Aggression during Pe Lessons with Mini-Rugby and Fight

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Abstract: The purpose of this study is to evaluate the effectiveness of a block of ten P.E. lessons on teenagers (n°= 46 experimental group, EG; and n°= 27 control group, CG) when playing mini-rugby and fights. Students completed the Aggression Questionnaire (AQ) before and after this period. The 29 items focused on the four aspects of aggression: physical (PA, 9 items), verbal (VA, 5), anger (A, 7) and hostility (H, 8). For each question, they wrote from 1 (false) to 5 (true). Regarding the $\Delta$% an incremental % of EG on CG was found: 13.37% VA, 7.51% A, 5.15% H and 8.36% TOT AQ; the only value that decreased was PA (-1.76%). The $\Delta$% average, of the four subscales, is positively equal to 10.63% for EG, while CG showed a -0.83%. With regards to the total score, the values obtained are the following: PA (EG) -1.43/PA (CG) +2.11 [average +0.34], VA (EG) -2.37/VA (CG) -0.63 [-1.5], A (EG) -2.06/A (CG) -1.67 [-1.87], H (EG) -0.25/H (CG) +0.37 [+0.06] and TOT AQ (EG) -4.82/TOT AQ (CG) -1.18 [-3]. The test showed that the aggression improved by 10% in EG.

Key words: educational responses, aggression questionnaire, mini-rugby

Aggression is overt, often harmful, social interaction with the intention of inflicting damage or other unpleasantness upon another individual. It is a virtually universal behavior among animals. It may occur either in retaliation or without provocation. In humans, frustration due to blocked goals can cause aggression. Submissiveness may be viewed as the opposite of aggressiveness. In definitions commonly employed in the social sciences and behavioral sciences, aggression is a response by an individual that delivers something unpleasant to another person. Some definitions include that the individual must intend to harm another person. Predatory or defensive behavior between members of different species may not be considered aggression in the same sense. Aggression can take a variety of forms which may be expressed physically or communicated verbally or non-verbally: including anti-predator aggression, defensive aggression (fear-induced), predatory aggression, dominance aggression, inter-male aggression, resident-intruder aggression, maternal aggression, species-specific aggression, sex-related aggression, territorial aggression, isolation-induced aggression, irritable aggression, and brain-stimulation-induced aggression (hypothalamus). There are two subtypes of human aggression: controlled -instrumental subtype (purposeful or goal-oriented); and reactive-impulsive subtype (often elicits uncontrollable actions that are inappropriate or undesirable). Aggression differs from what is commonly called assertiveness, although the terms are often used interchangeably among laypeople (as in phrases such as “an aggressive salesperson”). Ethologists study aggression as it relates to the interaction and evolution of animals in natural

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settings. In such settings aggression can involve bodily contact such as biting, hitting or pushing, but most conflicts are settled by threat displays and intimidating thrusts that cause no physical harm. This form of aggression may include the display of body size, antlers, claws or teeth; stereotyped signals including facial expressions; vocalizations such as bird song; the release of chemicals; and changes in coloration. The term agonistic behaviour is sometimes used to refer to these forms of behavior. Most ethologists believe that aggression confers biological advantages. Aggression may help an animal secure territory, including resources such as food and water. Aggression between males often occurs to secure mating opportunities, and results in selection of the healthier/more vigorous animal. Aggression may also occur for self-protection or to protect offspring. Aggression between groups of animals may also confer advantage; for example, hostile behavior may force a population of animals into a new territory, where the need to adapt to a new environment may lead to an increase in genetic flexibility. The frequency of physical aggression in humans peaks at around 2–3 years of age. It then declines gradually on average. These observations suggest that physical aggression is not only a learned behavior but that development provides opportunities for the learning and biological development of self-regulation. However, a small subset of children fail to acquire all the necessary self-regulatory abilities and tend to show atypical levels of physical aggression across development. These may be at risk for later violent behavior or, conversely, lack of aggression that may be considered necessary within society. Some findings suggest that early aggression does not necessarily lead to aggression later on, however, although the course through early childhood is an important predictor of outcomes in middle childhood. In addition, physical aggression that continues is likely occurring in the context of family adversity, including socioeconomic factors. Moreover, “opposition” and “status violations” in childhood appear to be more strongly linked to social problems in adulthood than simply aggressive antisocial behavior. Social learning through interactions in early childhood has been seen as a building block for levels of aggression which play a crucial role in the development of peer relationships in middle childhood. Overall, an interplay of biological, social and environmental factors can be considered. What is typically expected of children? Young children preparing to enter kindergarten need to develop the socially important skill of being