielberger et al. (1995) separated anger into two different categories. The first of these concepts is state anger, while the second is trait anger. State anger is defined as a temporary emotional and physiological state that can occur at different intensities and levels, and is a reaction that the individual shows against a situation that he/she experiences at that time [11]. It is the sudden emergence of anger that has built up in people over a certain period [12]. This sudden anger, which appears situationally, is easier to bring under control. After his/her anger has passed, the individual experiences a feeling of regret and shame for the actions s/he has performed towards those around him/her [13]. A perception of being in the right usually underlies this type of anger that appears suddenly. When this style of anger is used constructively, it allows the individual to be mentally at ease [14]. Trait anger, however, is defined as a reflection of emotions that include subjectivity, such as continual irritability, indignation and violence towards a situation experienced by the individual. Trait anger is a concept that generally defines the frequency with which and the level at which situational anger is experienced [11]. In situations where individuals with a high level of trait anger face any prevention or intervention, anger emerges very rapidly and is more difficult to suppress [12].

Barrio et al. (2004) stated that the feelings of anger that individuals experience can appear in various situations and styles. The experiencing of the feeling of anger in different ways is also defined as anger expression style [15]. Anger expression style was also separated into three main categories by Spielberger et al. (1983). The first of these is the individual's keeping his/her feeling of anger inside by suppressing it ("anger-in"), the second is the individual's outward projection of his/her feeling of anger ("anger-out"), and the third is the individual's establishing control with defence mechanisms such as denial, suppression and prevention by placing the anger within a logical framework (anger control) [16].

Anger expression-in is an individual's showing a tendency to suppress the feeling and thoughts of anger that he/she experiences. Although it has a harmless structure, the individual shows his/her anger by sulking, pulling a face and being in a huff [12]. Anger expression-out is an individual's tendency to display ill-tempered and aggressive behaviours by the outward projection of the feeling and thoughts of anger that he/she experiences, irrespective of the objects or people around him/her. These individuals manifest the feeling of anger they experience by slamming doors, smashing objects around them, showing a willingness to fight, and always blaming others. Anger control, however, is defined as an individual's ability to control his/her feeling and thoughts of anger, and to inhibit and prevent anger that might be projected [9].

Since the feeling of anger is a natural emotion that humans have to experience, it is very important that they experience it in a healthy way. Therefore, in order to keep the feeling of anger under control and to manage it, one should not only accept this emotion, but one must also be conscious of the way it is experienced and the reason why it occurs. The intention in controlling the feeling of anger is not to suppress it, but, on the contrary, to ensure that the feeling of anger is transmitted to the outside world in a healthy way. Suppression and prevention of anger that occurs can lead to personal problems in the individual (7,9). Consequently, acquiring the ability to experience the feeling of anger in a healthy way is conceptually the equivalent of anger control [17]. Various cognitive relaxation exercises exist to prevent the feeling of anger boiling over and to enable it to occur in a healthy way. However, one of the most efficient and effective ways of coping with this emotion is considered to be physical activity and sport. Physical activity is defined as physical exercises by which an individual's skeletal muscles are strained and relaxed, and which cause energy to be expended above the basal metabolism [18]. It is an external force applied to the muscles above relaxation level and causing the muscles to consume energy [19,20].

Individuals' participation in physical activity is an important factor in maintaining and improving their psychological health. It has been observed that physical activities, irrespective of whether they are conducted as individual or team sports, aerobic and anaerobic exercises, and continuous or discontinuous sporting activities, even conducted for short periods, reduce negative behaviours and attitudes that include anger, stress and anxiety, and, furthermore, increase positive attitudes such as psychological relief, appreciation and pleasure [21]. Physical activities and the feeling of competition that they contain have an important effect in factors such as coping with, controlling and overcoming negative emotion components like anger [22], since individuals who take part in physical activity not only acquire personal characteristics such as rivalry, discipline, courage and determination, they also learn psychological characteristics such as acceptance of winning and losing, the feeling of cooperation, the sharing effect, collaboration, taking responsibility, and respect for opposing views [23]. Within this scope, it is thought that the individual's experience of emotions such as anger, annoyance, excitement, happiness, sadness and pleasure due to participation in physical activity will assist him/her in minimising negative attitudes and behaviours.

