

Cyberbullying and interpersonal aggression as a public health problem – for the consideration of educators and tutors

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Abstract

Apart from real violence, virtual violence (also known as cyberbullying) has recently appeared. This phenomenon is a derivative of the remarkable technological progress and easier access to the Internet especially for children and young people. The aim of this paper is the authors' reflection on the issue of cyberbullying and interpersonal aggression, based on the example of Polish experience.

Cyberbullying is the act of harassing, bullying or terrorising a weaker person. Electronic bullying at school is behaviour of a student or a group of students to exclude the victim from the group. It is long-lasting and negative. Cyberbullying is such a common form of violence that it functions in legislation and is considered as stalking in a new form. Both perpetrators and victims of cyberbullying are most often children and teenagers attending school (they are the most active groups in the virtual space).

Although the phenomenon of interpersonal aggression has been inscribed in the history of mankind since time began, the infamous popularity of its intensification is rightly associated with the negative effects of watching television by children. The effects are much more extensive and go beyond the deterioration of mental health (increasing aggressiveness and the expansion of brutality in various aspects as well as rudeness, insolence, intolerance, etc.), as they affect somatic health (e.g. vision defects, degeneration of the spine and musculoskeletal system) and social health (especially limiting interpersonal relations with peers and in a family life, reducing the positive reception and expression of feelings, etc.).

Therefore, from the point of view of prophylaxis and therapy, detailed methods, forms and means of innovative agonology are attention-grabbing. Although to some extent they are known to teachers of various specialties, psychologists, physiotherapists, modern adaptations combined with unique solutions make this system not only an attractive pedagogical and educational challenge, but also effective and safe, e.g.: art therapy, fun forms of martial arts, honourable self-defence, martial arts bibliotherapy, music therapy with martial arts.

Keywords: diagnosing aggressiveness • innovative agonology • fun forms of martial arts • mental health • honourable self-defence • music therapy with martial arts • non-apparatus test • violence

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Aggression (in psychology) – is deliberate behaviour by the perpetrator intended to either hurt the opponent, harm or distress him/her in any other way, cause pain (regardless of whether this aim is achieved), or destroy things [44, 22].

Aggression (in praxeology) – is to initiate destructive fight or move in a verbal dispute from material arguments to those causing distress to the opponent [45].

Aggressiveness – a human characteristic manifesting itself in inclinations to hurt others, to destructive behaviour.

Aggressive = virulent, truculent, attacking [45].

Violence (in the praxeological sense) – physical pressure (physical force) or the application of chemical, electrical stimuli, etc., which causes the subject of action to be flung into a situation undesirable by him and becomes the object of someone's action [45].

Neo-gladiator – a person who trains mix martial arts (MMA) and similar forms of hand-to-hand fighting that do not meet the definition of sport according to the Olympic Charter [40].

INTRODUCTION

The topics of violence and aggression, both directed against children and adolescents, or inflicted by the mentioned groups, has retained its relevance today. Furthermore, due to advances in technology, it is taking on a variety of increasingly sophisticated forms. Direct aggression and violence are experienced by young people whether at school (during breaks between lessons, on the school playground, in the locker room, in the restroom and other places), or outside of school. Nowadays, virtual violence (the so-called cyberbullying) has emerged alongside real violence. This phenomenon has been brought about by technological advances and increasingly easy access to the Internet, available to children and young people in particular. Unfortunately, it is those social groups that are most at risk of cyberbullying which is very often caused by their peers.

Many researchers are beginning to take interest in what happens in cyberspace. The psychological and pedagogical research and observations that have been carried out so far have confirmed that frequent contact with violence and aggression leads to the adoption of such behaviour [1]. Children, growing up in environments where violence is inflicted, recognize this as a completely natural pattern of life, often replicating these behaviours. Other studies demonstrate that aggressive behaviour depends on genetic and environmental factors, where learned aggressive behaviour plays a significant role, whereas environmental influences on biological aggressive behaviour can weaken or reinforce it [2].

