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Preparing students of social rehabilitation pedagogy to apply new technologies in the prevention of problems of adolescents

Abstract: The Internet and interactive tools, as numerous studies show, are beginning to determine the actions of the whole society, not only of young people. As a consequence, new technologies, as commonly used and accepted, should also be included in prevention and rehabilitation activities – as an element supporting and diversifying the above. The question is, are we ready for this? What knowledge and skills do students as future employees of educational centers, shelters for minors or correctional facilities have in this respect? Does, and if so – to what extent the knowledge of the factors conducive to effective prevention motivates them to learn about interactive teaching methods and educational tools supporting prevention activities? This article is, i.a., an attempt to answer the above questions. The studies submitted to the readers' hands were cyclical and were repeated every year for a period of 5 years. The research material was collected on the basis of a pedagogical experiment, which covered 88 people. The analyses are mainly based on quantitative data obtained from: knowledge and skills tests, observations, as well as surveys. The research material was supplemented with qualitative data obtained through interviews. The selection of the research group was intentional. The author used such statistics as: mean, median and the Wilcoxon signed-rank test.

Key words: new technologies in prevention, new media, information technology, interactive educational resources, students of rehabilitation pedagogy.

Introduction

The aim of prevention is to prevent the development of dysfunctions and inappropriate behaviors and, if they occur, to take action to mitigate, reduce and eliminate the causes of their disorders (Coie et al. 1996, pp. 15–37). Undertaking the above activities is extremely important from the point of view of both the individual and the society as a whole. Effective prevention programs develop a value system, right attitudes or empathy. The information function, which aims to provide knowledge about the consequences of alcohol, energy drinks, narcotic substances or smoking, is also extremely important. Currently, the main goal of prevention is to promote health through dialog and active participation of persons covered by the measure.

For a number of years, prevention, as part of the educational program, has been a margin of interest for the school, which places the main emphasis on education and upbringing. The above situation changed in 2002, when the Ministry of National Education and Sport, by implementing the Regulation of 31 January 2002 amending the Regulation on framework statutes of public kindergartens and public schools, included prevention in the permanent responsibilities of schools[1]. As a result, the institutions and the teaching staff are obliged to implement preventive measures adapted to "the development needs of students and the needs of a given environment"[2]. In line with the assumptions, the prevention program began to define the activities of schools and function parallel to the curriculum and education. Currently, the prevention program, as one of the three main pillars defining the activities of schools, functions coherently with the others and supports their implementation (Gaś 2005, p. 2). Since 1 September 2017, preventive measures have been designed and implemented as part of school educational and prophylactic activities constructed by teachers and accepted by parents. Systematic mobilization and simultaneous involvement of the family and school environment is extremely important in this context. The main goal of these efforts is the comprehensive develop ment of students and preparation for risk factors, thus constituting a key element of pedagogy and positive prevention (Konopczyński et al. 2017).

The analysis of the implemented preventive measures shows that it is extremely difficult to induce permanent changes in the behavior of participants (Bobrowski 1995; Grzelak 1995; Ostaszewski 1995). Therefore, which factors determine the effectiveness of preventive measures? The answer to this question, due to the complexity of the issue, is very difficult and is determined by a number
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[1] http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id = WDU20020100096.
[2] http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id = WDU20140000803.

of elements (Konopczyński 2014). An effective prevention program requires, i.a., identification and diagnosis of specific problems and needs of the environment, thanks to which it becomes possible to define priorities and directions of undertaken actions (Szymańska 2015, p. 94). The results of the research are also extremely important, as well as the adjustment of the undertaken actions to the individual characteristics of the recipient, their needs and directions of interest. Currently, there is also a strong emphasis on the regularity of actions and control over the effects. In the environment, it is recommended to abandon traditional forms of prevention and replace them with a contemporary model (Świątkiewicz 2002).

