

Aggression in Young Students who Practice Physical Activity and Sports Inside or Outside the School Environment



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Submission: October 20, 2023; **Published:** November 20, 2023

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Abstract

General aggressiveness and its components are operationalized in behaviors towards and from others that aim to intimidate them in different ways; understanding the role of some independent variables is fundamental as they contribute to determining or shaping aggressive behavior. The main objective was to analyze the aggressiveness of young adolescent students and understand the possible differences depending on the year of schooling within the same study cycle, gender, nationality, and the practice of physical and sporting activity (whether only in curricular classes or if also in the club). The sample for this study included 90 individuals total (52 male and 38 female). It was applied the Portuguese version from Aggression Questionnaire. This questionnaire is composed of 29 items categorized by the original authors in four factors: physical aggression, verbal aggression, anger, and hostility, that all together constitute the factor "aggressiveness" in its total. To analyze the data, we realized descriptive statistics and used the Spearman correlation test and comparative tests such as the T test and ANOVA. The results analyzed only show that there are significant differences in total aggressiveness, physical aggressiveness and verbal aggressiveness depending on the practice of physical and sporting activity only in a school environment or not, suggesting greater emotional control on the part of those who practice it in school environment and sports club.

Keywords: Aggressiveness; Gender; Age; Education; Nationality; Sport practice

Introduction

Aggressiveness translates into the behavior of an individual towards another, with the aim of causing harm, destroying, humiliating, or oppressing them [1], being an emotional factor that is part of the individual's personality [2] in the way they react to various life events. There are three components that constitute aggressiveness, namely, the instrumental component (which includes physical aggression and verbal aggression), the affective component (which includes anger as an affective aspect) and the cognitive component (this includes hostility) [1]. The possible interactions and the multiplicity of emotions present in each sporting modality, considering the great diversity of these, each of them with specific rules and provisions, introduce great difficulties in establishing limits for what is considered aggressive

behavior, as when comparing sports where we have physical contact between athletes versus those who do not allow it [3].

However, the purpose of aggressive behaviors may not be directly associated with the competition objectives of the sport, but rather with the intention to intimidate and, as previously stated, cause harm to the opponent [3]. Using the questionnaire developed by Buss and Perry in 1992 [4], we can measure aggressive behaviors according to a four-factor model (physical aggression, verbal aggression, anger, and hostility). The age group in which the subject is located can also have an influence on their attitudes, in particularly adolescence, because it is normally a phase of identity construction and, therefore, aggressiveness can be used as a means of approval within the group of belonging [5].

Sex can also be one of the explanations for attitudes associated with aggressiveness, and, according to several authors, boys are considered physically more aggressive than girls [5-7]. In turn, women present higher levels of anger, verbal aggression, and hostility than men [6,8].

Furthermore, the ideologies and beliefs followed or adopted by sports clubs/institutions and coaches can promote violence [6,9], as can prejudices or outdated conceptions about the concept of aggressiveness [6].

This type of sport can also influence athletes' behaviors; as we know, in general, contact sports demonstrate higher levels of aggression when compared to non-contact sports [8,10,11]. Studying and analyzing aggressiveness among the school community of young adolescents can constitute an important source of information in promoting strategies to prevent acts of violence, only possible if there is an adequate understanding of the factors that influence aggressiveness. The main objective of this study is to analyze the aggressiveness of young adolescents using the Buss and Perry questionnaire [4] to understand whether there are differences depending on the year of schooling within the same study cycle, gender, nationality, and practicing physical and sporting activity (only in curricular classes or also in the sport club).

Methodology

Population

We had a total of 90 participants, all students in the Portuguese 3rd cycle of basic education, divided over the three years of this schooling cycle as follows: 7th year with a total of 17 subjects (18,9%), 8th year with a total of 42 subjects (46,7%) and 9th year with a total of 31 subjects (34,4%) of these, 52 (57,8%) are male and 38 (42,2%) are female. They have an age range between 12 and 16 years old, with an average of 13,78 years old and a standard deviation of 1,036 years old. The minority of students, 26 (28,9%) only practice physical activity at school in Physical Education and/or School Sports classes; the remaining 64 (71,1%) in addition to curricular classes also practice sports outside of school (in a sports club). Of the total participants, 65 (72,2%) have Portuguese nationality and the remaining 25 (27,8%) have other nationalities.

Instruments

We used the Portuguese version of Buss and Perry Aggression Questionnaire (Buss & Perry, 1992) [4], by Cunha and Gonçalves (2012) [1], composed by 29 items evaluated with five-point likert scale (1 = "never or almost never"; 2 = "little"; 3 = "Like this, like this"; 4 = "Quite a lot"; and 5 = "always or almost always"). This scale is grouped into four factors, namely: physical aggressiveness (items 2, 5, 8, 11, 13, 16, 22, 25 and 29), verbal aggressiveness (items 4, 6, 14, 21 and 27), anger (items 1, 9, 12, 18, 19, 23 and 28) and hostility (items 3, 7, 10, 15, 17, 20, 24 and 26).