Cyberbullying is defined as behaviour that involves harassing, bullying, or terrorizing a vulnerable person [3]. On the other hand, electronic bullying at school is an action done by a student or a group of students that aims to exclude the victim from the group. It is usually continuous and negative in nature.

In a nutshell, cyberbullying can be defined as a phenomenon occurring on the Internet and via cell phones or smartphones [4]. This phenomenon practiced among schoolchildren and adolescents has been recorded for several years already. It can be manifested in two ways: 1) by viewing cyberbullying through photos, video games, videos or just the written content; 2) by participating in the real violence-based behaviour in various roles: observer, perpetrator, participant, or victim [5].

Witnesses to cyberbullying play different roles, at the same time reflecting a different combination of dimensions of supporting or harming activities in this type of violence as well as their intentions. The following four types of witness behaviour can be distinguished: aggressor's assistants (active participants in the acts of violence); reinforcers of the persecutor (those who motivate the perpetrator of violence by their own actions stimulating the former to continue the harassment, however, they do not directly participate in the actions that harm the victim; outsiders (the so-called passive witnesses, who do not take sides); defenders of the victim (those who take actions to help the victim of cyberbullying).

Being an extensively a common form of violence, cyberbullying has established itself in legislation, where it is known as persecution of others in a new form [6]. Both perpetrators and victims of cyberbullying are most often children and adolescents attending school, constituting a very active group in the virtual space. Cyberbullying is spread in cyberspace by modern media and technologies, including discussion forums, websites, blogs, instant messaging, emails, text messages.

The aim of this paper is the authors' reflection on the issue of cyberbullying and interpersonal aggression, based on the example of Polish experience.

The scale of the problem in Poland and the dilemmas at the intersection of semantics and psychology of emotions

The dark side of the virtual world, or cyberbullying, is being practiced by means of constantly developing new technologies with the purpose to humiliate, intimidate, torment, and embarrass another person, who then becomes a victim of cyberbullying. With the advances in technology and digital communication, cyberbullying is undergoing changes as well, becoming more sophisticated. Victims of cyberbullying are attacked at little cost and with little effort. This is related to an easy access to telephones: there is no difficulty or problem to send a threatening message from a smartphone or use specially created websites.

According to the "Nobody's Children" Foundation data (an entity that has been operating in Poland since 1999; it was established on the initiative of Alina Margolis-Edelman and deals with the safety of children and adolescents on the Internet), cyberbullying has particularly adverse effect on children and adolescents, affecting more than

half of young people who use electronic media in Poland [7]. The activities that define cyberbullying are the following: pretending to be someone else online, disseminating or spreading the data (photos, texts or videos) in cyberspace that may ridicule or offend someone; taking someone's picture without their permission or recording videos without someone's awareness; using the telephone/smartphone or the Internet to challenge, humiliate or scare someone [8].

The perpetrators of cyberbullying are often schoolchildren and teenagers, whereas the victims of cybercriminals can be adults, who often appear in public (politicians, actors, businesspeople). The phenomenon of cyberbullying takes place through groups of mass modes of communication, including email, forums, instant messaging, social networks (e.g., Facebook, Instagram, Tik Tok), newsgroups, blogs, chat rooms, websites from which anonymously text messages can be sent, media messages, websites that allow posting videos (e.g., YouTube, Upload). The inflictors of cyberbullying are usually rather smart, skilled at using electronic media and computer programs, especially those designed to alter photos and produce amateur videos.

The discussed form of electronic violence involves victims being harassed at any time of the day or night, often in their own home. „Violence in the media” is defined as all non-accidental actions that undermines the personal freedom of an individual, using manipulation of images, sound and other channels of information or those that contribute to psychological, physical, and moral harm to a person, violating the social rules of interaction [9].

