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Longitudinal studies report

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EDUKACJA 3.0
STOWARZYSZENIE

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Minister of National Education
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TASK IMPLEMENTED FROM STATE BUDGET

Table of contents

Introduction

This book supplements the publication issued in 2023, which was dedicated to identifying the current causes of problematic behaviours among children and young people in Poland. It attempted to characterise the current main protective factors, risk factors and problematic behaviours in young people. Additionally, in-depth statistical analyses allowed us to indicate the impact of individual factors on problematic behaviours, as well as the strength and direction of those mutual interactions. Knowledge about nationwide demand for prevention education measures in Poland can serve as a point of reference for school diagnoses in this field. This was the intention behind the conclusions and recommendations developed for children and young people from four levels of education (grades 1–3, 4–6 and 7–8 of primary schools and secondary schools).

This publication supplements the first one and is concerned with the effectiveness of implemented prevention education measures in the school environment – not only in theoretical, but also in empirical terms. It presents the results of longitudinal studies of the effectiveness of those measures, conducted on a representative group of Polish schools. Its objective is to provide knowledge about correlations between the implemented prevention education tasks, protective factors, risk factors and problematic behaviours. In other words, we wish to find out: what prevention education measures are implemented in schools, what type of prevention is involved (universal, indicated, selective) and finally – the effectiveness of individual measures.

This book is a research report comprising five chapters. Two of them present theoretical and methodological assumptions, while two other contain the research results and conclusions.

The first chapter provides the reader with knowledge about the key principles regulating implementation of prevention measures. It is based on standards aimed at helping educators and prevention experts prepare and organise prevention education programmes so as to ensure their effectiveness. The principles applicable to this area of intervention include seven standards developed by K. Wojcieszek and J. Szymańska (2003), namely: safety of the participants, adequacy of prevention measures, planned effectiveness, depth and duration of the prevention measures, forms and methods of their implementation, organisation of the programme containing those measures, as well as their evaluation and documentation. When describing each of the above standards, care was taken to update them and supplement them with current knowledge about education and prevention of problematic behaviours.

The second chapter, in turn, is dedicated to analysing the effectiveness, efficiency and conditions for dissemination of prevention programmes. The authors attempt to tackle the task of defining the above concepts and present the specificity of effectiveness and efficiency in the area of prevention measures.

Moreover, similarly to the previous chapter, they reference the concept of standards regulating psycho-prevention programmes, this time according to two approaches – European and American. The individual standardisation systems complement one another since they highlight different areas. The European standardisation system demonstrates model solutions in designing widespread prevention measures. On the other hand, the standards developed by the team of researchers from the USA, led by B. Flay (2005), focus on proposing strict criteria of scientific evaluation of psycho-prevention programmes. Both proposals share a single goal – high quality of the offered prevention measures.

The third chapter contains methodological assumptions, namely the objective of the presented research and the research procedure. It poses three research questions concerning: 1) the type of measures implemented in the school environment; 2) changes resulting from those prevention measures; 3) the most interesting aspect – their correlation with

protective factors, risk factors and problematic behaviours. The chapter contains detailed characteristics of variables to be measured and the tools used for measurement. It also characterises the respondents and methods of statistical analysis of the collected data. Additionally, it presents a list of protective factors and risk factors used to measure the effectiveness of prevention activities implemented in Polish schools.

Finally, the fourth chapter is a description of the obtained results. The analysis of research results was divided into three parts, dedicated to the research questions. The first part presents the severity of problematic behaviours in young people's environment. The characteristics were developed for different age groups, namely for primary school pupils of grades 4–8 and for secondary school pupils. Additionally, the analysed pupils were divided into three groups with a high and low level of engagement in problematic behaviours based on the type and frequency of the behaviours they engage in. This allowed us to determine how prevention measures are perceived by pupils with different levels of engagement in problematic behaviours. The second part outlines prevention education activities attended by pupils with different levels of engagement in problematic behaviours. The next area of the results analysis is dedicated to changes between the first and the second measurement of problematic behaviours, protective factors and risk factors. Thanks to this, it was possible to determine the effectiveness of prevention measures in school environment. The last part of this chapter is dedicated to analyses that will facilitate description of changes in protective factors, risk factors and problematic behaviours of pupils in relation to their participation in prevention education activities. Additional division into different age groups makes it possible to capture which prevention measures are effective in the environments of primary school and secondary school pupils.

The last chapter of the presented book contains conclusions collected in the course of the analyses described in the previous chapter. They show, among others, that less than 10% of primary school pupils exhibit a high level of engagement in problematic behaviours. These behaviours mainly include use of violence, drinking beer and smoking.

