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Threats to people with disabilities in virtual and environmental spaces – a comparison of behaviors[1]

Abstract

This paper will outline the major mental and physical health risks associated with the Internet and environmental risks affecting people with physical disabilities. Modern humans strongly emphasize their need for security. A clean environment is important for human health and well-being. Human security in cyberspace is also important. The importance of security for citizens using information and communication technology systems is increasing every day. The article compares key environmental and cyberspace threats.

Key words: threats, security, environmental threats, cyberspace threats

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Introduction

The concept of hazards to humans and human security[1] are quite common in the space of their life, work, and education. In their definitional view, the element that matters is health, sense of security, or security culture.

Mental health and human well-being are closely linked to the state of the environment as well as cyberspace. A good quality environment caters to the basic needs of clean air and water, fertile land for food production, and energy and materials for production. At the same time, the environment is a significant pathway for human exposure to air pollution, noise, and hazardous chemicals.

The dynamic development of information and communication technologies has created a new field of activity – cyberspace. This is one of the most significant changes in the security environment, bringing entirely new threats. A large part of these are social threats as they are culturally based, for example, the construction of virtual identities and interactions in social networks. The elderly and people with physical disabilities are also at risk.

On the other hand, people with disabilities, thanks to the availability of new communication and information technologies, can satisfy the need for contact with another person and reduce the feeling of loneliness. Access to the web and services such as medical, social, legal, and vocational counseling, for example, gives people with disabilities a sense of independence and belonging to a virtual community and often helps to alleviate psychological problems associated with disability.

Typically, the elderly and people with disabilities are much less proficient in using new technologies. This is a serious problem leading very often to the so-called digital exclusion in real life and means the inability to participate in social life. In the context of the virtual world, this can mean exclusion from games, chat rooms, platforms, etc.

The No. of disability as a social phenomenon often goes unnoticed by some communication researchers or journalists creating new media. A serious challenge

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1 See: M. Czuryk, K. Drabik, A. Pieczywok, *Bezpieczeństwo człowieka w procesie zmian społecznych, kulturowych i edukacyjnych*, Olsztyn 2018, p. 7; J. Gierszewski, A. Pieczywok, *Społeczny wymiar bezpieczeństwa człowieka*, Warszawa 2018; M. Karpiuk, *Ograniczenie wolności uzewnętrzniania wyznania ze względu na bezpieczeństwo państwa i porządek publiczny*, „Przegląd Prawa Wyznaniowego" 2017, vol. 9, p. 10–17; A. Pieczywok, *Działania społeczne w sferze bezpieczeństwa wewnętrznego*, Lublin 2018, p. 13; M. Karpiuk, *Prezydent Rzeczypospolitej Polskiej jako organ stojący na straży bezpieczeństwa państwa*, „Zeszyty Naukowe AON" 2009, no. 3; A. Pieczywok, *Idee bezpieczeństwa człowieka w teoriach i badaniach naukowych*, Bydgoszcz 2021, p. 20–21.

is the paucity of social connections in the lives of people with disabilities. Rather, it is characteristic of people with disabilities to spend their leisure time alone. They often live in isolation, digitally excluded by factors beyond their control, i.e. factors resulting from a past, existing, or progressing disease or disability.

The main reason cited is the lack of skills and motivation to learn new technologies and the financial means to pay for the Internet access fee. In addition, the aging of the population, limited opportunities for older people in the labor market, the breaking of interpersonal ties as a result of the increasing pace of life, and the resulting growing sense of loneliness are facts that probably no one can argue with. These cause mature and life-experienced people (illness, limited opportunities) to often feel socially excluded.

The conviction that it is particularly easy to fall prey to fraud on the Internet is shared by both non-users and web users who have no prior experience with online shopping or e-banking.

New media generate many problems that did not exist a dozen years ago, such as: addiction to media and generating unfavorable habits of using digital devices[2], downloading illegal software and lack of a proper understanding of copyright law[3], cyberbullying[4], uncontrolled contact of children with strangers online[5], pornography and pedophilia[6], low competence of significant persons to control children in the new media space[7].

This article aims to highlight some of the cyber and environmental risks affecting people with physical disabilities.

