

Manifestations of Aggressive Behaviour in Pupils – Theoretical Views and Research Findings

Abstract

The study presents results of research conducted by means of the BPAQ and Cyber-Bullying Tolerance questionnaires on a sample of 788 elementary school pupils of the 8th and 9th grades. It shows an increase in verbal aggression, hostility and anger in the pupils. In terms of gender, the increase was confirmed in verbal aggression in boys and physical aggression in girls. Tolerance to cyber-bullying as a form of aggressive behaviour increases with the development of science and technology and the increase in pupils' aggressive behaviour. Knowledge of manifestations and causes of pupils' aggressive behaviour is the basis for the educational work of teachers and other professionals.

Keywords: *aggressive behaviour, BPAQ questionnaire, physical aggression, hostility, cyber-bullying, verbal aggression, anger.*

Introduction

Manifestations of aggressive behaviour are a negative phenomenon of contemporary society, having consequences not only in the private life of a part of the population, but also in the life of the whole society. The study focuses on the theoretical clarification of the essence of aggressive behaviour and accentuation of the problem of an exact definition of aggression and cyber-bullying in human behaviour. Aggression and aggressive behaviour are perceived in the context of amoral and antisocial behaviour, social pathology and/or deviation by most of the authors studying this phenomenon. As stated by P. Ondrejko, violence increas-

ingly becomes an everyday occurrence, a part of cultural normalization (violence habituation). Unfortunately, he also states that human creativity is not limited only to scientific discoveries, technological inventions and artistic production, but it also includes creativity in violence and terror (2009, pp. 81–83). Sensitively perceiving everyday events in our surroundings we agree with the author that great violence tends to have its germs in “minor” acts of violence.

The school and teachers play an important role in addressing the issue of pupils’ aggressive behaviour. Daily contact with pupils enables them to capture even “minor” forms of aggressive and violent behaviour, diagnose them and intervene educationally.

1. Theoretical Basis

1.1. Aggression and Essence of Aggressive Behaviour in the Child

Aggressive behaviour can manifest itself both in a positive and a negative form. In an older professional publication, aggression is defined by A.H. Buss (1961) as a mode of behaviour, reaction to a stimulus, characterised by its properties – offensiveness, violence, destruction. P. Seidler (2005, p.87) emphasises another property, namely an unreasonably violent reaction to even minor stimuli. A concept co-related to aggression is aggressiveness as a tendency to act offensively. It may be physical (fights or attacks), psychological (verbal) and relational, e.g. social exclusion. Verbal and physical aggressiveness include hurting and harming others and represent an instrumental component of behaviour. Hostility as an attitude is accompanied by feelings of ill will and injustice and represents a cognitive component of behaviour. Anger refers to feelings and attitudes and is an emotional or affective component of aggressive behaviour. Anger and hostility have physiological effects on the vegetative and somatic nervous system and, in both cases, represent a tendency to aggressive behaviour (cf. Spielberger, C.D. et al., 1995, Van Goozen, S.H. et al., 1994). The typology of aggressive behaviour varies; it includes various types and forms of inappropriate and antisocial behaviour. An increasingly frequent form of aggressive behaviour in children is bullying. In the Slovak Republic, the issue of aggression among children has been dealt with by E. Gajdošová and G. Herényiová, who developed the programme of Tolerance versus Violence at Schools (2006) based on a theoretical-empirical platform. M. Adamík-Šimegová (2011) did research into the cognitive, emotional and moral aspects of bullying. She found out that a third of aggressors were also victims of bullying, while the most frequent forms were slander, physical and verbal aggression, exclusion from

the group, bullying with a sexual context, threats, theft and insulting messages via mobile phone and the internet. In the Slovak Republic, the issues of risk behaviour, delinquency and criminality, and aggressive behaviour have been dealt with by I. Emmerová (2011), P. Ondrejkoivič (2009) and others.