Among secondary school pupils, a high level of engagement in problematic behaviours already affects 27.4% of young people. The most frequently occurring dysfunctional behaviours include: verbal abuse, browsing erotic websites, smoking or vaping and drinking beer.

In primary schools, the most frequently indicated subject of prevention education activities was handling online abuse and online safety (approximately 50% of pupils declared that they have participated in at least one to four class hours dedicated to this subject). On the other hand, in secondary schools, the most frequently indicated subject of prevention education activities was online safety (approximately 44% of young people have participated in at least one to four class hours on the subject), class integration (approximately 43%), psychoactive substance prevention (approximately 41%) and handling online abuse (39%). Pupils with a high level of engagement in problematic behaviours indicated participation in such activities more frequently. To learn about the remaining results and conclusions, please read the remaining part of this publication.

Chapter 1
Prevention standards

Developing new solutions to complex social problems, similarly to developing new products or services, requires diverse conceptions, theoretical approaches, as well as various modi operandi. While diverse conceptions bring a certain synergy to the initial stage of problem solving, they can later become a source of misunderstandings, confusion and a multitude of ineffective solutions. As responsibility for the quality of these solutions grows, standards meant to guarantee high quality and effectiveness are created.

1.1. Importance of standardisation for the quality of measures in different areas of life

In general, standardisation of measures involves experts in a given field setting the criteria for the optimal solutions or features of a product or service. One of the objectives of this process is dissemination of the standards.

There are different definitions of a standard. For example, W. Nyszk (2009, p. 72) states that "a standard means typicality of measures that arises from the adopted modus operandi, from procedures or customs applied in specific conditions, which are meant to ensure that tasks are completed while maintaining a specific level and quality".

M. Sierpińska and T. Jachna (2007, p. 28), in turn, believe that a standard is "a norm developed for individual sections, departments or the entire economy based on several decades-long observations of enterprises' historical data". The above definitions highlight different approaches to standards as well as different areas of their application, which indicates their interdisciplinary nature. W. Nyszk (2009, p. 73) distinguishes three types of standards, depending on the needs because of which they are developed:

1) regulatory standards – resulting from legal acts and regulations, imposed by the state, which supervises compliance with those standards;
2) accreditation standards – intended for the organisation's own use, defined by it independently, introduced in the form of internal regulations, practices and monitored by it for compliance;
3) target standards – applied by leading organisations, frequently adopted as the benchmark when defining customers' needs and expectations.

To sum up, the concept of a standard typically appears in three contexts:
1) as a desirable construct (the perfect model, e.g. high-quality prevention programmes – in the Polish context, they can be found in the bank of recommended programmes);
2) as a prototype (the original model for creating a prevention programme);
3) as a basic service (minimum version of a product or service, e.g. it can be a standard for all prevention education programmes at school to be developed based on a demand diagnosis).

All of the above perspectives assume that a standard is the best possible way to deliver a given service or product. (Imai, 2006)

Standards allow us to fulfil the assumptions of quality policy in terms of provided services. Formalised standards take the form of norms and serve as the basis for creating systems that regulate activities in many institutions.

M. Imai (2006) believes that standards can play many important roles, namely:
- they present the best, easiest and safest method of performing work;
- they are the best method of preserving knowledge and expertise;
- they are a criterion for measuring work;
- they show the correlation between the cause and the effect.

Standards should serve as the benchmark in planning, implementation and evaluation of service quality. Other key functions of standards include:

- supporting values, principles and goals important for the institution's operation and indicating conditions related to the development of the institution and its employees;
- providing reliable theoretical basis for practical measures;
- helping institutions meet the changing needs of service or programme recipients;
- communicating key objectives to other institutions, the state, professional environment and the society as a whole;
- defining a wide range of correct practical measures.

In practice, in quality assurance, standards play two major roles:

1) regulatory – they indicate the desired outcome, influencing people's decisions and actions;
2) informational and motivating – when supplemented with monitoring and measurement tools, they demonstrate differences between the current and ideal situation. This serves as a source of information and, at the same time, becomes a motivating factor for the unit and team to take action in order to improve service quality.

Standards are a way of inducing recurrent desirable behaviours in large environments, which forms correct habits. A well-structured standard should be observable (i.e. describe what should be done to ensure a high level of a given product or service), measurable (i.e. it should determine how, in what quantity, when and to what extent it will be achieved) and finally, it should be uniform (i.e. well-defined and known to all employees who should use it as the basis for their professional activity).