In the case of working with adolescents, it is therefore important to include new media as well as related educational elements in preventive activities. There are several reasons for this. First of all, humanity and especially the digital natives identify IT tools with a person, another human being. As a result, the knowledge resources obtained from the Internet, educational multimedia games or applications installed on smartphones are treated on an equal footing with the information provided by the teacher or parent. Additionally, using technology as a knowledge transmitter eliminates the problem of incorrect selection of contractors, both in terms of their personal characteristics and knowledge. Secondly, computer devices are more effective in creating appropriate attitudes than other media. As a result, TV or radio campaigns are not able to replace activities undertaken on the Internet (Reeves, Nass 2000, p. 292). Thirdly, the proper use of new media in youth and children's work correlates with the growth of: interest in the presented topics, the level of cognitive activity covering the presented issues, motivation to act and conscious learning of new areas, teaching effectiveness (Majewska 2015). Fourthly, blogs or chat sessions with anonymous people can reduce the feeling of loneliness while building awareness of social support (Shaw, Gant 2002) and emotional support (Lagan et al. 2011; Hasson et al. 2005; Zetterqvist et al. 2003; Barak 2007; Hopps et al. 2003). Fifthly, social media and extensive online databases make it possible to quickly find information on where and how to seek professional help and answers to questions (Lenhart 2015). Sixthly, the research confirms the effectiveness of psychological assistance over the Internet, especially cognitive-behavioral techniques recommended, i.a., in working with people suffering from anxiety and depression disorders (Newby et al. 2017; Smith et al. 2017; Newby et al. 2016), and eating disorders (Bruning Brown et al. 2004; Gollings, Paxton 2006; Grunwald, Busse 2003).

New technologies to support modern prevention

Information technology is successfully used in primary prevention. The expected results are obtained through lessons based on social impact theories using CDs or the Internet (Vogl et al. 2009; Newton et al. 2009).

Analyses carried out in the Netherlands by de Josselin, de Jong, Candela, Segaar, Cremers and de Vries on a group of 897 students aged 10–20 showed that activities based on the use of new media contributed to a decrease in the number of people starting to smoke. The activities referred to included an online survey, an assessment of the risks of starting smoking for each person involved, followed by the provision of appropriate guidance and recommendations to promote life free of addiction. Particularly positive changes were observed among young people aged 14–16, where 5.7% of the students in the experimental group declared a desire to try smoking, while 11.5% of the control group expressed such desire (2014). Similarly, positive results have been reported in case of drug prevention, which uses digital educational resources. In a study conducted by Walton, Resko and Barry on a group of 714 students aged 12–18, two factors were analyzed – the age at which they started taking drugs and the frequency of use. Computer intervention was made up of scenarios presenting the various risks associated with drug use. Teenagers were also presented with opportunities to make the right choice. It turned out that computer prevention was more effective than activities carried out by means of traditional leaflets. Statistical analysis after 12 months showed that the percentage of cannabis users entering the experimental group was 7% lower than in the control group educated by means of paper brochures which amounted to 17%. The frequency of cannabis use in the experimental group was also lower, which was verified after three and six months (2014).

Due to the high age spread of people involved in prevention activities, one should be aware that the effectiveness of these activities as well as the level of interest in this form of work may be very uneven. Qualitative studies carried out in Spain on smokers aged 18–75 indicated that not all patients have confidence in online support in the process of quitting smoking. Regardless of personal preferences, it has been noted that the inclusion of information technology elements in therapy has a positive effect. The analysis showed that the computer application developed by the research team facilitated access to consultations and helped patients save time (by eliminating the need for personal visits to the health center, in case of emerging problems or doubt). Interventions and e-mail consultations should, however, be of supportive nature because, as research has shown, they cannot replace direct contact with a doctor or a nurse. Completely eliminating contact with employees of health care institutions can increase the probability of cheating, as well as self-deception, and consequently a return to addiction (Trujillo Gómez et al. 2015).

The research also shows high effectiveness of the use of information technology in the prevention of unhealthy eating habits, which is possible thanks to flexible, individualized communication and wide access to knowledge and tools for monitoring, analyzing and sending feedback (Partridge, Redfern 2015). Equally importantly, new media can play a role in developing responsible behavior in the context of sexual initiation, protection against unplanned pregnancy, sexually transmitted disease and HIV (Roberto et al. 2007; Kann et al. 2012).