Cyberspace threats for people with physical disabilities

Modern technologies bring great promises for improving the quality of life and the ability to positively manifest oneself in the world – this applies both to people without disabilities as well as individuals with disabilities. Particular attention is paid to the potential of modern technology in shaping the

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2   J. Holtkamp, *Co ogłupia nasze dzieci?*, Kraków 2010.
3   Cf. E. Bendyk, *Bunt sieci*, Warszawa 2012.
4   Cf. R. Kowalski, S. Limber, P. Agatston, *Cyberprzemoc wśród dzieci i młodzieży*, Kraków 2011, J. Pyżalski, *Agresja elektroniczna wśród dzieci i młodzieży*, Sopot 2011.
5   Confer: A. Słysz, B. Arcimowicz, *Przyjaciele w Internecie*, Sopot 2009.
6   B. Danowski, A. Krupińska, *Dziecko w sieci*, Gliwice 2007.
7   F. Huber, C. Neuschäffer, *Rodzice offline? Jak nawiązać kontakt ze skomputeryzowanym dzieckiem*, Warszawa 2003.

personality of people with disabilities. „Numerous studies show that technical means, in addition to collecting, processing and transmitting information, can also serve to develop the intellect and emotions, to shape values"[8].

The Internet is described as the least limiting environment. On the web, people with disabilities do not have to manifest their disability, they are not judged by their appearance or the way they perform specific activities. They can keep their anonymity just like any other Internet user. However, the goal for people with disabilities is not to hide. The Internet gives the opportunity to make independent choices during free time, without a mentor. Everyone can express themselves through posts, blogs, social networking accounts, email exchanges, etc. „[...] for people with intellectual disabilities, the new media can be an opportunity to improve their life situation in many ways, for example in the sphere of making independent decisions and observing the effects of their own activity"[9].

As far as the risks of people with physical disabilities using the Internet frequently are concerned, the first, quickly noticeable danger is eyestrain caused by working on the computer for too long. This applies not only to professional work but also to the use of this medium for entertainment purposes (games, movies).

Another, more dangerous threat is the so-called Internet addiction syndrome (known as „Netholism" or „infoholism"). Symptoms of this syndrome include: alienation of the individual, disturbance of the daily rhythm, irritation or aggression, radicalization of views, suicidal plans, neglect of professional and/or family responsibilities, feeling excited at the thought of being able to use the computer, searching for illegal content, and behavior change. Reasons for this varied behavior stem from computer games (which one cannot finish), and computer erotomania.

Cyberbullying is another serious threat described as a form of bullying expressed through communication media. There are different varieties of cyberbullying such as sending aggressive messages about a specific person, repeatedly sending offensive messages to the bullied person, sending threats, discrediting a person, impersonating someone, and sending false information on their behalf.

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8   J. Bednarek, *Multimedia w kształceniu*, Warszawa 2006, p. 269.
9   P. Plichta, *Młodzi użytkownicy nowych mediów z niepełnosprawnością intelektualną – między korzyściami i zagrożeniami. Dziecko krzywdzone*, „Teoria. Badania. Praktyka" 2013, no. 12, p. 122.

Amadeusz Krause[10] sees the main dangers in the lower intellectual level of the impaired viewer. He distinguishes, first, the susceptibility to media manipulation, mainly focused on consumerism: „It is undeniable that lower intellectual potential favors uncritical reception of advertising content. In practice, however, this means that the person with an impairment can participate in consumption styles typical for a given environment, and specific to their age and cultural background; that they perceive themselves as equal to others, and that they may be perceived as such by others. In the opposite situation, we can predict a reinforcement of negative stereotypes of impairment or an increase in the social distance towards the person with an impairment"[11].

More and more often, it is difficult for disabled people to distinguish fiction from the real world. Otherwise, they identify too much with the actions, styles, dreams, and aspirations presented in the media. They lose themselves in this and begin to live in a world of fiction that has no object of reference. The media can also create anxiety among the disabled. Misunderstanding of media messages, anxiety about their quantity, and inability to select and rationally evaluate them may cause the exaggeration of threats, e.g. real threat of war, terrorism, violence.

An extreme example of the dangers is web-inspired suicides. Typing in a search term directly related to suicide takes you to blogs and websites. You will find instructions on how to commit suicide.

Online pedophilia is another threat amplified by the media. Mainly children are at risk, who are lost, lonely, have problems with their parents, and those who actively use the computer, thus increasing the likelihood of encounters with pedophiles.

Online pornography is another threat involving a wider audience. It is dangerous because of deviant behaviors that teach abnormal behaviors. The web, through easy access, creates a very wide range of sexual experiences linked to grifting cash for access.

Sexting means sending one's nude photos and videos via email. It is a kind of online exhibitionism when (especially) a young person shares their nudity with others, which of course leads to risks, as such material sooner or later becomes compromising due to random people making use of it.

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10 A. Krause, *Człowiek niepełnosprawny wobec przeobrażeń społecznych*, Kraków 2015, p. 132.
11 Ibidem, p. 133.

Sects are defined as isolated social groups that act based on an internal hierarchy and accepted value system, in which the attitude toward the outside world is indifferent or unwilling.