Procedures

Informed assent was obtained from study participants, but as all participants were under 18 years of age, it was necessary to ensure informed consent from parents and/or guardians. All accepted voluntarily to participate in the study. After, followed by individual application of the questionnaire (which ensured confidentiality and anonymity to comply with the data protection regulation); the questionnaires were completed individually without interaction with third parties, were completed in an appropriate place; the time required to complete it was ensured, including the possibility of clarifying doubts. For this collection, we respected the Declaration of Helsinki as well as the ethical standards applied to research in Sports Sciences.

Data analysis

The independent variables that we considered relevant for this study were age, sex, nationality, education and playing sports only in a school environment or not. The dependent variables, which were presented in the questionnaire, were physical aggressiveness, verbal aggressiveness, anger, and hostility. We used some descriptive statistics (frequency analysis, mean, standard deviation, maximum and minimum values) and comparative tests (T-Student test and one-way ANOVA), after checking the normality and homoscedasticity assumptions (Levene test). Finally, to analyze the association between age variables and the aggressiveness variables, we used the Spearman correlation test. The level of significance adopted was $p \leq 0,05$. For data processing we used the Statistical Package for Social Sciences (SPSS 28.0 Inc. Chicago, IL) for Windows.

Results and Discussion

Study participants present mean values for total aggressiveness and its four factors (physical aggressiveness, verbal aggressiveness, anger, and hostility), with a range between 2,17 and 2,54 (Table 1).

Verbal aggressiveness was the aggressiveness factor that presented the highest average value ($M = 2,54$; $SD = 0,80$), followed by hostility ($M = 2,44$; $SD = 0,86$), total aggressiveness ($M = 2,38$; $SD = 0,60$) and anger ($M = 2,37$; $SD = 0,65$); in turn, physical aggressiveness was the factor that presented a lower mean value ($M = 2,17$; $SD = 0,70$).

To explore the results obtained in this group of participants a little more, we characterized and compared groups according to the criteria: gender, physical activity only in a school environment or not, nationality and education year (Table 2). The participants in our study, considering the gender variable, are divided into 38 females and 52 males; Girls present higher average values than boys in total and verbal aggression, as well as in anger and hostility, with boys only surpassing them in physical aggressiveness. After comparing the two groups, they did not show significant differences between them in any aggressiveness

factor. However, the trend found seems to be in line with other studies. Thus, physical aggressiveness presents higher averages in boys compared to girls, as shown some studies [1,3,7,12,13]; verbal aggression and anger present higher average values in

girls, like others [1,12,14]; Hostility also presents higher averages in females [3]. Finally, regarding total aggressiveness, the authors found higher averages in males compared to females [4,13], which contradicts our results.

Table 1: Sample characterization about aggressiveness and its different aspects.

Factor	n	M	SD	min	max
Total Aggressiveness	90	2,38	0,60	1,30	3,62
Physical Aggression	90	2,17	0,70	1,00	4,00
Verbal Aggressiveness	90	2,54	0,80	1,00	4,60
Anger	90	2,37	0,65	1,29	3,86
Hostility	90	2,44	0,86	1,13	5,00

Table 2: Characterization of general aggressiveness and its factors depending on the different groups under study.

	Total Aggressiveness		Physical Aggression		Verbal Aggressiveness		Anger		Hostility	
	M	SD	M	SD	M	SD	M	SD	M	SD
Gender (n=90)										
Women (n=38)	2,40	0,60	1,97	0,65	2,65	0,74	2,41	0,67	2,60	0,88
Man (n=52)	2,36	0,61	2,32	0,70	2,46	0,84	2,35	0,63	2,31	0,83
Practice of the modality (n=90)										
School (n=26)	2,50	0,73	2,29	0,88	2,69	1,05	2,41	0,60	2,62	0,89
School and Club (n=64)	2,33	0,54	2,12	0,61	2,48	0,67	2,36	0,76	2,36	0,84
Nationality (n=90)										
Portuguese (n=65)	2,31	0,58	2,15	0,69	2,41	0,72	2,32	0,60	2,35	0,88
Other (n=25)	2,57	0,62	2,24	0,73	2,87	0,90	2,51	0,76	2,66	0,77
Year of Education (n=90)										
7 th year (n=17)	2,45	0,67	2,13	0,72	2,73	0,89	2,55	0,76	2,38	0,82
8 th year (n=42)	2,30	0,56	2,18	0,72	2,40	0,77	2,30	0,62	2,35	0,86
9 th year (n=31)	2,44	0,62	2,18	0,68	2,62	0,78	2,38	0,61	2,59	0,88

The two groups constituted based on the criterion, practice of physical and sporting activity in a school environment - only curricular classes (n=26) - or not - curricular classes and in the sports club (N=64) - show that the average values of aggressiveness total as well as all its factors (physical aggression, verbal aggression, anger and hostility) are always higher among subjects who only practice physical and sporting activities in a school environment. After comparing the two groups, there are significant differences in Total Aggressiveness ($t(88)=-1,249;p=0,023$), Physical Aggression ($t(88)=-1,056;p=0,010$) and Verbal Aggressiveness ($t(88)=-1,156;p=0,002$), which suggests that those who practice in a school environment and to at clubs have a better control of their emotions and frustrations compared to those who only practice in a school environment.