In studies that investigate the relationship between physical activity and anger, it is also seen that physical activity has a positive effect on anger control [24,25]. In parallel with this, in the study conducted by Yıldırım et al. it was reported that physical activity performed on a regular basis improved individuals' psychological, physiological and metabolic parameters [26]. Moreover, Özdevecioğlu et al. (2013) indicated that participation in physical activity reduced individuals' anger and

aggressiveness levels and also increased positive emotionality in their behaviours [27].

When evaluated as a field of study, it is seen that studies related to anger are generally concentrated in the field of social psychology and that the conducted studies have generally been made in experimental environments [28-33]. By their nature, sports environments include the parameters intended to be created in experimental environments related to anger in the actual field. Therefore, field studies conducted in the area of sport psychology are mostly studies which, by means of sporting activities that contain physical, cognitive and psychological barriers, enable negative emotions such as anger to emerge naturally, and to be examined and analysed [34].

When the literature related to the concept of anger is examined, it is seen that the anger emotion is examined in many studies in terms of different variables. Studies that examine the relationship between physical activity and anger in adult age groups are generally concerned with the variables of gender [35-37], performing and not performing physical activity [38-42], and engaging in individual or team sports [43-50]. However, it is seen that fewer anger studies have been carried out with adolescent individuals compared to the number studies conducted with adult age groups. These studies also generally examine the variables of gender [51,52], performing and not performing physical activity [53-55], and engaging in individual or team sports [56,57]. This study, however, is carried out with high school students and discusses the relationship between anger and physical activity, since the feeling of anger is a situation that begins from birth and continues by changing, and is frequently encountered for various reasons (unfulfilled wishes, negative outcomes, unrealised expectations, etc.) in the childhood and adolescence periods [58]. Adolescent individuals experience radical changes in their lives in spiritual, intellectual, physiological and social aspects. While attempting to adapt to these changes, they may display behaviours that conflict with certain socially accepted values and judgements, and may, due to the pressure that forms, experience negative attitudes such as anger, annoyance and aggressiveness [59]. In order to experience situations such as these in a healthy and natural way, adolescent individuals that belong to the high school group are in need of anger control. Özmen et al. state that physical activity is an important tool in allowing anger to be externalised in a healthy way and in enabling anger control [60]. In accordance with the explanations and studies made, the idea that physical activity may be a tool that can be used to manage the feeling of anger, which is normal but should be experienced in a healthy way, forms the starting point of this study. In this way, it is expected that this study will contribute to the literature by creating awareness of the issue. Therefore, in the study, an attempt is made to determine the anger expression styles and trait anger levels of students at high school level who perform and do not perform physical activity. Moreover, an attempt is also made in the study to ascertain whether the anger and anger expression styles of high school students who perform and do not perform physical activity vary according to the variables of gender, age, playing digital games, and doing sport as a registered athlete.

MATERIALS AND METHODS

Study design and sample

This research is a descriptive type of study, and was conducted during the 2019-2020 academic year. The study group of the research consisted of 205 high school students who performed or did not perform physical activity and who attended schools operating in the province of Manisa. The students were reached with the convenience sampling technique. It was determined that 101 (49.3%) of the students who took part in the study were male, while 104 (50.7%) were female students; that 49 (23.9%) of the students studied in 9th grade, 36 (17.6%) studied in 10th grade, 54 (26.3%) studied in 11th grade, and 66 (32.2%) studied in 12th grade; that 113 (55.1%) of the students played digital games, while 92 (44.9%) of them did not play digital games; that 85 (41.5%) of the students played sports, while 120 (58.5%) of them did not play sports; and that 52 (25.4%) of the athletes were registered athletes, while 153 (74.6%)were unregistered but performed physical activity.

Data collection tools

A “Personal Information Form” containing descriptive information about the students and developed in line with the information in the literature, and the “Trait Anger and Anger Expression Style Scale” were used by the researchers.