1.2. Problematic behaviour prevention standards

As demonstrated above, developing and applying standards has numerous advantages. Other important arguments for it can be found in the field of prevention, namely responsibility for the health of individuals benefiting from prevention and the expectation of public institutions (funding prevention measures) to see evidence for its effectiveness. (Flay et al., 2005) The first argument is threefold. Firstly, improperly organised prevention causes real harm, for instance negative education and premature initiation. Secondly, prevention measures which are not adapted to young people's needs do not help them resolve their difficulties, which leads to them experiencing real suffering and seeking dysfunctional methods of solving problems. In a long-term perspective, this can lead to addictions, breaking the law and negative health consequences. Thirdly, since an individual's health and development are of value to the society, they must not be hurt as a result of careless, unverified prevention measures.

Another important argument for developing and applying prevention standards is the fact that prevention is financed with public funds. Decision-makers allocating funds to prevention programmes expect high-quality programmes that are effective in solving important problems of children, young people, as well as parents and school experts. To sum up, according to B. R. Flay et al. (2005, p. 1), standards are there to "help practitioners, decision-makers and administrators determine which interventions are efficient, which ones are effective and which ones are ready to be disseminated".

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) , in turn, states that standards are aimed at improving the quality of addiction prevention measures, which is supposed to come about by delivering an empirically tested system for describing those interventions. Developing standards is meant to fill in the gaps between science, strategy and practice. (Brotherhood, Sumnall, 2011)

Therefore, standards are a model of sorts, a blueprint for how to act, which is helpful when it comes to diagnosing demand, conceptualising prevention measures, implementing and evaluating them.

The European Monitoring Centre for Drugs and Drug Addiction defines standards as "generally accepted principles or sets of rules for the best/most appropriate way to implement an intervention. Frequently they refer to structural (formal) aspects of quality assurance, such as environment and staff composition. However, they may also refer to process aspects such as adequacy of content, process of the intervention or evaluation processes.". (Brotherhood, Sumnall, 2011, p. 39) In the most general terms, prevention standards are norms created by the professional environment, which form a benchmark for experts in the field of psycho-prevention when developing and implementing prevention programmes and interventions. They generally concern both the procedure for constructing a programme or intervention and the competences of the person implementing these measures. Their basic goal is to deliver high quality, including to ensure the safety of the participants.

1.2.1. Attempts at standardising prevention measures in Poland

One of the first – if not the very first – attempts at implementing prevention standards in Poland was a study by K. Wojcieszek and J. Szymańska (2003): Standardy jakości pierwszorzędowych programów profilaktycznych realizowanych w szkołach i placówkach oświatowych [Quality standards of primary prevention programmes implemented in schools and educational institutions]. The publication was prepared at the request of the Methodological Centre of Psychological-Pedagogical Counselling in Warsaw (currently the Centre for Education Development).

The authors proposed seven key standards to support proper implementation of prevention measures, namely:

1) Safety of the participants;
2) Adequacy of prevention measures;
3) Effectiveness of prevention measures;
4) Depth and duration of prevention influence;
5) Selection of proper forms and methods of prevention;
6) Prevention programme organisation;
7) Prevention programme evaluation and documentation (Wojcieszek, Szymańska, 2003).

1.2.1.1. Standard 1: Safety of participants

According to the authors, safety means observing strict ethical standards derived from pedagogical and psychological sciences. Prevention should focus on supporting young people while they experience developmental challenges. It requires special competences, i.e. high level of knowledge, professional skills, personality traits, as well as values that regulate work and personal life. All these requirements boil down to the key principle of medicine, that is: *Primum non nocere* (Lat. "first, do no harm"). Given the sensitivity of the subject-matter, i.e. young people's development, harm can be inflicted in a number of ways, among others through lack of respect for the agency, dignity or privacy of the addressee of prevention measures. Another issue is adapting the form and content of the message to the stage of development of young people, which requires comprehensive knowledge in the field of developmental psychology. It can also be harmful to use techniques of working with people that are inadequate for prevention – techniques which cross the boundaries set by the definition of prevention. Methods used in prevention differ from those used, for example, in psychotherapy or rehabilitation. In other words, psycho--prevention activities should be of top quality and should use the most effective work methods. Laudable slogans, good intentions or popular social ideas are not enough when organising such activities. What is needed is a competent, well-prepared professional who knows what they are doing and why.

On the other hand, prevention should never take the form of manipulating, labelling or stigmatising another person. Neither should it violate their personal well-being in any way.

The safety standard sets out rules based on which the prevention expert uses their personal traits, knowledge and skills to create the right conditions for the addressee of these activities to resolve their problem or meet their developmental needs in a constructive way.