The results we have seem to contradict another's who say that the aggression levels of athletes are higher when compared to non-athlete participants [15], particularly in the physical aggressiveness factor; Also, the work of several authors [16,17] say that athletes have higher levels of aggression in general when compared to non-athletes. In this regard, we admit that the age of the participants may play an important role and may explain some of the discrepancies found in the different studies. Portuguese students (n=65) are in the majority compared to students of other nationalities (n=25). In the case of students of other nationalities their average values of total aggressiveness and its four factors always higher than their Portuguese colleagues. Although there are no significant differences between the two groups under study, this may reflect greater difficulties in integration and inclusion, constituting a warning for decision-makers regarding

these particularities in educational and sports policies. In fact, some studies associate aggressiveness with different reasons [18], some of a contextual nature, others individual and, finally, others of a demographic nature. The fact that foreign students present higher levels of aggressiveness may be due to the still somewhat unknown school environment in which they find themselves, as they must interact through a language different from theirs, which makes their communication and integration difficult. Behaviors associated with fear, envy, threat and need for recognition from foreigners could be a possible explanation for the results obtained; Violence against young people of which that they are often victims can be a consequence of racist and xenophobic conduct, especially since the reason why they reside outside their country is often associated with a low socioeconomic status [19], certainly with an impact in the student's social life. Finally, although the participants are all from the same study cycle (3rd cycle of basic education), when divided by year of attendance (7th, 8th, and 9th year of schooling), it appears that the youngest (7th year) have a higher total aggressiveness, verbal, and anger

towards others; the oldest ones (9th grade) show greater verbal aggression and hostility than the others.

Our results are generally in line with others [20] when they reported that younger ages were strongly associated with higher levels of physical aggression, with the exception, as we mentioned, for physical aggressiveness and hostility where older people show higher levels. One study [5] consider that the high aggressiveness obtained in a sample of adolescents between the ages of eleven and fifteen when compared to a sample made up of adults, can be explained by their being in pre- or adolescence, a critical period of construction of their identity where resorting to aggressiveness is nothing more than a way of asserting themselves. When we compare the three groups, they do not show significant differences between them. However, these results suggest that age introduces changes in emotional control; For this reason and in addition, we moved forward with the study of the association between age and aggressiveness (Table 3). Physical aggressiveness ($r_s = 0,235$, $p = 0,026$) is the only variable to show a positive association with the age variable, although the correlation is low ($r_s < 0,39$).

Table 3: Spearman's correlation coefficient to measure the degree of association between total aggression and its factors with age.

Factor	Age (between 12 and 16 years old with an average of 13.78)		
	n	r_s	Sig.
Total Aggressiveness	90	0,183	0,084
Physical Aggression	90	0,235	0,026*
Verbal Aggressiveness	90	0,046	0,665
Anger	90	0,147	0,166
Hostility	90	0,168	0,112

It means that, with increasing age, participants in our study tend to increase, slightly, their physical aggressiveness, which contradicts other results [2] who found a negative correlation between age and aggressiveness, which means that, in that case, increasing age is associated with decreased aggressiveness.

The same applies to another works [21,22] who state that aggressive responses (including verbal aggression) as well as anger (as an emotional physiological response) decrease as individuals show a greater understanding of social relationships, a fact associated with greater emotional control. In turn, another author [23] considers that younger people demonstrate a lower capacity for self-control, less tolerance, less understanding, and less emotional stability, therefore a more unbalanced emotional profile; Some of our results confirm this. However, other study [18] demonstrated the existence of a negative correlation between hostility and age; This means that with increasing age, hostility tends to decrease, contrary to our results.

Conclusions

The values of total aggressiveness and its four factors (physical aggressiveness, verbal aggressiveness, anger, and hostility) presented by the study participants are low, with verbal aggressiveness having a higher average value, followed by hostility, anger and finally physical aggressiveness. Having made a comparison between groups using gender (female vs male), nationality (Portuguese vs foreigners) and education (7th, 8th, and 9th year) as criteria, we found no significant differences between the variables mentioned in any aggressiveness factor. The exception was when the criterion was the practice of physical activity and sports only in a school environment or not, where there are significant differences in total aggressiveness, physical aggressiveness, and verbal aggressiveness, all with lower results indicating greater emotional control by those who practice in school and sports clubs.

Limitations

One of the limitations of our study is the fact that our participants only represent one schooling cycle, therefore with very close ages, which did not allow us to understand the possible importance of this variable. We suggest that future studies can consider a larger number of participants, but also a large representation of schooling cycles, therefore of more differentiated ages, so that we can better assess the behavior of the variables under study.

Acknowledgments

We thank to Portuguese Society of Sport Psychology, where the first data of this work were presented at an oral conference.

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DOI: [10.19080/PBSIJ.2023.20.556061](https://doi.org/10.19080/PBSIJ.2023.20.556061)

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