Personal Information Form: This was prepared by the researchers in accordance with the information in the literature. A questionnaire form consisting of questions containing participants’ socio-demographic information and characteristics was used. The personal information form contains questions related to participants’ characteristics such as gender, age, grade level, participation in sport, and parents’ education level.

Trait Anger and Anger Expression Style Scale (TAAESS): The Trait Anger and Anger Expression Style Scale was developed by Spielberg (1983) and the Turkish translation and adaptation study of the scale was carried out by Özer (1994) [61,62]. The scale consists of 24 items and is a measurement tool scored on a scale of 1-4 as (1) “not at all”, (2) “a little”, (3) “a great deal”, and [4] “completely”. The Trait Anger and Anger Expression Style Scale consists of four subdimensions, namely trait anger, anger-in, anger-out, and anger control. It can be said that as scores obtained from the scale increase, anger also increases. In the reliability study carried out by Özer (1994), the Cronbach alpha values obtained from all group data were calculated separately, and were found to be .79 for the trait anger dimension, .62 for the anger-in dimension, .78 for the anger-out dimension and .84 for the anger control dimension (62). In the reliability

analysis made within the scope of this study, the Cronbach alpha coefficients of the scale subdimensions were calculated as .83 for the trait anger subdimension, . 69 for the anger-in subdimension, .75 for the anger-out subdimension and .80 for the anger control subdimension.

Data analysis

The data obtained from the study were examined with frequencies, arithmetic means, standard deviations, Pearson correlation analysis, and t-test. To determine whether or not the gathered data met the assumptions of the parametric tests, the skewness and kurtosis values and results of Levene's test were examined [63]. Students' anger scores depending on whether they performed physical activity, anger scores depending on gender of students who performed and did not perform physical activity, anger scores depending on whether students performing and not performing physical activity played digital games, and anger scores depending on whether students performing physical activity were registered athletes, were examined with t-test. The relationship between the variables of physical activity and playing digital games was examined with Pearson correlation analysis. In the correlation analysis, it was examined whether the relationships showed a linear correlation with a scatter diagram. Cronbach alpha values were calculated for internal reliability. Type 1 error was accepted as 5%. Statistical findings obtained from the study are presented systematically in the form of (tables 1-5) in line with the aim of the study.

RESULTS

Table 1 to Table 5 shows the obtained results.

Table 1: T-test results for comparison of trait anger and anger expression style scores of high school students regularly performing and not performing physical activity.

Variable	Physical activity	n		sd	df	t	p
Trait Anger	Yes	85	21.27	5.33	197.95	1.87	0.054
	No	120	22.86	6.429			
Anger-in	Yes	85	16.47	4.494	203	1.19	0.235
	No	120	17.21	4.369			
Anger-out	Yes	85	15.97	3.33	202.9	2.19	0.029
	No	120	17.22	4.813			
Anger Control	Yes	85	22.7	4.508	203	2.89	0.004
	No	120	20.83	4.591			

Table 2: T-test results for comparison of trait anger and anger expression style scores of high school students regularly performing and not performing physical activity according to gender variable.

Variable	Anger Style	Gender	n		sd	df	t	p
Performs Physical Activity	Trait Anger	Male	54	21.61	5.822	83	0.77	0.44
		Female	31	20.67	4.369			
	Anger-in	Male	54	16.48	4.471	83	0.29	0.977
		Female	31	16.45	4.61			
	Anger-out	Male	54	15.98	3.417	83	0.01	0.986
		Female	31	15.96	3.229			
	Anger Control	Male	54	23.48	4.843	78.12	2.32	0.023
		Female	31	21.35	3.535			
Does Not Perform Physical Activity	Trait Anger	Male	47	24.19	6.892	118	1.82	0.07
		Female	73	22.01	6.008			
	Anger-in	Male	47	17.29	4.563	118	0.16	0.871
		Female	73	17.16	4.272			
	Anger-out	Male	47	17.82	5.313	118	1.1	0.271
		Female	73	16.83	4.456			

Anger Control	Male	47	21.44	5.436	76.82	1.09	0.275
	Female	73	20.43	3.944			

Table 3: T-test results for comparison of trait anger and anger expression style scores of students regularly performing physical activity according to variable of being a registered athlete.