1.2.1.2. Standard 2: Adequacy of prevention measures

The next standard proposed by K. Wojcieszek and J. Szymańska (2003) is adequacy of prevention measures. It combines the prevention programme with analysis of demand for educational and prevention content, focusing on adapting the programme content to the needs and problems of prevention measure addressees. Implementing prevention measures without a prior diagnosis is like giving children medicine without getting a medical opinion. Would any parent medicate their children without consulting a doctor? We certainly hope none of our readers would do it. However, the reality is that schools often implement prevention measures without verifying the need for them – just in case. Taking medicines needlessly creates a health hazard. Likewise, organising prevention activities when they are not required is detrimental to the development of young people.

In prevention, diagnosis means more than merely identifying problems and responding to them in the form of a prevention programme. When working with pupils, many successful educators can tell what they struggle with, the negative behaviours present in the environment or the young people's unmet needs. However, they can never determine the percentage of youth affected by the aforementioned problems or their causes. They certainly cannot explain how risky behaviours correlate with protective factors or how many of them there are. On the other hand, an in-depth diagnosis not only reveals the scale of a given phenomenon or problems, but also allows for identification of their mechanisms and causes. As a result, it improves precision and effectiveness of the applied prevention measures.

On one hand, adequacy means the aforementioned adaptation of prevention to the needs and problems; on the other hand, it involves matching prevention content and its presentation to the age of the addressees. Premature education on problematic behaviours can cause fear and discomfort in young people, as well as give rise to interest in such behaviours, or even negative modelling.

Adequacy in prevention can be compared to putting together landscape from many puzzle pieces. Scientific analyses which identify key protec-

tive factors and risk factors, as well as explain the causes of risky behaviours, are nothing more than the landscape to be recreated – the point of reference when putting a puzzle together. The diagnosis of demand, in turn, is merely the shape and colour of the puzzle pieces that we need to select to convey the meaning of the constructed picture.

1.2.1.3. Standard 3: Effectiveness of prevention measures

Effectiveness in prevention is measured based on achievement of the objectives adopted in the prevention programme. It means that the objectives assumed at the concept stage of the programme are consistent with what is achieved as a result of the prevention measures. It depends, on one hand, on establishing the correct objectives, and on the other hand – on the quality of prevention.

An objective is a specific point in space that we want to reach as part of a given measure. This definition entails certain requirements, namely that a well-established objective should be specific, measurable, achievable, relevant and time-bound (abbreviated as "SMART").

- **"Specific"** means that there should be no trouble understanding it, it should be explicit and leave no room for loose interpretation;
- **"Measurable"** means formulated so that specific indicators (e.g. numerical) describe the degree of its achievement or at least enable unequivocal verification of its implementation;
- **"Achievable"** means that it should be attainable using the means at our disposal. An objective that is too remote diminishes faith in its achievement and therefore motivation to pursue it;
- **"Relevant"** means that an objective should have a positive value and be aimed at progress or development; at the same time, it must be relevant for the person implementing it;
- **"Time-bound"** means that an objective should have a precisely defined time horizon for its achievement.

These features make defining an objective an extremely challenging and difficult task. However, when developing a prevention programme, other elements are also needed to meet the effectiveness standard. Another equally important task is selecting the appropriate content, adapting the

type of prevention to the specific traits of its addressees, choosing the right prevention strategies and, finally, developing an appropriate schedule. Correctness and quality of these steps translates to achievement of the prevention programme objectives.

In addition to conceptualisation, which is important for prevention to be effective, another key component is the background and competences of the people responsible for implementation, which is supported by numerous studies. (Ostaszewski, 2003; Ostaszewski, Poleszak, 2019; Pyżalski, Poleszak, 2019) These traits were described in more detail in the discussion of the safety standard. Effectiveness of prevention is closely correlated with the next standard – depth of intervention and its timing.

1.2.1.4. Standard 4: Depth and duration of prevention influence

Depth and duration of prevention influence are other features that impact the effectiveness of prevention. Depth of measures is closely correlated with the adequacy standard due to selection of the prevention-related content. However, the focus of this standard is on the causes of problematic behaviours. Many prevention measures prioritise countering the symptoms, which is not very effective since those can be replaced by other symptoms. A good example of it is a young person who behaves violently as a result of stress experienced at school. Focusing exclusively on violent behaviours and blocking them will not help the young person cope with stress. Instead, they will look for a different method of dealing with this problem (e.g. drinking alcohol, smoking) to release the emotional tension. This is why prevention that addresses young people's unmet needs (in life as well as in the area of development) is much more effective than symptom-based prevention. However, it requires a proper analysis of demand for educational and prevention content.