There are a lot of those who are totally unaware of the existence of cyberbullying, and some have never heard of the term, although the concept and the phenomenon are global in scope.

The term “cyberbullying” is used interchangeably as electronic or internet violence. Another name for cyberbullying is “social terror with the use of technology”. Cyberbullying is defined as “emotional savagery” or “striking at the weakest point of the psyche.” The perpetrator of cyberbullying may communicate with the victim through email by assuming different identities and continuously changing email addresses [10].

It turns out that defining cyberbullying can be troublesome because of the ambiguity of online violence. It seems reasonable to ask a question

whether a strong and sharp exchange of opinions on the web should be qualified as electronic violence or simply a written argument. Whether online teasing counts as cyberbullying depends on one's point of view. For example, very often if offensive messages reach a person, they might consider such action as cyberbullying, while if they themselves direct similar content to another person, they will qualify it as simply an argument or a sharp exchange of views [10].

Violence, aggression, and other threats in the media and online

“Television can enrich family life. It can bring family members closer together, strengthen their solidarity with other families and with society in general. It can expand not only their common knowledge, but also their religious knowledge, enabling them to hear the word of God, strengthen their religious identity and shape their moral and spiritual life. At the same time, television can harm family life: by promoting false values and patterns of behaviour; by disseminating pornography and images of brutal violence; by instilling moral relativism and religious scepticism; by presenting current events and problems in a deliberately distorted manner; by aggressive advertisement appealing to the lowest instincts; and finally by extolling false visions of life that oppose the principle of mutual respect and hinder the establishment of justice and peace” ([11], the citation translated by authors from Polish). This is what John Paul II said in his Message on the XXVIII World Day of Social Media in 1994.

Virtual space is a combination of media and a computer. What exists in the media is recorded using numerical data that only a computer can understand. Therefore, what we see on TV screens or computer monitor (moving images, graphics, sound, space, shapes, or texts) is nothing but computer data with which calculations are made [12].

Violence is the most responsible player for this type of behaviour in the media world of today. Mass media have changed, from the printed word to the new possibilities of attractive, moving and noisy communication, provided by sophisticated technology. Content media publishers use a wide range of means promoting close contact with the reality shown. The idea is to evoke in the viewer an impression suggesting participation in the events presented. The techniques that reduce the temporal-spatial distance include direct returns to viewers, close-ups, intense glances into the camera lens

by journalists, as well as live coverage or streaming. Very often, the media in this way just draw their viewers into performances with violence as a central theme. It appears that the more cruelty is shown, the greater the area of aspects that can be assimilated by the viewer, and consequently the more intense the need and demand for violence. In this way, the media weaken the viewer's sensitivity to violence and aggression [13]. The virtual world is attractive to the users because they can create it themselves. Anybody in cyberspace can create their own MATRIX, possessing a very high sense of control over what happens, since by means of information technology the events that unfold can be easily managed [14].

These media and modern civilization transformations date back to the second half of the XX century. The idea of the world around us is created by the media, they inform, as well as educate and entertain. They make viewers experience the same thing in the shape imposed by the media. This shape, however, depends on the income – the profit gained from the aired advertisements, not from paid subscriptions or government budget subsidies. A viewer has become a commodity sold by the broadcaster to an advertising company. Advertising companies pay television and radio broadcasters so that it is their commercials that appear during the hours when there is a peak of viewership [13].

Mental and social implications

Therefore, the social implications of the media expansion (we deliberately do not use the word “development” guided by the language of innovative agonology, the science that ascribes only a positive connotation to this term) are the messages conveyed by advertising, which in colloquial language can be put as follows: the path to individual happiness is to buy services and goods; the act of buying is capable of moving us into socially superior categories, of pulling us out of the crowd, distinguishing us, leading to practically unattainable goals; the acquisition of goods is practically an endless activity: it is impossible to reach the saturation stage, that's why it must be repeated constantly [13].