Variable	Anger Style	Registered Athlete	n		sd	df	t	p
Performs Physical Activity	Trait Anger	Yes	40	20.9	5.582	83	0.6	0.549
		No	45	21.6	5.136			
	Anger-in	Yes	40	16.4	4.241	83	1.13	0.892
		No	45	16.53	4.755			
	Anger-out	Yes	40	15.6	3.492	83	0.98	0.329
		No	45	16.31	3.182			
	Anger Control	Yes	40	23.62	4.933	83	1.79	0.076
		No	45	21.88	3.972			

Table 4: T-test results for comparison of trait anger and anger expression style scores of high school students regularly performing and not performing physical activity according to variable of frequently playing digital games.

Variable	Anger Style	Digital Games	n		sd	df	t	p
Performs Physical Activity	Trait Anger	Yes	49	22.08	5.491	83	1.65	0.102
		No	36	20.16	4.965			
	Anger-in	Yes	49	16.65	4.63	83	0.43	0.665
		No	36	16.22	4.356			
	Anger-out	Yes	49	16.32	3.362	83	1.13	0.261
		No	36	15.5	3.273			
	Anger Control	Yes	49	22.89	4.519	83	0.45	0.65
		No	36	22.44	4.544			
Does Not Perform Physical Activity	Trait Anger	Yes	64	24.15	6.33	118	2.39	0.018
		No	56	21.39	6.277			
	Anger-in	Yes	64	17.54	4.382	118	0.88	0.378
		No	56	16.83	4.364			
	Anger-out	Yes	64	18.01	4.695	118	1.94	0.054
		No	56	16.32	4.828			
	Anger Control	Yes	64	20.93	4.51	118	0.26	0.792
		No	56	20.71	4.72			

Table 5: Correlation analysis of variables of physical activity and playing digital games.

Physical Activity	N=205	Trait Anger	Anger-in	Anger-out	Anger Control
Yes	Physical Activity in Hours per Week	0.105	0.138	0.075	0.11
	Digital Games in Hours per Week	.271*	0.086	0.126	0.054
No	Digital Games in Hours per Week	.265**	.183*	.235**	0.045

DISCUSSION

The research findings show that students who performed physical activity had higher anger control and externalised their anger less. Moreover, it can be said that students who did not perform physical activity had higher levels of trait anger. It is stated that physical activity reduces negative attitudes and behaviours in

individuals such as anger, stress, anxiety and aggressiveness, and that on the other hand, it increases positive attitudes and behaviours such as relief, happiness and appreciation [21]. When studies in the literature are examined, in the study by Üzüm et al. it was also concluded that in individuals who did not perform physical activity, their trait anger levels were higher and they externalised their anger more, whereas individuals who performed physical activity had higher levels of anger control [39]. In their study conducted on university students, Temel et al. concluded that students who engaged in recreational sporting activities had lower levels of trait anger and externalised anger, whereas their levels of anger control were higher, than students who did not take part in these activities [64]. Similar results were achieved in Öpöz's study, and it was determined that adolescents who played sports had higher anger control levels than those who did not play sports [57]. In studies carried out with mentally disabled children, too, parallel findings were obtained, and it was seen that sports games had a positive effect on anger control levels [24]. In Starner and Peters' (2004) study, it was observed that active individuals had more positive relationships in the anger subdimensions than sedentary individuals [53]. In the study by Lutwak et al. (2001), it was concluded that sedentary hearing-impaired individuals had higher levels of internalised anger than active hearing-impaired individuals [65]. In this context, it is seen that physical activity is an important factor in experiencing and controlling anger in a healthy way, and that since students who perform physical activity are aware that when they experience the feeling of anger in an uncontrolled way, this can negatively affect their team's or their individual success, this also has an effect on their experiencing their anger in a more attentive and controlled way.