ICT tools are also used to prevent aggression and violence, for example when going on a date with a newly-met or violent person. For this purpose, the global positioning system (GPS), which allows to track our current position (e.g. by friends, families, police), is helpful (Tharp et al. 2012, pp. 105–111).

Methodological basis of own research

General background of research

The main aim of this pedagogical experiment was to examine the knowledge and skills of students of social rehabilitation pedagogy in the field of preparation, evaluation and readiness to apply new technologies in the process of prevention directed at youth. The above competences were analyzed from the point of view of knowledge of research results showing the benefits of using new media in prevention and social rehabilitation activities, as well as factors conducive to effective prevention activities. The verified hypotheses were supported by data collected as part of the following research questions:

1. Do, and if so – at what level do students of social rehabilitation pedagogy have knowledge and skills in preparing computer educational resources supporting the process of prevention directed at youth?
2. Does, and if so – to what extent the knowledge of the conditions for effective prevention improves the assessment of the usefulness of new media in the prevention process?
3. Does, and if so – to what extent the knowledge of the conditions for effective prevention increases motivation to use new media in the process of prevention directed at youth?

Selection of the study sample

The presented research was cyclical in nature and was repeated annually for a period of 5 years, starting from 2015. The research covered a total of 88 people (25 people in 2015, 30 people in 2016, 10 people in 2017, 10 people in 2018 and 13 people in 2019). The selection of research groups was purposeful. The experiment was carried out on students of the third year of social rehabilitation pedagogy, which constituted a deliberate selection of the research group.

The research questions and hypotheses

The main purpose of the experiment was to answer the following questions: Do and at what level students of social rehabilitation pedagogy have knowledge and skills in preparing computer educational resources supporting the process of

prevention directed at youth? Does, and if so – to what extent the knowledge of the conditions for effective prevention improves the assessment of the usefulness of new media in the prevention process?, and Does, and if so – to what extent the knowledge of the conditions for effective prevention increases motivation to use new media in the process of prevention directed at youth? The author of the experiment was also interested in factors that motivate students to make an effort to plan, develop and use ready-made, interactive educational resources. The study assumes the following research hypotheses:

1. Students are able to design and prepare prevention activities supported by new media at least good level on their own.
2. Knowledge of new media and the forms of their effective use in prevention does not increase the assessment of the usefulness of new technologies in the process of prevention.
3. Knowledge of new media and forms of their effective use in prevention does not motivate educators to use new media in the process of prevention directed at youth.

Research tools

The conducted pedagogical experiment made it possible to collect information of both quantitative and qualitative nature. The collected data were obtained by means of a diagnostic questionnaire, a partially directed group interview and a knowledge test. The survey consisted of ten questions, including four open-ended and six closed-ended. The group interview included eight questions and the knowledge test featured five tasks. These tools were used by the researcher at the beginning of the experiment as well as after is end, which made current and comparative analysis possible. The experimental activities consisted in discussing the principles of effective prevention and the possibility of using new media in this area. Students were presented with examples of research results showing the benefits of including IT tools in the process of prevention and social rehabilitation.

During the research analysis, the following statistics were used: mean, median and the non-parametric equivalent of the Student's t-distribution test for dependent variables – the Wilcoxon signed-rank test.

Research results

It has been observed that the majority of students without prior preparation do not demonstrate independence in initiating interesting prevention activities with the use of new media. During the first meeting which was aimed at examining opinions and conducting preliminary interviews, surveys, as well as knowledge tests, students indicated that new technologies can be used for:
— developing and displaying multimedia presentations – 100%,
— screening films – 96.6%,

— searching for information online – 96.6%,
— printing out educational materials – 13.6%.