The meticulous news reports that flow from the electronic media disseminate the news about disasters and traumatic events, e.g., hurricanes, bomb explosions, terrorist attacks, school shootings and assaults, murders, paedophilic pimping via the Internet, various types of Internet scams.

Such messages attract the attention of the recipients in a morbid way – the belief is spread that everything around us is evil, mere misery and terror. For news editors, who base their activities on such business criteria, every crisis increases the program's viewership. Therefore, every evening or twenty-four hours a day, sensational information full of tragedies is transmitted as an interesting material for any report [15].

Figuratively speaking, the mental and social effects can be summed up in the following words: today's world is structured in such a way that we can't imagine life without television, radio, computers, and the Internet; very often a TV set is treated as the most important piece of furniture in one's home; it is television that the lives of many families are turning around; parents lack the time for their children, for conversation and playing with them, being too absorbed in their professional activity, as a result, very often parents pay no attention at all to either what their child watches on television or what information the child gets from the Internet. To conclude, television has a significant impact on children and adolescents, as parents (or legal guardians) do not intervene in the frequency of a child's television viewing or what content he or she receives [16].

TV is a very simple device to use, so children have no problem with handling it. It is not necessary to leave the house to watch TV. It also does not require any physical activity. The content is easy to understand. This causes passivity and mental laziness, reducing the child's capacity to think abstractly. Regardless of the intentions that the creator of the content had, television programs always have an educational effect on the viewer, especially if it is a young person who hasn't yet developed a system of values and attitudes. The age of the audience is decreasing, children at the age of two or three are already passionate and dedicated TV viewers. Television is an attraction for children, which can capture their time, as well as disorganize their lives and intensify their cravings, especially the desire for possessions [16].

Although being unable to choose age-appropriate and developmentally adequate content on their own, children are highly susceptible to media influence. In other words, children are incapable of valuing and evaluating the content of the television program they watch. Instead, the attractiveness of mass media not only “takes up” a child's time, but even enslaves them by limiting their

physical and social interaction activities, often preventing from being engaged in more interesting and more challenging activities offered by competent entities of the social environment [16].

The media influence children and adolescents through:

- **the time dedicated to them:** the time a child spends in front of a screen is the time that could have been spent on playing, reading, meeting relatives or peers, talking to parents, to name but a few;
- **the mode of transmission:** watching and listening to television programs requires no physical activity and little mental effort, it is one-sided information traffic, with the messages being increasingly brutal, since the aggression and violence shown in the media is radically more intense than in real life. This results in desensitization, indifference or habituation of young society to the aggression seen on the screen and its translation to real life;
- **the quality of content:** what television offers is saturated with violence, aggression, destruction, brutality [16].

The most important factors determining the extent to which television has an impact on children and adolescents include age and gender, past experiences, the level of personality traits formation, values and attitudes [16]. Although television offers many interesting programs that can stimulate the development of the skills or interests of children and adolescents, however, they are not attractive enough to compensate for the negative impact. The manifestations of such negative impact of television on the process of raising a child in the family are the following: destabilization of family life, destruction of daily life organization, information noise, negative influence on both physical and mental health, imitation of a variety of bad behaviours, the weakening of family ties, replacement of parents in fulfilling some of their care and upbringing functions [11].

Among the negative effects of children's television viewing on physical health Bednarek [16] singles out the defects in vision and spine curvature. Within moral and social-emotional development, the following side effects are mentioned: high probability of adopting socially unacceptable behaviour by some viewers (violence, aggression, brutality,

rudeness, insolence, intolerance, as well as vulgar sexual behaviour which can lead to demoralization or deprivation of the viewer), exaggerated exposure and maintenance of certain stereotypes of gender roles in the viewer, weakening of the viewer's ability to perceive and show feelings, as well as reducing the degree of sensitivity to suffering in relation to others, the possibility of bad influence and restriction of interpersonal contacts with peers or within the family (everyday life) [17].