An accurate diagnosis needs certain points of reference. They can result from scientific analyses, which provide knowledge of protective factors and risk factors at the root of problematic behaviours. (cf. Poleszak, Kata, 2023) Using knowledge of the severity of such factors in a given environment allows for a relatively precise selection of prevention measures, and thus for responding to young people's prevention needs.

Depth of influence should be considered jointly with types of prevention, distinguished based on the severity of risky behaviours in the addressees of prevention measures. P. J. Mrazek and R. J. Haggerty (1994; Ostaszewski, 2016; Poleszak, 2023) distinguish the following types of prevention:

1) **universal prevention** – supporting correct development and healthy lifestyle of all pupils and protégés as well as taking measures aimed at limiting risky behaviours, regardless of the level of risk of substance use (intoxicants, psychotropic substances, substitutes, new psychoactive substances). It targets the whole population, without identifying the groups at risk;
2) **selective prevention** – supporting pupils and protégés who are more prone to developing risky behaviours due to their family situation, environment or biological reasons. They key identify the targets of prevention measures is exposure to risk;
1) **indicated prevention** – supporting pupils and protégés showing early symptoms of substance use or other risky behaviours, which have not been diagnosed as disorders or conditions that require treatment. This is the group with professionally diagnosed traits that increase the risk of addictions or problematic behaviours.

Each type of prevention entails different content and depth of influence. Failure to adapt the prevention content to the severity of problematic behaviours not only can make prevention ineffective, but it can actually harm the young people's health and development.

Another important component of prevention measures is adjusting the timing of the activities to the programme objectives. The starting point for determining the length of the activities is what content is supposed to be conveyed during those activities and in what form. The challenge is to make choices based on the programme objectives, not the available time. Brief time for prevention activities forces the organisers to adopt passive forms of work (lectures, talks, films, etc.). They are less likely to make the participants think and are therefore less effective. Another aspect of the same problem is working within the framework of a 45-minute-long class hour. The programme has to be adapted to these time units because the sound of the bell distracts the participants from their tasks.

Time limitations are one of the major difficulties when it comes to organising prevention measures at school without extra classes dedicated to prevention (apart from the homeroom). Organising longer activities requires changing the school schedule. This is why many schools frequently opt for adapting the prevention content to the available time. Adopting standards which prevent such mistakes and preparing programmes with planned implementation time for individual modules is meant to counter this phenomenon.

The assumptions of this standard can be juxtaposed against the practice of prevention in various school environments along four general sliding scales, illustrating the effectiveness of prevention from low to high:

1) focus on the symptoms versus focus on the causes of problematic behaviours;
2) prevention focused on reducing the severity of problematic behaviours versus prevention regulating protective factors and risk factors;
3) non-specific prevention ("everything for everyone") versus prevention adapted to the severity of problematic behaviours;
4) brief interventions ("talks") versus prevention programmes.

1.2.1.5. Standard 5: Selection of proper forms and methods of prevention

The next prevention standard is selection of proper forms and methods of work. How to organise activities also follows from adopting the standards described above (e.g. adapting them to the age of participants, demand for content or level of prevention). The essence of this standard is to ensure the effectiveness of the activities. This, in turn, depends on how attractive and engaging the activities are to the participants. For this reason, prevention programmes should involve forms and methods of work that allow for in-depth engagement with the discussed subject-matter within a brief period of time. The intended result is to encourage personal reflections, a change of attitudes or re-evaluation of opinions and behaviours.

The term "**method**" means prevention measures that answer the question of how to effectively convey content arising from the objectives adopted in the prevention programme. In general, there are six methods of orga-

nising and conveying content – they are frequently called strategies or prevention measures (Figure 1). These are:
1) information strategy;
2) educational strategy;
3) alternative measures strategy;
4) intervention strategy;
5) environmental changes strategy;
6) legislative changes strategy (Gaś, 2006; Poleszak, 2012, 2023).