Experimental classes presenting the results of research on the positive impact of information technology on the prevention process, as well as the possibilities of using new media in this area have contributed to raising awareness of planning and developing valuable prevention activities supported by IT tools. Two directions related to the use of technology were distinguished among the respondents. First – in the activities of a teacher:

— development of information brochures – 76.14%,
— development of computer-based educational games – 71.59%,
— development of smartphone knowledge tests – 65.9%,
— use as a tool useful in doing outdoor activities – 47.73%,
    and second – in the activities of students, to work on:
— thematic websites – 81.82%,
— educational magazines – 71.59%,
— leaflets and posters promoting a healthy lifestyle – 69.32%,
— video materials – 65.91%,
— collages – 47.73%,
— comics – 43.18%,
— music pieces – 43.18%.

Thus, there are proposals to work with the student in an active and creative manner. The initially presented perception, focused on the use of media mainly to show content in traditional form, has greatly expanded its boundaries and referred to the direct dynamics of learners' actions. Experimental activities have also contributed to raising the importance of social media in the eyes of students, which in the opinion of the group of 93.18% of the respondents facilitate the promotion of specific attitudes, enable mutual cognition as well as establishing positive relations within the group (also in the context of the student-teacher system). As the respondents stressed (65.91%), smartphone applications are also valuable, enabling interesting and easily accessible participation in various types of prophylactic actions or promoting a healthy lifestyle (e.g. Endomondo).

It was noted that 86.36% of students, after previous preparation, did not have any problems with using the computer software, applications and Internet tools indicated by the lecturer, enabling them to design graphics, magazines, comics, websites – helpful in the process of prevention. Tests aimed at verifying the ability to independently learn about the software indicated by the lecturer have shown that:

— 13.64% of students have a negative attitude towards information technology tools and, consequently, show difficulties in making attempts to learn to use various software on their own,
— 27.27% of the group has the ability to work independently using software at a sufficient level,

— 39.77% were characterized by good cognitive skills,
— 19.32% of the respondents did not have any problems with mastering any indicated software, and their skills were assessed as very good.

Analyzing the resources prepared by the students, it was found that none of them was able to design and prepare computer educational resources on their own, or activities supported by new media, which were to serve as a preventive measure. Even students who had the ability to master any indicated software on their own were not able to propose creative activities and actions using new media. As a consequence, the hypothesis that *students are able to design and prepare prevention activities supported by new media at least good level on their own* was not confirmed. The respondents themselves stressed that their previous knowledge in this area was insufficient and systematized. Among particularly interesting activities with the use of information technology, the pedagogues indicated: activities based on the use of social media, outdoor games with the participation of ICT and all initiatives aimed at stimulating the student.

Due to the open attitude of the majority of students towards information technology tools, it was expected that this group will positively assess the possibility of using ICT in the prevention process. The author of the study also assumed that students possess up-to-date knowledge of the use of new media in the process of prevention and social rehabilitation, and that they will be able to give interesting examples of their application. Meanwhile, the initial measurements showed that the group assessed the usefulness of the use of new media in the process of prevention as only satisfactory, with an average of 3.14 on a five-level scale. The lowest assessment was 1 out of 5 and the highest 4 out of 5. The Wilcoxon signed-rank test showed that there is a statistically significant difference between the first and second evaluation of the suitability of new media for prevention, made immediately after the experimental activities (asymptotic significance of 0.000). Three two-hour meetings (during which exemplary results of research showing the positive impact of new technologies on the prevention of problems of adolescents, as well as the possibilities of including new media in prevention activities were presented) were enough to assess the usefulness of new media. As a result, during the second measurement, the mean score of good plus (mean 4.49) was obtained, and the range of its values ranged from 3 out of 5 to 5 out of 5. As a result, the hypothesis that *knowledge of new media and the forms of their effective use in prevention does not increase the assessment of the usefulness of new technologies in the process of prevention* was rejected. Proper and reliable presentation of the benefits resulting from various forms of using information technology in the process of prevention resulted in a change in assessment and consequently in reaching a higher score. 72.73% of the respondents admitted that when talking about the use of information technology in the process of prevention they meant traditional presentations or screening videos using a projector. 69.32% of people declared that previously they had not attached any importance to the
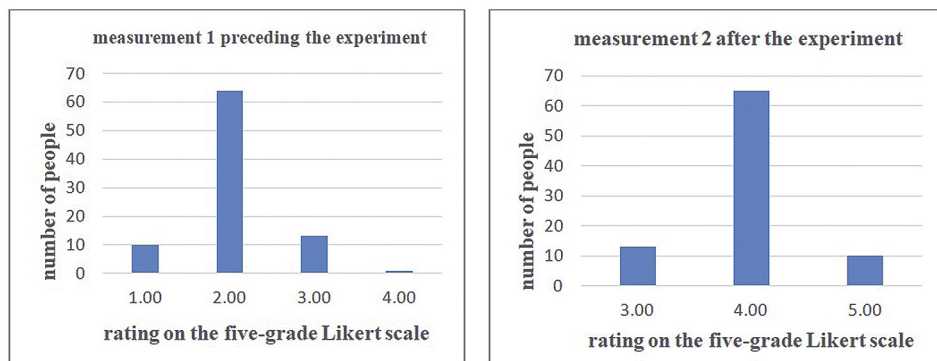
Chart 1. Willingness to learn interactive teaching methods supporting prevention of problems of adolescents declared by students.