Internet and computer – between benefits and threats

In addition to television, children are also very keen to use the easily accessible computer and the Internet. On the Internet you can find literally anything with little effort (just sit down and click). Despite the many advantages of the Internet, children and teenagers are exposed to many pitfalls and dangers from people who use this medium to harm children in particular. While the Internet and a computer allow a child to play, learn and communicate with others, they are also potential tools for many hazards. Paradoxically, the Internet and computer themselves are not a social problem, but it is their users that are the culprits to be blamed. Internet perils are posed by people who may seek a chance to meet a child in the real world.

Another Internet menace has to do with children's easy access to websites with the information that is inappropriate for many reasons (e.g., offering smuggled items or encouraging and spreading illegal activities, as well as threatening the privacy of an Internet user). Much of the children's attention is focused on sites that contain pornographic and sexual content. Children have access to Internet resources that advertise cigarettes or alcohol, those that encourage drug taking or spread fake information, violence, or hatred. Some sites allow the purchase of drugs, weapons, poisons, alcohol, legal highs, etc. Children can gamble on the Internet [18, 19]. Still other sites collect data about children, as well as their families. The victims of fraudulent interactive marketing strategies are children and adolescents surfing the web.

Children themselves can become responsible for the danger in cyberspace, very often unknowingly providing important and confidential information about the family, share credit card numbers, pin codes, passwords, doing online shopping for which the parents will have to pay. Children often can violate copyrights or even commit computer crimes by deleting very important files.

Among the other pitfalls of careless computer use are either a virus attack that destroys everything or a hacker breaking in and disrupting the operation system and its data.

Dilemmas of face-to-face conversations in the era of mass electronic communication

Nowadays, the media make mass communication available. In the early days of the Internet era, it was popular and quite common to communicate via e-mail. However, conversations via mail are asynchronous, it means they are not conducted in real time. The property of a message sent in the virtual space (the so-called cyberspace) is both the lack of information concerning the time when the addressee will receive it and then respond, as well as the lack of certainty whether the message will reach the recipient at all. This is the kind of conversation where replies are not required immediately (unlike in face-to-face contact), which has become a custom generally implied and accepted. In the situation of a face-to-face conversation, when we expect immediate responses and the interlocutor ignores us, it is considered inappropriate, embarrassing, and even insulting. In contrast, such behaviour in online communication is viewed as accepted [20].

As the Internet was improving, new technologies and forms of interpersonal communication between two people or a group of people were emerging. The beginnings of networking took place in so-called chat rooms, where conversations between people gathered in the same virtual "rooms" took place in real time. The form of such communication was very quickly mastered by teenagers. In such a chat room, anyone could appear and write freely what they thought without providing any personal data, and anonymity was ensured by pseudonyms. An adult who entered such a chat room had the opportunity to read the content of dialogues, but such incidents caused anxiety and fear among teenagers, since the messages were very often written with the use of inappropriate language (vulgar language with many swear words), sometimes rich in sexually related or stalkerish content [20].

Internet stranger – a potential hazard to children and teenagers

The most drastic threat to a child could be caused by strangers met in cyberspace. Internet-related harassment of children involves the young person's consent or desire to meet their online

interlocutor face-to-face in the real world [21]. Another way of cybercrimes is sending emails with unwanted or unwelcome information (especially advertisements). Emails can also contain messages with sexual, offensive content, camouflaged scams, causing bullying or harassment of victims. Such content can be sent by people who hide their identities and pretend to be someone else (as a result of the possibility of online anonymity) [20].