assertive. Examples of assertiveness include asking others for information, initiating conversation, or being able to respond to peer pressure. In contrast, some young children use aggressive behavior, such as hitting or biting, as a form of communication. Aggressive behavior can impede learning as a skill deficit, while assertive behavior can facilitate learning. However, with young children, aggressive behavior is developmentally appropriate and can lead to opportunities of building conflict resolution and communication skills. By school age, children should learn more socially appropriate forms of communicating such as expressing themselves through verbal or written language; if they have not, this behavior may signify a disability or developmental delay. The first issue, that arises in the lean out the topic of this survey, is terminological. The Latin term “adgredior” which is attributable to the term aggression, means a “forward movement” that does not necessarily implies the intent to harm someone or something. In contrast, the presence of a certain amount of aggression is fundamental to the person to explore the world, and move towards it. The fundamentally adaptive aspect of the aggression is emphasized by the ethology, whose vision, that impulse is considered essential for the development and conservation of the species. It is evident that the adoption of aggressive behavior in some contexts and with particular frequency can be harmful, both to those who manifest, that for those who suffer. In psychology aggression is referred as a negative value to “series of acts deliberately offensive on the physical, material, psychological”. It is a useful definition because it allows you to highlight different negative aspects of the phenomenon. It can be distinguished between “direct aggression”, physical or
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verbal explicitly addressed to a subject, and “indirect aggression”, which is based not on physical actions and even explicit, but rather forms of ostracism; giving equal importance to the psychological and physical aggression. It is also necessary to differentiate between “reactive aggression” and “pro-active aggression”. The first is impulsive, often explosive and out of control, characterized by high levels of arousal, anger and fear, manifesting itself as a reaction to antecedent conditions that the subject’s eyes are seen as a provocation; the second is aimed at achieving a specific purpose, it is dominated by cognitive and intentional components and characterized by low levels of arousal. Another classification distinguishes between violent acts of type I, impulsive, and type II, that involve a rational design to achieve the purpose. The acts of type II, appear less frequently than those of type I but are more brutal than the latter. When the aggression involves explicit violations of the norms, values or laws that regulate social behavior, we are talking about crime or antisocial behavior. For this reason it is necessary to distinguish between aggressive syndromes, such as the destruction of objects, bullying, vandalism, getting into fights and generally cause physical harm to someone, and delinquent syndromes, where they transgress social norms, such as stealing, lying and truancy from school. Different in the two syndromes are the causes and evolutionary pathways, in addition to various risk factors. The diagnostic criteria are not very sensitive to variables such as intentionality and meaning attributed to the aggressive act on the part of those who perform it, the key factors to correctly interpret the behavior in relation to age. To overcome this deficiency, some authors of the psychoanalytic school, attach greater importance to the structure of personality within which it develops aggressive behavior, by deriving the distinction between aggression in narcissistic structure, where there is a lack of empathy, an inability to experience emotions; and borderline structure, where it is the dominant lack of control, impulsivity, and intense emotions. Children often use aggressive behavior among peers very early with three purposes: defend personal property, or what is perceived as such; establish dominance inside of the group, with the aim to regulate even interpersonal conflicts; act at the psychomotor level psychological tensions, not necessarily pathological, but often consistent with the different stages of development. Even in children is possible to distinguish a form of reactive aggression as a form of pro-active aggression; it may happen that one of the two forms becomes a true relational style. It can also recognize a form of “prosocial aggression”, detectable as early as two years, which has the primary objective to inflict harm, but to win a socially approved goal. In this sense, the child's behavior will be influenced by the reference values of the culture which it refers. Considering the development process, is possible to notice that the young child is more conducive to using forms of direct physical aggression, since the tool is accessible language, the aggressiveness of the verbal component is enriched. This undoubtedly has a value, because it allows the child to regulate their own emotional states and to avoid channelling in the actions their psychic energy. Metallization and language are symbolic functions needed for the regulation of the aggressive behavior, but not sufficient. They support the use of more complex forms of aggression but no less harmful, such as exclusion from the peer group, rumors/hearsay, the judgment and the criticism. During adolescence, the various aggressive behavior, assume further significance. The boys are frequently in conflict with the rules imposed by both the household, who by the company. It happens that children with behavior in the “norm” can develop aggressive behaviors aimed at managing the conflict with the parents and to the defense of their right to experiment as autonomous individuals. Generally, these behaviors are not framed as anti-social because they are deliberately made with the intent to injure the rights of third parties. The adolescent transgression is to serve the development of personal identity and the regulation of conflict with parents, that is, with those values and rules, handed down from previous generations. Only when aggressive behavior give rise to rigid behavioral patterns and coactive, it outlines disease patterns of the oppositional defiant