Source: Own elaboration.

above-mentioned issue, considering it as not important and useless in the work of a social rehabilitation pedagogue.

On the basis of the conducted surveys it turned out that the knowledge of factors conducive to effective prevention motivates social rehabilitation students to learn about interactive teaching methods and educational tools supporting prevention. With regard to interactive teaching methods, the Wilcoxon signed-rank test showed that there is a statistically significant difference between the first and second assessment marked on the Likert scale and reflecting a desire to know them (asymptotic significance of 0.000). Identical results were obtained by analyzing the Wilcoxon signed-rank test data on the evaluation of educational tools supporting prevention (asymptotic significance of 0.000). The research carried out at the beginning showed that students initially had a negative attitude towards both new media-supported working methods and computer-based educational tools. This was reflected in the average assessment made using a five-point Likert scale (where 1 meant highest reluctance, and 5 meant highest willingness). During the first measurement on average students replied that they did not want to learn about innovative teaching methods (mean score of 2.06) and computer educational tools supporting prevention (mean score of 2.19).

A similar distribution of values was adopted in the case of the second examined factor, namely – the desire to learn about new, interactive educational tools. The first measurement showed that:

— 9.1% of the respondents were very reluctant to learn about computer educational tools supporting prevention;

— 64.8% of the respondents were reluctant to learn about computer educational tools supporting prevention;

— 23.9% of respondents declared that they do not care whether or not they learn about computer-based educational tools supporting prevention of problems of adolescents;
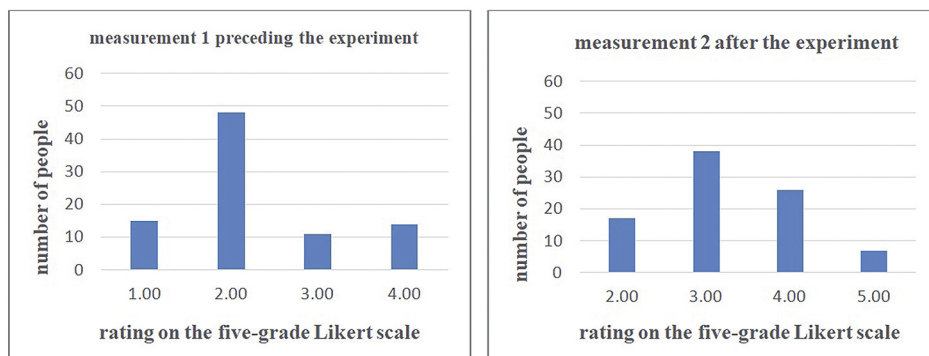
Chart 2. The declared willingness of students to use ready-made, interactive prevention resources

Source: own elaboration.

— 2.3% of students expressed interest in learning about computer educational tools supporting prevention.