The threats that await children and young people of school age from the Internet are reversible. Children can create them for others, but they also can be victims of pressure from others. Among the most common are the following perils:

- information full of inappropriate content (hatred, violence, exaggerated and fake information, intolerance, bigotry, pornography, various types of frauds);
- effortless information access, often resulting in the possibility to buy illegal or threat causing items, or the information with malicious instructions following which can lead to disastrous effects (e.g., how to build a bomb, buy weapons, alcohol, legal highs, poisons, drugs, how to gamble, smuggle, to name but a few);
- being disturbed or seduced by vulgar people (even by peers) who often insult or threaten, as well as hack into computers and spread viruses;
- becoming an easy prey for those dealing with online trading of personal data and obtaining sensitive information (by filling out forms, participating in contests, etc.);
- becoming a victim of seduction by cyber attackers who seek face-to-face sexually related meetings;
- becoming a victim of online shopping frauds and being exploited by disclosing important information such as entering a credit card number, pin codes or passwords [20].

Computer games – global education for aggression

Currently, children spend a lot of time in front of the computer, being fascinated by games that are saturated with violence and aggression. Computer games contain 95% of aggression (multiple killings while playing), with this

category being the most popular among children aged 7 to 14. Children start their adventure with violence rich games very early, just at the stage when their attitudes and moral principles are shaped. Therefore, each game has a tremendous impact on the developmental processes of this age group children [16].

The game requiring killing involves a battle in which a child is the aggressor and must fight the opponents, those being people, animals, or fictional characters. Different types of weapons, usually at the choice of a player, are used for fighting. Such games expose children to experiencing additional stimuli in the form of screams, groans, appropriate music, the sound of shooting and explosions. The games provide additional options that allow players to see up close the killed opponent. Additionally, in some games it is possible to step on the victims, look into their eyes. As a result, children are used to violence in such games, to the fact that death is painless or that a person can have several lives. The games teach a player that it's possible to hurt someone with impunity, take someone's life and suffer no legal consequences for such acts. The only punishment is a reward in the form of an extra life or passing to the next level of the game.

Playing a game with violent and brutal content, a young person is the aggressor, where the aggression is fictional and formally has nothing in common with reality [22]. However, the game familiarizes the players to the violence and aggression they use. Admittedly, children aged 7 to 14 years old may see scenes of violence and rape on television multiple times per week, however, during a computer game they have an opportunity to commit murders, although simulated, but repeatedly. Therefore, a player is no longer just an observer, but becomes the aggressor and executor of the murder in the virtual world. There is no doubt that this type of education for aggression generally has negative consequences in the future, as it affects the formation of a person's personality, behaviour, and actions later in adult life [16].

Accumulation of other pathologies

Neo-Nazi statements, pornography and advertisements for prostitutes are also available on the Internet. The information on how to derail a train using readily available tools and everyday objects can also be easily found in the net. Some sites encourage the visitors to join the ranks of

a satanic group, deny the existence of gas chambers and preach the principle of "racial purity." On such sites, it is possible to encounter the praise of necrophilia, cannibalism, black masses, etc. On the Internet, one can find horrifying pictures, victims of murder, rape, suicide, disease or deformity, wars, and many other evils, which would rather not be available for viewing by children and teenagers. Most of the evil content information that children and young people search for on the Internet is about sex. In addition, the web offers sites where believers and their religious feelings are offended. Virtual reality is overwhelmed by violence and terror with widespread access. Such a combination of information for young people and children is simply catastrophic in both present and future consequences, which will determine a person's adulthood, causing problems for both a specific individual and society.

Spreading hatred, intolerance, aggression, and violence on the Internet is available to anyone who wants to do it anonymously and with impunity. The virtual space provides such an opportunity. The Internet removes all obstacles, such as gender, age, skin colour, religion, and is a free space for spreading one's own ideas. It encompasses the whole world, knows no boundaries and borders, and reaches anywhere and anyone who visits it. Its most passionate users are young people [20].

In addition to sites with sexual content, web-pages that contain bloody scenes (e.g., amputated body parts, people killing animals or mutilated bodies after high-profile disasters, etc.) are of great interest to children and teenagers. Many adults would consider these images as nightmarish, while for teenagers they represent a kind of a horror movie [20].