Stalking refers to online harassment, intimidation, tracking, insulting, threatening, and disrespect for privacy, which leads the stalked persons to fear aggression from the stalker via emails, and phone calls. One perceives such a problem as virtual bullying.

Various synthetic substances, hallucinogenic mushrooms, herbal mixtures, and plants from Asia and Central America are also available in the virtual space. All include descriptions of use and effects. All elicit individual reactions far from normal.

Threats concerning cyberspace involve the possibility of information theft (which exposes the robbed party to losses), the possibility of intentional and illegal modification of information (which disturbs the sphere of professional or private activity that depends on the truthfulness and timeliness of the information that has been changed), the possibility of restricting access to information up to and including total blockade (which can paralyze certain spheres of activity with sometimes disastrous consequences), etc.

Environmental threats

When pointing out the environmental risks to people with physical disabilities, one should note significant similarities to healthy people in this regard. In most cases, these risks are the same. And they can involve either soil, air, or water. These are, among others, any pollutants that find their way into the forests, as well as the activities of industrial plants that emit environmentally harmful substances, and chemical and biological contamination of waters that have their source or course in the forest. All hazards caused by human activity are called anthropogenic factors[12]. The broad human impact on the forest creates a serious ecological conflict that gradually deconstructs the image of the safe idea of the forest.

Waste management as one of the branches of the economy dealing with the whole cycle of activities such as creation, disposal, reprocessing, or utilization

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12   J. Dawidziuk, *Problemy stabilności oraz trwałości lasu w praktyce urządzeniowej*, „Studia i Materiały CEPL w Rogowie" 2014, no. 39, p. 89.

and permanent removal of waste from the environment is an extremely difficult and complicated process, taking into account the constantly growing world population and urbanization[13]. Waste, as any substance or thing that the owner or possessor is obligated to remove or properly dispose of, is a huge problem in the modern world. Still ineffective environmental education in many parts of the world, lack of accountability, and, most importantly, evasion of criminal responsibility are among the many reasons for the continuing devastation of nature with waste[14].

Both the more harmful waste and the less hazardous waste very often end up unsecured in the environment, as a result of which their decomposition causes many negative effects on the functioning of the ecosystem. Forests are particularly vulnerable to this threat. Many of these wastes are municipal wastes in which mineralization and chemical transformation of soluble to insoluble compounds occur due to chemical and physical changes. What is more, this waste undergoes weathering, which causes elements such as nitrogen, sulfur, and phosphorus to combine with carbon dioxide in the air to form dangerous chemicals, including nitrogen trioxide, which in turn contributes to the formation of acid rain.

Another serious threat is the acidification of soil and water bodies in forests due to the formation of nitric, sulfuric, or phosphoric acids. Acidification of soil minimizes the level of essential minerals such as manganese and magnesium in the soil, which play a very important role in the proper development of forest vegetation. Besides lacking minerals, plants are also devastated from root to inflorescence and unable to survive. Groundwater is also at great risk, as heavy metals in the soil seep into it.

Biogas is also a significantly strong influence on the forest environment. It is a combination of different gases due to the decomposition of organic matter. Biogas can cause many irreversible changes in the human body, poisons animals, and contributes to the drying or rotting of plants.

One of the significant problems is also the pollution of waters – especially rivers – with toxic substances and wastes that are found near forest areas or flow through them. When such substances enter the soil, it is at risk of losing its valuable properties, as in the case of soil acidification. Waste in forest waters is

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13   E. Zębek, *Zasady gospodarki odpadami w ujęciu prawnym i środowiskowym*, Olsztyn 2018, p. 11.

14   M. Solan, *Zanieczyszczenia lasów śmieciami*, „Inżynieria Ekologiczna" 2012, no. 30, p. 70.

thus a significant threat to aquatic biodiversity and the terrestrial animals for which these waters provide life[15].

Another source of water pollution is agriculture. Almost all modern methods of cultivating crops are based on the use of artificial fertilizers, the purpose of which is to maximize the efficiency of the entire process of producing goods. The ubiquity and unrestricted access to these fertilizers mean that there are more and more of them in the environment, posing a huge threat to the entire ecosystem, including water. Excessive toxic substances in agricultural inputs cause the death of aquatic biota. However, specific to the aquatic environment are nitrates and phosphates. These compounds greatly reduce the amount of oxygen in the water and contribute to the proliferation of algae. Due to their toxic properties, nitrates and phosphates adversely affect the immune system of humans and animals[16].

When analyzing the various threats to the forest, one should not forget air pollution, which can affect the entire ecosystem and thus poses a great challenge to ecological security. Air pollutants can be local, but they can also be global, which means that certain pollutants generated in a given area can have a significant impact on the air in a place far away.