It is obvious that the causes of aggression are heterogeneous. C. Határ (2007, p. 28) highlights three basic categories of aggression: the theory of innate inclination, the theory of reaction and the theory of social learning. Aggression may be determined by biological-physiological and psychological components, but also by the socio-cultural environment in which the person moves. The same is the reason why acts and forms of aggressive behaviour have taken different shapes across history. The knowledge of the forms and ways of pupils' aggressive behaviour at the beginning of the 3rd millennium is enriched by new ways of inappropriate behaviour. With the development of science and IT technology penetrating schools, aggressive behaviour moves to the cyberspace: as a result of which we can talk of cyber-bullying, which is in the centre of interest also of Slovak specialists (Hollá, K. 2009, 2010; Kariková, S., Šimegová, M., 2009; Kariková, S., 2010; Dulovics, M., 2011; Kováčová, A., 2011; Emmerová, I., 2012 and others).

The National Crime Prevention Council (NCPC) characterises cyber-bullying as abuse of the internet, cell phones and other text or image transmitting devices with an intention to hurt or embarrass another person. J.W. Patchin and S. Hinduja (2012) speak of intentional and repeated harm caused by computers, telephones and other electronic devices. Cyber-bullying constitutes repeated, intentional, aggressive behaviour in the form of online attacks on a victim or victims, who cannot defend themselves against such attacks. The most frequent forms of cyber-bullying include: online provocation, online stalking, online harassment, online defamation, online cheating, exclusion from an online group, etc.

2. Research

2.1. Research Subject and Questions

The subject of the research was aggressive behaviour in pupils of older school age. The purpose of the research was to find out and verify the level of pupils' aggressive behaviour in the west Slovakia region and to find out the relation between aggressive behaviour and tolerance to cyber-bullying. The following questions emerged from the purpose:

Are there any differences in the level of pupils' aggressiveness in terms of the components of aggressiveness and in terms of gender?

- Will the same level of aggressive behaviour show in pupils repeatedly?
- Is there a relation between aggressive behaviour and tolerance to cyber-bullying?

2.2. Research Sample

The sampling design was based on four variables: gender, age, class and geographic conditions. The group selection represented a sample of 850 pupils of the 8th and 9th grades of elementary schools (state and church ones) in the west Slovakia region. Participants in the research were pupils of older school age, 14 to 16 years old.

The research took place within two school years (2008/2009, 2009/2010):

- **In the 1st year of the research** the group selection consisted of 350 respondents. Out of the number, 8 questionnaires were filled in incompletely or incorrectly. In the 1st year, the return of questionnaires was 97.7%. Thus, (n) 342 pupils, 174 boys and 168 girls participated in the research investigation;
- **In the 2nd year of the research** the selection consisted of 500 respondents. The research was conducted using 2 research tools. The questionnaires (BPAQ and Cyber-Bullying Tolerance Questionnaire) were answered by 446 participants, representing the return of 89.2%. (n) 446 pupils participated in the research, out of whom 233 were boys and 213 were girls.

In total, 778 pupils participated in the research. The reason for the selection was the fact that at this stage of development children search for their identity by means of the influence of their families, peer groups, various subcultures and media, which has an enormous impact on their personalities, behaviour and experience. In this period, aggression becomes a highly stable personal characteristic, especially in boys (Cairns, P., et al., 1989, in Berk, L.E., 1994).

2.3. Research Methods and Methodology

For the requirements of the research, the Aggression Questionnaire by A.H. Buss and M. Perry (1992) and the Cyber-Bullying Tolerance Questionnaire were chosen.

The Aggression Questionnaire (hereinafter BPAQ) is based on an older version of the Aggression and Hostility Inventory BDI (Buss, A.H., Durkee, A.) and is a revised version of the inventory. It is a self-assessment inventory based on an assumption that aggression as a personality trait and complex phenomenon can be divided by types into physical and verbal aggression, hostility and anger.