Insults, harassment, and bullying are very common phenomena on the Internet. The perpetrators are often peers of the bullied person. Insulting occurs when people communicate unpleasant, offensive, vulgar, untrue, or even intentionally provocative information to the public and publish it online. These can be persons seeking the possibility to quarrel with others or simply want to set confrontation between different people or groups. For some, mere insult of a child or another person is not enough. Together with insults, they send all sorts of threats, even deadly ones, and perform the acts of hacking or spreading viruses [20].

Addiction to television, computers, the Internet

Children, adolescents, and adults fall into addiction, associated with watching television or sitting for hours in front of a computer screen. Addiction or in other words craving for something is described by Zimbardo [22] as a physical and psychological dependence, where such behaviour becomes a compulsion, and the person no longer has control over it or is incapable of managing it on their own. Internet addiction is called **Internet holism or network holism**.

It is generally known that network addiction (network holism) is an addiction to an activity similar to gambling or shopaholism. Internet addiction is defined as a set of diverse phenomena, occurring at the biochemical, physiological, psychological and external behaviour levels [16].

The leading symptom of this addiction is an uncontrollable (often felt as irresistible) craving to take a particular psychoactive drug or perform certain activities. Addiction can be diagnosed when at least three of the six symptoms arise simultaneously: 1) a craving or a feeling of some kind of compulsion to take substances or perform certain activities occurring at night; 2) a problem with self-control, which concerns refraining from taking the drug or doing certain activities; 3) the so-called “abstraction syndrome”, i.e. feeling bad, related to the lack of access to a computer and the Internet; 4) the emergence of tolerance, i.e. the situation where it becomes necessary to take all the time higher doses of substances or to do certain activities more often for longer periods of time to reach the desired effect; 5) fading away of interests and pleasures enjoyed before the addiction developed; 6) efforts to find the resources and funds enabling the addicted persons of providing themselves with the substances or the possibility to do certain activities, despite the evidence of their negative and destructive effects on health and social relations (drug addicts, despite their devastated bodies and often no financial resources, continue to look for ways to obtain drugs).

A person addicted to the Internet stays in front of a computer screen for most of their time. Often this time is taken away from other daily activities such as sleeping or eating. When asked to come over for dinner, they usually reply that they will finish the activity in a moment, which is obviously misleading. Computer addicts neglect their

professional (school) and family responsibilities. A computer seems more important than the time spent with their own family. Daily duties become neglected because of addiction as well. Such people care little about their own hygiene, gradually deteriorating their health (their vision slowly worsens, they suffer from back and shoulder pain, sleep disorders). Internet addiction inflicts the psychological, social, and physiological damaging effects [16].

Five subtypes of Internet addiction are commonly distinguished: 1) Internet erotomania; 2) Internet sociomania; 3) the net addiction; 4) information overload; 5) computer addiction [16].

Internet addiction proceeds in three phases: **the phase of involvement**, with the signs of relaxation, pleasure, fascination, interest, feeling calm; **the phase of substitution** is associated with the need for permanent contact with/access to the Internet, a sense of life balance, the mind constantly occupied by the Internet; **the phase of escape** where an addict experiences a total escape from reality into the virtual world, constantly deepening the dependence on the Internet. The third phase requires inevitable treatment [16, 23].

Defence perspectives based on scientific methods

The synthetically discussed above dangers of cyberbullying and the effects on all health aspects (somatic, mental and social) are grounded on the certain scientific achievements and the latest technological applications. The expectations for rational ways, methods and defence mechanisms indicated by science, both against cyberbullying as well as all kinds of violence and interpersonal aggression seem rather naïve and unrealistic or should be regarded in terms of science fiction. Such a pessimistic view is justified by the scientific facts presented in parallel with the expansion of the phenomena, defining the content of this paper.