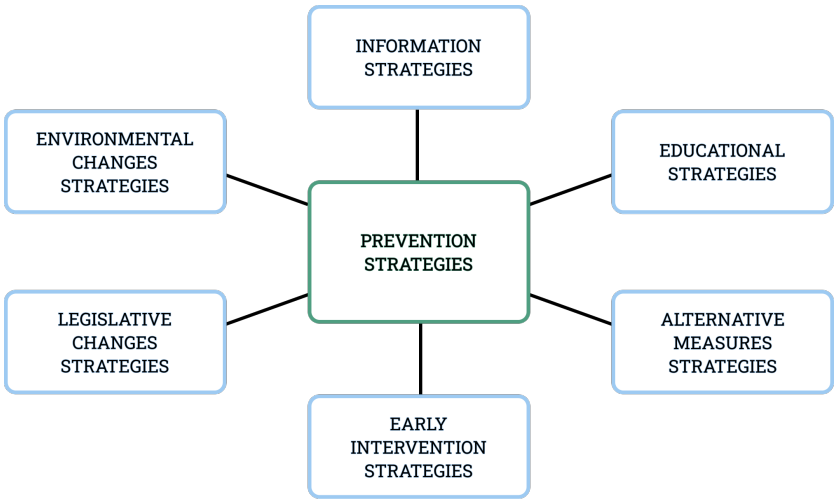


Figure 1. Prevention strategies according to Z. B. Gaś (2006)
Source: Own elaboration based on Gaś (2006)

The i**nformation strategy** arises from the belief that reliable information is key for each person when making constructive decisions. Its objective is to equip the addressee with adequate, reliable and up-to-date information about hazards, their specificity, prevalence and the risk they pose to health and correct development of a person. This strategy becomes particularly important when tackling the issue of normative behaviours – when many young people engage in risky behaviours, falsely believing that such behaviours are common.

Information measures can be implemented using social campaigns, conferences, lectures, fairs, mass media, billboards, posters, brochures, as well as informational and educational websites, e-mails, text messages, blogs and chats.

Use of information measures is supported by the following rules guiding human behaviour:
- reliable knowledge is the basis for making constructive decisions;
- people naturally search for information about themselves and the world;
- reliable knowledge prevents manipulation by other people;
- information measures are cost-effective and easy to implement.

On the other hand, this strategy also has the following downsides:
- having information does not automatically mean using it;
- information can be selectively perceived;
- knowledge can be used to enhance dysfunctional behaviours;
- knowledge conveyed improperly gives rise to interest in dysfunctional behaviours.

The **educational strategy** is aimed at teaching the addressees of prevention measures the skills of fulfilling their personal needs in a constructive way. These skills involve efficient use of personal potential and satisfactory navigation of interpersonal relations. As part of this strategy, young people are typically taught to communicate, solve problems, make decisions, handle stress and pressure of the environment, as well as develop the skill of managing their free time. These abilities are acquired through behavioural training and skill workshops. The effectiveness of activities depends on the ability to translate the information conveyed into personal experience of the addressees of preventive measures. Meeting the following conditions can prove helpful to that end:
- the activities should be a response to the participants' needs;
- the programme content should be coherent and adequate (a described above);
- the facilitator should be professionally prepared to organise the activities (including in the area of group work, not only in terms of presented content);

- if the duration of the activities allows for it, it is extremely valuable to use group dynamics in the skill learning process;
- work make use of active methods.

The **alternative measures strategy** boils down to seeking alternatives to problematic behaviours in children and youth. It is aimed at developing interests and teaching young people to make constructive use of their free time. Suggestions as part of this strategy can focus on ways of spending free time, engaging young people in social activities, including prevention measures. The expected result is building a positive peer environment and positive peer pressure, as well as developing and supporting constructive activity among young people.

It should be noted that such measures should be planned and have a specific objective – not all alternative activities have the traits of prevention measures, only those that fulfil a developmental role and promote a healthy lifestyle. Examples of alternative measures include sports, film clubs, theatrical groups, volunteering, religious groups, music bands and other hobby groups.

These areas of young people's activity are meant to provide an alternative to idleness, boredom, excessive internet use and the resulting problematic behaviours. Positive activity is in itself a protective factor. Additionally, it supports building a sense of self-worth and self-esteem, which also protect young people from dysfunctional behaviours.

The effectiveness of this strategy relies on the following conditions:
- awareness of the developmental objective of the prevention measures (the activities are supposed to support young people's development);
- adopting the structure a prevention programme (the strategy should achieve the adopted goals and objectives, not only occupy the young people's free time);
- presence of an involved facilitator who is competent in the field of prevention (a person who can combine development of interests with psycho-prevention knowledge and skills);
- proposed activities that align with the children and young people's interests;

- the environment supporting the prevention measures (premises, logistical and financial resources, expert's supervision).

Intervention strategy is a set of measures aimed at helping the individual handle the problems and crises they experience. This assistance is focused on identifying the sources of difficulties and looking for ways to resolve them. The key component of such prevention measures is establishing a counselling relation based on mutual trust, efficient communication and building a relationship involving empathy. Interventions should be brief, short-term responses to a problem experienced by an individual (preferably at an early stage). Otherwise, there is a risk of reinforcing destructive methods of solving such problems.