The above questionnaire represents a standardized research tool for aggression measurement in the US population for the age group of 30-year-olds. Out of the

psychometric properties of this research tool, Cronbach's alpha coefficient for the total score of aggression 0.89 is given, with the coefficient fluctuating from 0.72 to 0.85 in individual aggression components. The values mentioned give evidence of good internal consistency of the questionnaire. The test-retest reliability was carried out within 9 weeks and its value amounted to 0.80 (Buss, A.H., Perry, M., 1992). The Aggression Questionnaire BPAQ is a research tool with 29 items, measuring four types of aggressive behaviour – verbal aggression (5 items), physical aggression (9 items), anger (7 items) and hostility (8 items) on a 5-point Likert-type scale, on a scale from 1 “*extremely uncharacteristic of me*” to 5 “*extremely characteristic of me*”. Two items (no. 9 and no. 16) are reverse scored (cf. Table 1).

Table 1. Aggression Types and Values by BPAQ (1992)

Aggression Types	Item No.	Minimum score	Maximum score	Men %	Women %
Physical aggression	2, 5, 8, 11, 13, 16*, 22, 25, 29	9	45	24.3	17.9
Verbal aggression	4, 6, 14, 21, 27	5	25	15.2	13.2
Anger	1, 9*, 12, 18, 19, 23, 28	7	35	21.3	20.3
Hostility	3, 7, 10, 15, 17, 20, 24, 26	8	40	17	16.7
Total	1–29	29	145	77.8	68.2

As far as the questionnaire verification in other countries is concerned, many studies were done in Europe (in Italy, Spain, Holland, Germany, etc.), America and Japan. Primarily, it was designed to measure aggression components in the adult population. It was also used to measure aggression in children and adolescents, e.g. in research by V.V. Ruchkin, M. Eisemann (2000, age of respondents 14–18), M. Morren and C. Meesters (2002, age of respondents 12–18), J.P. Maxwell (2007, average age of men 21.91 and women 19.72), M. Sommantico et al. (2009). In 2009 in Lebanon, the BPAQ questionnaire was used in the research *Adolescents Video Game Habits as Predictors of Aggressive Behavior, Hostility and School Performance with pupils at the age of 13–15* (N.G. Hanna, 2009).

For the purpose of our research, the BPAQ questionnaire had to be modified and revised to meet the requirements of the original questionnaire. The BPAQ questionnaire was modified in 2007/2008 on a sample of 246 pupils of the 8th and 9th grades. The reason for the modification was translation and stylistic revision of items 1, 3, 9 and 24, in which the subject of research was adapted.

The Cyber-Bullying Tolerance Questionnaire was used to find out the level of the pupil's tolerance to aggression and cyber-bullying. Individual items of the questionnaire were divided into two subscales by the aggression forms measured:

1. Subscale of aggressive behaviour (items 1, 2, 3, 4 and 8);
2. Subscale of cyber-bullying (items 5, 6, 7, 9 to 20).

The Likert-type attitude scale questionnaire was capturing the level of respondents' tolerance to cyber-bullying on an odd number 5-point scale, from 1 "I definitely do not agree" to 5 "I definitely agree". The questionnaire consisted of 20 items, each returning 1 to 5 scores. The final result was a score of 20 to 100. Questions 11 and 12 were reverse scored. The level of the pupil's tolerance to cyber-bullying was measured by a total sum of scores, with a higher total score indicating a higher level of tolerance, a lower total score indicating a lower level of tolerance to cyber-bullying.

In processing of the research data, descriptive statistics were used, namely the description of central tendency (arithmetic mean \bar{x} , median \tilde{x} , mode \check{x} , standard deviation σ), the Wilcoxon Two-Sample Test and Spearman's rank correlation coefficient.

3. Research Results and their Interpretation

Level of Pupils' Aggressive Behaviour

Aggressive and hostile behaviour is a serious problem. Aggressive behaviour may be considered a problem of the entire society. The way in which society develops also reflects in the behaviour of children and adolescents, either in the negative or in the positive sense of the word. The level of aggression in pupils was examined by the BPAQ aggression questionnaire.

The values of individual components of aggression in the 1st year of the research are shown in Table 2. 342 respondents participated in the research, out of them (nb) 174 boys and (ng) 168 girls.