The implementation of a series of classes, which were an experimental factor, contributed to a change in the general trend. Consequently:

— 13.6% of the respondents expressed that they do not care whether or not they students. Source will learn computer educational tools supporting prevention of problems of adolescents;

— 64.8% of the respondents declared that they were willing to learn about computer-based educational tools supporting prevention;

— 21.6% of the respondents stated that they are very keen to learn about computer-based educational tools that can be used in preventive work.

Quantitative data collected in the last research question clearly showed the emerging trends in the motivation of educators to develop and apply interactive educational resources within the planned preventive activities. The Wilcoxon signed-rank test showed that there is a statistically significant difference between the first and second assessment marked on the Likert scale and reflecting the level of motivation to use ready-to-use, interactive educational resources to support or be the core of prevention activities (asymptotic significance of 0.000).

Similar answers were provided by students in the context of using information technology tools in their active work. A positive attitude, as well as knowledge of the benefits of including new media in the process of prevention and social rehabilitation, has not resulted in a desire to develop multimedia educational resources on their own. The Wilcoxon signed-rank test showed that there is no statistically significant difference between the first and second assessment marked on the Likert scale and reflecting the level of motivation to develop interactive educational resources that support or are the core of prevention activities (asymptotic significance of 0.083). Regardless of the above result, it should be

stated that the hypothesis that *knowledge about new media and forms of their effective use in prevention does not motivate educators to use new media in the process of prevention directed at youth* has not been confirmed.

Discussion and conclusions

Despite a number of advantages and possibilities of using new technologies in the process of prevention and social rehabilitation of young people, it should be kept in mind that the problem of dysfunctional use of IT tools and the Internet is becoming increasingly common in society, especially among young people (Cash et al. 2012; Yau et al. 2012). Easy access to computers, tablets and smartphones, ubiquitous and unrestricted Internet access causes the adolescents to lose themselves in technology, spending every moment of their lives using it. This is often at the expense of other interests, friends, family and the time needed to rest. A number of studies show that teenagers neglect their family and school duties by spending too much time on the Internet (UNICEF 2017, Fischer-Grote et al. 2019; Sun et al. 2019), which contributes to family conflicts. The parents' desire to control such activity does not always make it possible to solve a complex situation, causing impatience and even rebellion among children. Secrets and lies begin to manifest, which creates an even greater gap between the affected family members. Very often, as therapists emphasize, attempts to restrict access to technology can result in verbal or even physical aggression.

With this in mind, it is important to focus on a few basic factors. First of all, children need to be prepared for responsible use of new technologies from an early age. Secondly, alternative activities to those highly addictive should be proposed, e.g. as a substitute for online games, offering activities stimulating the development of their creativity and passion. Thirdly, as Bronisław Siemieniecki pointed out, all teachers should be properly prepared and trained in media education, especially pedagogues, including social rehabilitation students (Siemieniecki 2007, pp. 55–62).

The research carried out shows that although young adepts of this trade use social networking sites and smart devices in their daily lives, they lack experience and self-confidence in the context of their professional career. This directly translates into a lack of initiative and ideas for interesting prevention activities, supported by new media. The above trend was recorded annually, throughout the entire course of the research and seems to be the norm. Students have reached a certain high level that enables them to use new media efficiently in everyday life, while neglecting the ability to use new technologies in the professional sphere. However, it is not difficult to make up for these deficiencies, thus expanding the set of methods and activities that are a tool in preventive and social rehabilitation actions. This is particularly important because of the generational change that is

taking place and the entry into adult life of generation Z, for which functioning without the use of new technologies seems unnatural. In the context of these people, but also generation Y, support for preventive and social rehabilitation activities with the use of new media may prove to be crucial in attracting and sustaining attention, and consequently in achieving the desired results. The ability to use new media correctly is particularly important in times of the pandemic, when direct relationships can be life-threatening. Readiness to work efficiently on the Internet opens up one of the ways for therapists to contact their clients, thus creating a safe space for meetings.

With this in mind, it is worth appealing to the academic community to provide students with access to media education, to carry out research in this field, as well as to develop interactive courses and multimedia educational resources and promote them in the form of MOOC (massive open online courses).

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