Attention has been drawn to “innovative agonology,” admittedly promoted in the global science space only since 2016 [24], although with the origins of this applied science dating back to 1938, when Tadeusz Kotarbinski [25] published agonology, or the general theory of struggle. Jaroslaw Rudniański (Kotarbinski’s student) published the theory of non-armed struggle [26] in 1983, when martial law was underway in Poland, and six years later supplemented this edition with the theory of

compromise [27]. Two years later, Roman Kalina (Rudniański's student) wrote a monograph dedicated to counteracting aggression through the competent use of sports, published by the Polish Society of Mental Hygiene [28], where the author formulates the theory of defensive struggle along with the theoretical basis for cognitive-behavioural prevention (prophylactics) and aggressiveness therapy. During an 8-month experiment with military cadets, he verified the high effectiveness of this method, the main elements of which were judo and self-defence exercises, fun forms of martial arts, relaxation and concentration exercises, intentional verbal action. The most convincing finding of this experiment seems the claim of positive long-term effects from the method used on the reduced aggressiveness of military cadets [29].

The described above method did not attract the interest of either the media or those responsible for the quality of public health and education at each level, despite the fact that the author together with a large team of PhD students and educators have given many conference presentations, introduced the elements of the method implementation into the curricula of physical education and physiotherapy students, detective schools, military and police academies, and published many original and methodological papers. It's worth mentioning that safe fall and self-defence specific programs dedicated to people regardless of age, gender, degree of disability, as well as fun forms of martial arts as tools for diagnosing and reducing aggressiveness have proven effective [30-38].

Therefore, synthesizing the scientific arguments presented in this work admittedly exposes the human nature completely. Interpersonal communication tools from micro to macro scales based on state-of-the-art technologies have significantly enhanced that part of the human nature, which Kalina [39] calls "toxic syndrome of power". Researchers referring to the methodology of innovative agonology rightly point out that neo-gladiatorship is camouflaged under the name of mixed martial arts (MMA) [39, 40]. Further use of the terms such as "martial arts bibliotherapy", "fun forms of martial arts", "music and martial arts" [41-43] etc. in academic discourse and in the public space may prove counterproductive. The reason is simple. Not only do contemporary electronic media fail to provide symmetry between reliably informing the public about the

pathology of MMA and the positive health applications of martial arts, but it is apparently the most effective promoter of this pathology (thus being the biggest perpetrator of cyberbullying), the example of ignoring arguments based on empirical evidence that exposes this pathology. In such a situation, it is possible that the promoters of neo-gladiatorship (in fact, the leaders of cyberbullying) will reach for these terms with the element of "martial arts" to manipulate the achievements of science in order to justify the "indispensability of bloody live fights" as a constituent part of the culture of the Internet age.

CONCLUSIONS

Currently, the Internet is the most expansive and crowded virtual space. There we can find much essential and advantageous information, if it meets the standards of integrity and ethics (politics, economy, education, social interaction, medicine, and many others). Unfortunately, this information is subject to many distortions due to the device we use, or because of ignorance or violation of the standards mentioned above (cyber addiction, cyber aggression, human stigmatization, hacking, hawking and other pathologies).

As virtual life becomes more commonplace, the boundaries between what is real and what is fiction seem to be blurring. It is the Internet that is currently the most enormous medium, which is constantly consolidating its leading position among the electronic information media. Being used by virtually everyone, the Internet finds its implementation directly or indirectly for work, study, play and, above all, for daily activities and routines. Unfortunately, over time it is likely to face the possibility of transforming work into work holism, learning into another kind of addiction or depression, and fun into aggression.

Therefore, from the point of view of prevention and therapy, detailed methods, forms and means of innovative agonology are attention-grabbing. Although to some extent they are known to teachers of various fields, psychologists, physiotherapists, modern adaptations combined with unique solutions make this system not only an attractive pedagogical and educational challenge, but also effective and safe strategies, e.g., art therapy, fun forms of martial arts, honourable self-defence, martial arts bibliotherapy, music therapy with martial arts.

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