disorder, conduct disorders, disorder of antisocial personality and of attention deficit/hyperactivity. Therefore it is necessary ask ourselves: what makes aggression normally present in childhood, and is necessary for our approach and discover the world? To turn into behavior at risk of becoming a real disease, and which are, if any, the risk factors? Various studies have shown that there isn’t single causal factor in aggressive behavior, but rather is believed to be the result of complex interrelationships between constitutional and environmental variables. Genetic factors are responsible for 50% of the development of aggressive behavior; only the inability to feel empathy, deep emotions and guilt seem to be directly influenced by genetic factors. The main engine of the impulsive aggressiveness seems to be the dysfunction of the serotonergic system; in fact, high levels of hyperactivity and impulsivity in childhood and adolescence, are a risk factor for the later development of conduct disorders. However, environmental factors of type stressful are able to interact with the individual's genetic structure in the regulation of neurobiological system, which intervenes in the development of the nervous system. It should be emphasized that, several studies have shown a higher prevalence in males than in females, with a higher prevalence of conduct disorders, where the ratio is 4:1, and this could be attributed to support the hypothesis for which constitutional factors in determining aggressive behavior (such as higher levels of testosterone, which would result in a greater tendency to engage in aggressive behavior to adjust normal relations with others). But, as mentioned earlier, it has been shown that the relationship between blood levels of testosterone and the frequency of aggressive behavior in the same subject varies depending on the environmental and social. Females are more constitutionally early language development and more socially competent than their peers males, permitting a better regulation of aggression drive. This is true, but only to be followed by an impulsive scope aggression and not for aggressiveness in general. This means that females are less aggressive than males, rather they tend to use less direct forms of aggression, not exposing explicitly in conflicts in which they think they are at a disadvantage. A constitutional factor, biological, that can undoubtedly influence the tendency to use aggressive behavior is the linguistic deficit. The inability to adequately communicate not only hinders the emotional self-regulation, but in most cases leads to a painful sense of frustration in the child and adolescent. This condition occurs, especially if associated with a low IQ (intelligent quotient), which is one of the predictors of antisocial and delinquent behavior. One can therefore conclude that the tendency to use aggressive behavior in a dysfunctional, is the result of the interaction between biological and environmental factors. There are structures in the brain that control higher functions, the prefrontal areas, which are essential for the regulation of their own behavior and their own emotions. Highly immature at birth, the prefrontal areas are developed mainly during the first two years of life, continuing their maturation into adolescence; in a manner that is highly dependent on the neurobiological regulation of the endocrine system; with particular relevance to serotonin, dopamine, cortisol, epinephrine and norepinephrine. Other structures are involved in the activation of basic emotional responses, the limbic system and the amygdala; every time that the brain detects a threat, the limbic system is activated and induces emotional reactions, behavior (such as feeling fear) and physiological (increased heart rate). Faced with a threat, the basics reactions are simple: the fight or the escape. The activation of the prefrontal cortex, through its connections with the amygdala, allowing the higher cognitive functions to be able to adjust retroactively the same amygdala and its basic reactions. However, the maturation of the prefrontal cortex, occurs differently depending on the environmental conditions in which a person lives; and demonstrated that the aggressive behavior of children and adolescents, there are many more poor families from the affective-relational point of view. The environmental factors most related to the development of aggressive behavior are: poor or absent supervision by parents associated with aggressive behavior and/or exaggerated punishment, inconsistent and/or rejecting parental
figures, familiar alcoholism, maternal depression, mistreatments and/or sexual abuse. It should be emphasized that not all the people living in disadvantaged situations, or who have been abused, adopt an aggressive lifestyle. It seems that in order for that to happen, there must be the presence of biological and environmental factors, because you have a disorder of aggression.