The effectiveness of this strategy relies on:
- the person intervening being able to establish a rapport;
- knowledge of and ability to execute the intervention steps;
- identifying unmet needs of young people in crisis;
- developing a method of constructive problem-solving/meeting the pupil's needs;
- monitoring the behaviour of the assisted pupil.

Peer support programmes, which involve properly prepared peers executing the intervention, can be an important form of assistance in the intervention strategy. An example of such a peer programme is the Peer Counsellor Programme, developed by Z. B. Gaś (1992, 2000).

The objective of the **environmental changes strategy** is to improve the environment in order to provide more effective protection against problematic behaviours in children and youth. This type of prevention is based on the belief that school is not a lonely island in the sea of problems. People are social creatures; they Constantly interact with each other and build communities. This strategy follows from the belief that problems are systemic and therefore the measures taken should target the system as a whole, not merely its components. It is extremely difficult to raise a mature person who navigates life in a constructive way if that person spends their time after school in a dysfunctional or pathological environment. Therefore, the objective of this strategy is to introduce protective factors and reduce risk

factors in the children and young people's immediate surroundings, i.e. in their family home, local environment or broadly understood society. The effectiveness of this strategy hinges on the following conditions:

- social awareness of threats to the development of children and young people in a given environment;
- encouraging the young people's environment (parents, the local community, decision-makers) to take responsibility for creating healthy conditions for those young people;
- institutions and NGOs operating in a given environment being involved in the prevention measures;
- establishing interdisciplinary environmental teams in charge of prevention and ensuring good quality of their cooperation;
- appointing and supporting environmental leaders engaged in prevention.

The **legislative changes strategy** is a type of systemic measures that includes legislation procedures – both local and national. The above approach is based on the assumption that since health of individuals and the society is a social value, it must not be harmed as a result of reckless actions and decisions of selected groups exerting their influence. This area includes creating rules and standards supporting correct development and reducing risks for children and young people, as well as building groups that create positive influence through social norms and legislation. Interventions as part of this strategy are aimed at paying attention to whether the laws in place are observed, opposing lobbying that promotes psychoactive substances, exposing dysfunctional mechanisms of social life or proposing new legislative solutions.

The conditions for the effectiveness of these prevention measures include:

- awareness of the importance of standards and principles in protecting life and health;
- awareness of social losses resulting from irresponsible actions, breaking the law and abandoning prevention measures;
- convincing decision-makers in the fields of legislation and social life about the idea of a healthy life;
- convincing experts from different professional fields about the idea of prevention;

- funds allowing experts to exchange their views during organised congresses, conferences, etc. – both at a local and national level.

The main prevention measure strategies described above were presented as part of the standard concerning proper forms and methods of work. The following section of this chapter contains information about the optimal forms of psycho-prevention activities. How content is conveyed as part of prevention measures should be adequate to who, when, where and to what end is supposed to be the target audience of such measures. When adopting this assumption, it is crucial to consider whether work will take place in the form of individual activities with a pupil or group activities. Each form of work has its own specificity and requires different competences. For group activities, it is key to adjust the duration of psycho-prevention measures to the participants' needs and adopted objectives. If the programme objectives necessitates a longer group work, using the group process in working with the programme addressees should be considered. This requires proper preparation in terms of the subject-matter.

Another aspect of effective prevention is choosing the appropriate type of measures. The purpose is to select the method of directly influencing protective factors and risk factors – according to the needs of the school environment. D. Wyrick et al. (2001) discuss twelve types of measures which can take the form of prevention programmes. Additionally, there are peer programmes, which take advantage of the natural support network for the purpose of education, peer assistance or reinforcing positive leaders. As a result, there are thirteen types of prevention measures that create opportunities for real psychosocial changes in young people (Figure 2).

1) Developing normative beliefs;
2) Lifestyle incongruence with future plans;
3) Moral commitment;
4) Demonstrating the consequences of problematic behaviours;
5) Building resistance skills to peer pressure;
6) Support of constructive goal-setting;
7) Teaching decision-making skills;
8) Alternatives to problematic behaviours;
9) Self-esteem improvement;
10) Teaching stress management skills;

11) Teaching social and emotional skills;
12) Teaching young people to use assistance;
13) Peer programmes.