The research findings reveal that male students who performed physical activity had higher anger control levels than those who did not. However, it was also observed that all male students who performed or did not perform physical activity had higher mean scores in the trait anger, anger-in and anger-out subdimensions than female students. When studies in the literature are examined, it was also concluded in Çavdar's (2018) study that male students had higher anger control [54]. In Özkamalı's (2005) study, males' anger control levels were found to be higher than females' [66]. However, there are also studies that report that males' externalised anger levels are higher than those of females [42,51,67-69]. In contrast with this, studies can also be found which show that the gender factor has no effect on anger or anger expression styles [46,70-81]. Therefore, it is seen in the literature that a great many studies have obtained different findings related to gender. This situation may be due to the fact that age groups in the studies differed from each other. On the other hand, males' and females' different behaviours during the growth process are supported. Especially in Turkish society, it can be observed that males' anger-related behaviours tend to be regarded positively, while females are directed towards the necessity of living by suppressing their anger-related behaviours. Therefore, the difference between genders that was found in this study seems unexceptional.

The research results reveal that according to the variable of being a registered athlete, there was no difference in the levels of anger or anger expression styles of students who performed regular physical activity. However, it was seen that mean scores of students with licences who performed regular physical activity were lower in the trait anger, anger-in and anger-out subdimensions, while their levels of anger control were higher. Examination of studies in the literature reveals that there are studies stating that having a licence does not make a significant difference to anger levels or anger expression styles [82-84]. In this context, in contrast with individuals who are unregistered but who perform regular physical activity, licensed athletes take part in competitions and during training, are exposed to different parameters in both a physical and psychological sense. During competition, however, they can frequently encounter situations such as losing and ungentlemanly behaviours that may cause anger, and they are required to display reciprocal behaviour in line with the rules of sport. It is considered that such processes will foster skills related to experiencing and managing anger.

The research findings show that in students who did not perform physical activity but continually played digital games, trait anger levels were higher than in those who did not play digital games. Moreover, although not statistically significant, it was determined that these students were prone to higher levels of externalised anger. It is stated that besides having positive effects on individuals, such as support for learning, teaching by entertaining, increasing interest, and reacquaintance with information previously learnt, digital games also have negative effects, such as causing social isolation, increasing propensity for violence, forming addiction, and causing health problems related to inactivity [85]. When studies in the literature are examined, in Çakıcı's (2018) study, it was concluded that adolescents suffering from games addiction externalised their anger more than adolescents who were not addicted [86[. Regarding aggressiveness, which is a variable related to anger, in Şelimen's study conducted with individuals in the 13-14 age group, it was determined that games containing violence led adolescents to display aggressive behaviour [87]. Solak examined the relationship between computer game attitude and aggressiveness in high school students, and concluded that there was a positive relationship between computer game attitude and levels of aggressiveness [88]. Similarly, in Sağlam's study examining adolescent students' computer games, socialisation process and propensity for violence, it was determined that computer games were related to levels of aggressiveness [89].

The findings of the study reveal that in students who did not perform physical activity, as the time they spent playing digital games per week increased, their anger levels also increased. Similarly, it was also seen that in students who performed physical activity, their levels of trait anger also increased as the time spent playing

digital games increased, albeit to a lesser extent. It is stated that physical activity may be an important factor in the struggle with behavioural addictions, but that although physical activity is known to have psychological and physiological benefits for individuals, it is not included in programmes for dealing with addiction as much as is required [90]. Examination of studies in the literature reveal that in studies examining the relationship between games addiction and aggressiveness, it is concluded that as games addiction levels increase, aggressive behaviours also increase [91].

CONCLUSION AND RECOMMENDATION

In conclusion, it can be said that engagement in physical activity is important in terms of reducing the effect of and controlling the feeling of anger that can have a negative effect on individuals' lives. Moreover, failure to perform physical activity and playing digital games are evaluated as an important parameter having a negative effect on anger and the factors related to anger.

Therefore, it is considered that in the name of encouraging students to perform physical activity and enabling high school students to control their anger, conducting training and seminars will be of benefit. Furthermore, it is thought that organising competitive sports activities in schools and between schools will be beneficial for enabling students to express their anger in a healthy way and to utilise their excess energy effectively. It is also considered that supporting this study, which is designed as a quantitative research study, with a qualitative study that can expand on the relationship, perception and level of the anger and sport concepts in high school students who perform and do not perform physical activity, will be beneficial.

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