The modulation of aggression can be trained and coached already during developmental age, as well as awareness of the amount of energy at its disposal. The knowledge is done by a primary and needful tool which is the contact; this can be: ocular, verbal, non-verbal and, finally, physical. Having to bring all this to the pragmatism of technical movements in P.E., immediately, the thought goes to disciplines such as rugby and struggle in its various forms. The mini-rugby is an educational “sport game”, of motion, collective, of situation, acyclic, symmetric, alternating aerobic-anaerobic systems with the use of an oval ball. It is one of the most recommended activities in the developmental age, subjects spend, in this period, gradually and naturally from the movement to the game, from run to the race shots, from the common ball launches to the required ball passes of the sporting discipline. The mini-rugby game is the sport of rugby declined for children and adolescents and serves to introduce their discipline and values of rugby. In this respect it is also called “rugby propaganda”; is also referred to, and significantly used in international surveys, as “educational rugby”. The Rugby Football Union (RFU), English Federation of Rugby, has commissioned a team of experts (Core Values Task Group), a basic but daunting task: summarize, after nearly two hundred years of history and culture oval, the fundamental values on which is based the rugby (Rugby Core Values). With the aims to explain, share, transmit and support they found: teamwork, respect, enjoyment, discipline and sportsmanship. These are the values that sustain the sport closely and that it is recommended to promote especially in teaching. Teamwork: fundamental in rugby; it is an inclusive sport that welcomes all, because work as a team enriches the individual human experience. On and off the rugby field player works for the team, not only for himself, realizes that everyone has an important role. Rugby gives the players virtuosity of individuality, to give the way to the rise of the group in which the individual competitiveness, before form, then combine, according to pre-established schemes, translating the contributions and abilities of all in the history of the match event. This is the “group life” of specific feature of rugby; live it means strive towards that purpose training that is so dear to healthy communities, because it has as its purpose to support a genuine and sociality education. Respect: mutual dutifulness is the basis of this sport. Respect for the referees and their decisions, for the opponents peers, for the public, for those who coach and those who manage own and that of others clubs. Enjoyment: pleasure, fun is the reason why people play rugby, we follow it, we are committed to it, we feel part of the family of rugby. Discipline: at the base of the sport there is a strong discipline, made of loyalty, honesty, compliance with the rules. Sportsmanship: the friendship has a strong rugby tradition of camaraderie that joins teammates as adversaries, and in this sense it is the sport of friendship. Fair play both on and off the pitch, rugby is played on the field to get the win but not at any costs. Always referring to the RFU, these are the signs that complement the five basic values: play to win, but not at any cost; win with dignity, lose with grace; observe the laws and rules of the game; respect opponents, referees and all participants; reject cheating, racism, violence, drugs; enhance volunteers and managers alike; enjoy the race. This synthesis can be enhanced. There is a dimension that we consider inherent to the sport and that is certainly also of rugby: that of solidarity. In the game of rugby advancement is guaranteed by the ready support of teammates. The help during the game teaches solidarity in life off the field. The principles of the IRB (International Rugby Board) are: integrity, passion, solidarity, discipline and respect.