Today, air pollution is one of the most important environmental problems in the world, as its steady increase contributes to the strength of the greenhouse effect. The greenhouse effect, on the other hand, as a phenomenon of a constant increase in the Earth's temperature, determines the effects of global warming, such as melting of glaciers and loss of biodiversity, among others.

It seems to me that people with mobility impairments, who have to use a car or public transportation more often, are much more exposed to the pollution emitted by automobiles. It is not just the exhaust from tailpipes but also lifting dust from the roadway. And on the roadway, we have dust from worn tires, that from soil erosion, and what came out of the tailpipes earlier. Not a very pleasant mix and certainly not very healthy.

Soil is another element of the forest that is exposed to contamination-related factors. Chemical compounds and especially heavy metals are absorbed into the soil, causing it to become acidic, resulting in a reduction of nutrients in the soil and leading to permanent weakening of the soil. A major pathway for air pollutants to enter forest soil is acid rain.

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15 Ibidem, p. 38–39.
16 Ibidem, p. 100–103.

Some plants, so-called hyper-accumulators, can take up very large amounts of heavy metals through their roots and accumulate them in their aboveground parts, e.g. many ornamental types of grass, the large-leaved lupine, sunflowers, willows, poplars. There are also known species that accumulate large amounts of arsenic, which contaminates both soil and groundwater. Plants are also used to purify bodies of water and air. Plants are also very beneficial to human mental health. For disabled and elderly people, they facilitate mental adaptation to physical disability – caring for plants replaces work, creates a sense of usefulness, and develops creativity.

By far the greatest and also the most catastrophic threat to the forest is mass logging. Deforestation is the disposal of trees over large areas through long-term cutting or burning. This process leads to the complete destruction and degradation of all elements of the forest ecosystem – including vegetation, animals, but also biomass or climate[17].

In recent years, there has been a huge increase in precipitation due to a warming climate. Climate change is also conditioning the intensification of other natural hazards that can extremely devastate many forested spaces. Such threats include drought.

Drought is another hydrologically specific natural hazard that poses an unimaginable danger to the forest. It is a weather anomaly lasting for a certain length of time, which should not be associated with so-called dryness, which in turn is a permanent and characteristic phenomenon for climatic zones with low precipitation throughout the year[18].

Winds are another dangerous natural threat to forests. Their specificity is that they can destroy a huge area of forest at a very fast rate. Unlike drought or heavy precipitation, the wind is not an extended process, making it much more difficult to try to reduce damage quickly.

In conclusion, both environmental and cyberspace threats impact human security in a fairly significant way. Ensuring this safety will not be possible without involving the widest possible range of people and institutions who are aware of the dangers and can contribute to protecting this environment.

17 W. Pływaczewski, *Grabież światowych zasobów leśnych – perspektywa forest crime* [in:] *Nielegalna eksploatacja zasobów leśnych*, eds. W. Pływaczewski, M. Duda, Olsztyn 2013, p. 11.
18 L. Łabędzki, *Problematyka susz w Polsce*, „Woda – Środowisko – Obszary Wiejskie" 2004, no. 4, p. 47–48.

Continued education of ICT security specialists and clerical staff is needed, as well as broader environmental education.

The use of the Internet in organizing assistance to people with disabilities is of great importance because, with the increase in the number of computers and the development of various forms of assistance, it can and should provide an important link between those in need, governmental and non-governmental organizations, as well as individuals, who are ready to help people with various disabilities.

It is important to minimize the negative effects of multimedia on the development of people with disabilities through education, awareness-raising, and partial or only initial control of the websites viewed by the client. The rational use of utilities and adherence to certain requirements are fundamental factors affecting the health and well-being of their users.

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Zagrożenia osób niepełnosprawnych w przestrzeni wirtualnej i środowiskowej – porównanie zachowań

Streszczenie

W artykule zostały przedstawione najważniejsze zagrożenia zdrowia psychicznego oraz fizycznego związane z Internetem oraz zagrożenia środowiskowe dotyczące osób niepełnosprawnych ruchowo. Współczesny człowiek mocno akcentuje potrzebę swojego bezpieczeństwa. Czyste środowisko ma istotne znaczenie dla zdrowia i dobrostanu ludzi. Również ważne jest bezpieczeństwo człowieka w cyberprzestrzeni. Znaczenie bezpieczeństwa obywateli korzystających z systemów technologii informacyjno-komunikacyjnych z każdym dniem wzrasta. W artykule porównano najważniejsze zagrożenia środowiskowe i w cyberprzestrzeni.

Słowa kluczowe: zagrożenia, bezpieczeństwo, zagrożenia środowiskowe, zagrożenia w cyberprzestrzeni