Table 2. Indicators of Values in Aggression for the 1st Year of Research

Aggression type	Min	Max	Boys %	Girls %	\bar{x}	\tilde{x}	\check{x}	σ
Physical aggression	9	45	22	17.9	20.3	19	16	7.1
Verbal aggression	5	25	15.2	15.8	15	15	15	3.8
Anger	7	35	21.8	23.3	18.9	18	22	4.8
Hostility	8	40	16.4	18.5	18.5	18	18	5.9

The percentages in the table show the obtained average score in individual aggression types per gender. Considering the standardized indicators, both genders showed an increased level in the values of *verbal aggression* (nb = 15.2%; nd = 15.8%; \bar{x} = 15; \tilde{x} = 15; \check{x} = 15; σ = 3.8); *anger* (nb = 21.8%; ng = 23.3%; \bar{x} = 18.9; \tilde{x} = 18; \check{x} = 22; = 4.8) and *hostility* (nb = 16.4%; ng = 18.5%; \bar{x} = 18.5; \tilde{x} = 18; \check{x} = 18; σ = 5.9).

The girls’ physical and verbal aggression tended to be expressed by anger and hostility. In comparison with other research (cf. the research above), the boys’ physical aggression was lower. Both genders showed an increased level of verbal aggression, anger and hostility. The mentioned aggression types and variables can be comparable to psychological aggression manifested as ridicule, intrigue, refusal of communication and friendship, and humiliation. The obtained values in aggression became the basis for the implementation and verification of the data in the following school year 2009/2010.

In the second year, the research was repeated using the research tool, the BPAQ questionnaire, on a sample of elementary school pupils of the 8th and 9th grades in the total number (n) of 446 pupils, out of whom (nb) 233 were boys and (ng) 213 were girls.

The purpose of the second measurement was to find out the level of aggressive behaviour in pupils as indicated in the BPAQ questionnaire. The first step was to find out the level of aggression. Singular data are presented in Table 3.

Table 3. Indicators of Values of Aggression for the 2nd Year of Research

Aggression type	Min	Max	Boys %	Girls %	\bar{x}	\tilde{x}	\check{x}	σ
Physical aggression	9	45	22.4	18.9	20.8	20	15	7.4
Verbal aggression	5	25	13.6	13.6	13.5	13	11	3.8
Anger	7	35	16.9	18.2	17.5	17	15	5
Hostility	8	40	21	21.9	21.4	21	18	6.1

In the second year the increased level re-appeared in the values of *verbal aggression* (nb=13.6%; ng=13.6%; \bar{x} = 13.5; \tilde{x} =11; \check{x} =15; σ = 3.8); *anger* (nb = 16.9%; ng=18.2%; \bar{x} =17.5; \tilde{x} =17; \check{x} =15; σ =5) and *hostility* (nb=21%; ng=21.9%; \bar{x} =21.4; \tilde{x} = 21; \check{x} = 18; σ = 6.1).

As for the gender, it showed again that the physical aggression of girls grows. The girls’ physical aggression (53.7%) represented a significant statistical increase when compared with the boys’ aggression (46.3%).

According to the research tool, verbal aggression manifests itself in forms of quarrels and verbal offences against opinions of others and against the conduct of others. When comparing the data per gender, a statistically significant increase was recorded in the verbal aggression of the girls. In connection with the previous findings, an increase may be observed in the physical (53.7%) and verbal (57.7%) aggression of the girls when compared with the boys (cf. physical aggression 46.3% and verbal aggression 42.3%).

Anger manifests itself in the form of irritation, annoyance, affective attacks and absence of control over emotions. The increased level of anger and annoyance showed in 48.3% of the boys and 51.7% of the girls.

In the girls, hostility showed in a half of the respondents (49.6%) as verbal and physical manifestations, i.e. slander, vilification, defamation, grudge and malice. In the boys, hostile behaviour showed in 50.4% of the respondents. Hostility may increase also by watching violent programmes in the media, playing aggressive computer and interactive games, as well as watching sports matches. Education psychology professionals confirm an increase in girls' aggression.