Participated in the project 73 students from three classes of a secondary school grade of Milan city centre, in northern Italy, aged between twelve and thirteen years old: 23 girls (F) and 50 boys (M) [n° cohort TOT = 73, 68.48% M and 31.52% F]. The purpose of this study is to evaluate the effectiveness of a block of 10 practical lessons, propaedeutics, aimed at educating a group of preadolescents. Before and after this period of time the cohort were asked to complete the Aggression Questionnaire (AQ). The content of the lessons have been following a sequential order of complexity and emotional involvement, in order to submit as the rules and fundamental principles of the mini-rugby sport game. The lessons were conducted during school hours, with a duration of fifty minutes each, by a sport science expert and under the supervision of the teacher of physical education. The students were divided according to the section of belonging: the first two have formed the experimental group (EG, n° = 46) who participated in a form of specific lessons on mini-rugby and on fighting games; with the same process, has been proposed the AQ at the third class that covered the role of a control group (CG, n° = 27), which has not intentionally participated at the teachings proposed. Data are collected through a questionnaire, internationally validated, and subjected to European student cohorts of the same age. Each lesson provided two types of aims: specific objectives of the sport game (SOR) and specific objectives of aggression (SOA). Lesson n°1 SOR: how to score the goal; SOA: physical contact with the ground, physical contact with the partner/companions. Lesson n°2 SOR: how to score the goal, how to stop a player with the ball from the touched to the locking; SOA: express the verbally emotions, physical contact with the ground. Lesson n°3 SOR: how to score the goal, how to stop a player with the ball from the touched to the locking; SOA: express the verbally emotions, physical contact with the ground, physical contact with the partner/companions, collaboration and socialization with peers. Lessons n°4-5-6-7 (in this mini-cycle of these four lessons was maintained the same propaedeutic concept with different specific exercises and games) SOR: how to score the goal, how to stop a player with the ball from the touched to the locking, “not forward” passage; SOA: physical contact with the ground, physical contact with the partner/companions, collaboration and socialization with peers. Lessons n°8-9-10 (in this mini-cycle of these three lessons was maintained the same propaedeutic concept with different specific exercises and games) SOR: how to score the goal, how to stop a player with the ball from the touched to the locking, “not forward” passage, the offside; SOA: physical contact with the ground, physical contact with the partner/companions, collaboration and socialization with peers. To measure the level of aggression was used the
Italian version of AQ. The first version of the questionnaire was created in 1992 and is composed of 29 items. It can be considered a completion of the BDHI that the same author had developed over thirty years before. Is today one of the most used tools in the evaluation of different levels of aggression in children and adolescent populations. The items inspecting the four aspects of aggression: physical (PA, 9 items), verbal (VA, 5), anger (A, 7) and hostility (H, 8). For each question, you must assign a score of a minimum of 1 (false) to a maximum of 5 (true). By the total score (TOT AQ) is quantified aggressiveness in every young person analyzed, obtained from the sum in the four aforementioned subscales (score from 29 to 145), but also the individual trend in each of them. Data from the validation study of the Italian version of AQ confirm that the instrument is statistically valid for the measurement of aggression, presenting adequate internal consistency reliability and adequate construct validity in the examined samples. The methodological limitation of the project is that this questionnaire in the Italian version is valid for a population of adolescents and young adults with an age between 13 and 36 years old. Four years later of the Italian survey, a study was carried out in Spain: submitted to a population of 1116 students (pre-adolescents between the ages of 9–11 and adolescents aged 14–17 years old). The data were analyzed using a test-retest to assess the differences in pre and post-intervention and significance was assumed at p < 0.05. The results seem to confirm the initial hypothesis that this project wanted to see and that is that the mini-rugby and fighting games allow the expression of positive social, educational, cultural and sporting activities that may be useful in the prevention of violent and aggressive behaviors in their reduction to improve the welfare of the analyzed students. In confirmation of what has been said above, to get the significance of the survey, the values of the t-student should be; p1 < 0.001 comparing the experimental group between the pre-post values; p2 < 0.01 comparing the mean values between the EG and CG; p3 < 0.05 comparing the average percentage between the EG and the CG. The t-student obtained in the AQ statistics were: p1 = 0.002, p2 = 0.008 and p3 = 0.01. All the values are less than the t-student references for this reason the study can be considered as valid. Most of the AQ subscales reported a significant decrease, showing how the mini-rugby and games of contacts, allow for better management of behavioral and cognitive-emotional. They also allow to measure and test the skills in different roles, working actively in the formation and consolidation of self-esteem. The results, for better analysis, are focused on two fronts: the differences (delta, Δ) of score and percentage (%) of both groups EG and CG (Figure 1). Considering, for a moment, all the analyzed cohort (n° = 73, EG+CG) at the end of the survey there has emerged a mean score improved of: 0.13 PA, 1.71 VA, 1.92 A, -0.12 H (the only section regressed) and 4.09 for the TOT AQ. Regarding the Δ% was found a increment % of EG on CG: 13.37% VA, 7.51% A, 5.15% H and 8.36% TOT AQ; the only worsened value is PA (-1.76%). The Δ% average, of the four subscales, is positively equal to 10.63% for EG, while CG showed a -0.83%.

![Figure 1](image1.png)

**Figure 1** Differences of Score (on the left) and Percentage (on the right) in AQ of Both Groups EG and CG
As regards the total score (pre-post intervention), for each area analyzed and the total, the values obtained are the following (Figure 2): PA (EG) -1.43/PA (CG) +2.11 [average +0.34], VA (EG) -2.37/VA (CG) -0.63 [-1.5], A (EG) -2.06/A (CG) -1.67 [-1.87], H (EG) -0.25/H (CG) +0.37 [+0.06] and TOT AQ (EG) -4.82/TOT AQ (CG) -1.18 [-3]. It can be said that, on average, the negative score (sign “+” in the calculation) were obtained in the areas PA and H; while VA, H and TOT AQ results are as positive for the purpose of research (sign “-”).

Finally, analyzing the Δ score of EG compared with those of CG, as is clear from the same Figure 1, is subject to a significant differential range, specifically with: PA -4.08, VA -1.48, A -1.07, H -1.15 and TOT AQ with an important -6.33.

The choice of the mini-rugby sport game is dictated by the fact that consists in an activity that involves collaboration but also a proximity and physical contact characteristic of the expressions of aggressive behaviors between subjects. From the results obtained it can be assumed that the 10 classes offered to boys and girls have stimulated them to regain contact with each other in a form of game, implementing the physical education curriculum of extracurricular activities during afternoons with the mini-rugby and fighting games, it seems a choice that teachers may adopt to help the students a more harmonious physical and mental development. Never forget a fundamental assumption in their teaching: it is necessary that teachers should ensure that the lessons are carried out in complete safety, according to clear and precise rules, in the absolute respect for others. The use of a single instrument to collect the data, the AQ, is an effective limit, it may be useful for future works, considering the follow-up controls in order to assess the long-lasting effects of the educational projects. The goal of the interventions aimed at reducing youth aggression must be to combat violence, but not inhibiting the aggressiveness then teaching to manage it in a positive way, even so turning it into initiative, creativity and desire to surpass themselves. The test-retest administration of the AQ, in the examined study cohort has further proven to be an efficient evaluation method, and objectively validated, to quantify the overall performance and also the subscales that compose the same aggression. In our specific case has been able to evaluate the efficiency of a
three-months block of lessons related to learn mini-rugby and techniques of fight, in preadolescent age, resulting with an average improvement of 10% in EG and a slight worsening those who belong to CG (a group that did not follow the educational path) of about 1%. It was really interesting to see how you can strictly educate the aggressiveness through the practice of PE within the school context. During further investigations, in order to validate even more detailed the method of the double administration of the procedure, treatments of the same type are recommended in groups that differ from that we used (by age of subjects, educational approaches, a society in which it is carried out, etc.) and, at the same time, in the pre/post process of planned physical activities, maybe varied and not strictly related to aggressiveness, but anyway learnable during the age of development. The educational institution is called, being in the forefront, to think of new teaching-educational interventions in such a way as to facilitate the organization and also the resolution of conflicting dialogue and experimentation of the positive management of emotions.

References