The relationship between the two independent samples was examined by the Wilcoxon Two-Sample Test. For the Wilcoxon Two-Sample Test, the value of the test criterion z and the value p representing the probability of errors were obtained. $p = 0.05$ was chosen as the level of statistical significance. The purpose of the statistical tests was to verify the level of pupils' aggressive behaviour.

Table 4. Differences in Aggression by BPAQ

Group 1 vs. Group 2	Verbal Aggression	Physical Aggression	Hostility	Anger	Total
Z	6.04638	0.885	6.100	-4.01	0.146
P	p=0.000	p=0.376	p=0.000	p=0.00057	p=0.8598

In analysis of physical aggression, the test criterion value $z = 0.885$ and the probability value $p = 0.376$ were obtained. Since $p = 0.376 > 0.05$, the research did not confirm an increase in the level of physical aggression in pupils within two years. The probability values ($p = 0.000$ for verbal aggression; $p = 0.00057$ for anger; and $p = 0.000$ for hostility) were lower than the chosen level of statistical significance $p=0.05$. The research done within two years on two independent research samples confirmed the indicator of the increased level of verbal aggression ($p = 0.000 < 0.05$), anger ($p = 0.00057 < 0.05$) and hostility ($p = 0.000 < 0.05$) in the pupils of the 8th and 9th grades of elementary schools.

In summary, the same indicator of values obtained from both years of research was proved in individual components of aggression (verbal aggression, hostility, anger). The results obtained by means of the Wilcoxon Two-Sample Test indicated a statistical, identical indicator of verbal aggression, hostility, and anger in the pupils during the two years of research. The variables, age and gender, in relation to the factors of aggression partially reflect conclusions drawn by other authors.

Cyber-Bullying Tolerance Level

The research conducted in the school year 2009/2010 pointed out, in addition to the verification of the pupils' aggression, to an increase in the cyber-bullying tolerance. Almost a half of the boys (46.2%) and a third of the girls (33.8%) showed an increased level of cyber-bullying tolerance. The obtained data of the cyber-bullying tolerance were matched and compared with the values of aggressive behaviour. Within the research, the statistical connection and its degree among the variables (total score of an individual's aggression and cyber-bullying tolerance level) was found. Substituting the obtained data to the relation:

$$R = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)}$$

the value of the rank correlation coefficient $R \hat{=} 0.6255$ was obtained. Interpretation of the coefficient $0.5 \leq |0.6255| < 0.7$ expressed a significant degree of linkage between the variables (aggressive behaviour and cyber-bullying tolerance). The value of the coefficient shows that cyber-bullying tolerance grows with the increase in the values of aggression.

3.1. Discussion and Recommendations

At present, there is evidence of various manifestations of verbal aggression, hostility and defiance among pupils. By comparing the standardized data with the data obtained in the Slovak population of students aged 14 and 16, an identical range of minimum and maximum values of aggression forms and ways was found. In boys, a lower score of physical aggression, on average, was proved and confirmed (gender differences in verbal and physical aggression had been recorded by more authors). In spite of the fact that educational practice draws attention to boys' physical aggression, the research pointed out to an increase in physical aggression in the girls when compared to the boys. One of the reasons for this indicator is

an undeveloped communication competence, which may lead to physical attacks. The increase in verbalized attacks in boys may be caused by recognition of the success of relational aggression. The relational aggression stands out in relation to both genders, as found by the research. The fact is a suggestion for further theoretical study, methodology and educational practice. In connection with the above premises, the following come to the fore:

- standardisation of the BPAQ questionnaire for the Slovak pupil population as a research tool aimed at measuring factors of aggression;
- development and standardisation of a research tool aimed at mapping cyber-bullying in children and adolescents in the conditions of the Slovak Republic.

Conclusion

Aggressive acts may influence human psyche, self-confidence, the quality of intimate relations, etc. The purpose of the research was to find out and verify the level of aggressive behaviour in pupils in the west Slovakia region by the factors of aggression. The findings of growing aggression in children play a key role in the search for and elimination of causes and consequences. The present study is a starting point for mapping aggressive behaviour including cyber-aggression (cyber-bullying) in the conditions of the Slovak Republic on the basis of standardisation of the available research tools and/or development of new ones.

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