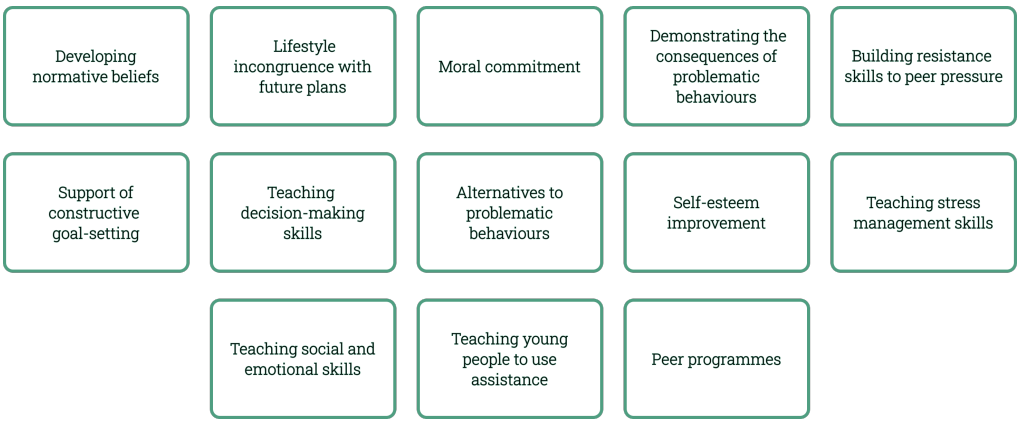


Figure 2. Types of prevention programmes/measures according to D. Wyrick et al. (2001)
Source: Own elaboration based on Wyrick et al., 2001

Each of the above prevention measures leads to specific changes, defined and elaborated on in Table 1. The descriptions presented in the Table can serve as inspiration for prevention measures as well as help to operationalise them in the prevention education programme, especially when it comes to choosing objectives and their indices.

Table 1. Types of prevention programmes/measures according to D. Wyrick et al. (2001) and W. Poleszak (2012)

Type of measure	Definition	Predicted impact on problematic behaviours
Developing normative beliefs	This measure focuses on young people's perceptions of prevalence and acceptability of alcohol or psychoactive substance use.	The assessment of prevalence of psychoactive substance use and other problematic behaviours is expected to be rectified. Moreover, this measure is expected to reduce acceptance of use and availability of psychoactive substances among peers and in the environment.
Lifestyle incongruence with future plans	It demonstrates to adolescents that their ideal (or dream) future is incongruous with drug use.	Individuals make decisions based on their idealised vision of the future and notice that drug use is incompatible with the goals they hope to achieve. The source of impact is the resulting cognitive dissonance.
Moral commitment	It emphasises moral reasons for living drug free.	Development of strong personal commitments to live drug free discourages substance use. It is a type of confrontation between the values adopted by the young people and negative behaviours they engage in.

Type of measure	Definition	Predicted impact on problematic behaviours
Demonstrating the consequences of problematic behaviours	This type of prevention measure focuses on the consequences of using or abusing drugs and the likelihood of experiencing social and/or physical harm from drug use. Multiple consequences of problematic behaviours are emphasised, in particular long-term and short-term physical, psychological and social damage.	Adolescents' knowledge about the harmful consequences of drug use is increased and the young people gain more awareness of how psychoactive substances affect the key areas of their lives.
Building resistance skills to peer pressure	This measure teaches how to identify pressure to use psychoactive substances or engage in problematic behaviours from peers, siblings, parents, adults and the media. It also equips pupils with skills to assertively resist negative pressure of the environment.	Development of personal skills and more effective ability to say "no" allows adolescents to efficiently cope with negative pressure of the environment.
Support of constructive goal-setting	It promotes the development of skills necessary for setting and attaining important life goals.	Increased motivation to strive for achievement and the ability to set and achieve goals emphasises the incongruence between drug use and attaining personal goals.

Type of measure	Definition	Predicted impact on problematic behaviours
Teaching decision-making skills	It teaches rational decision making, identifying problems, creating solutions and making choices between positive and negative behaviours.	The development of decision-making skills assists adolescents in making rational choices concerning psychoactive substance use and engagement in other problematic behaviours.
Alternatives to problematic behaviours	It emphasises participation in programmes and activities that offer alternatives to psychoactive substance use.	Exposure to at-risk situations is reduced and involvement in activities that run counter to drug use is emphasised.
Self-esteem improvement	It focuses on developing the feelings of self-worth in young people. This measure emphasises in particular each individual's strengths, their uniqueness and recognition of individual talents.	Improved self-esteem will serve as a protective factor during exposure to psychoactive substances and peer pressure.
Teaching stress management skills	The objective of this measure is to teach skills that help young people manage psychologically difficult situations. It emphasises ways of dealing with stressful situations that are alternatives to problematic behaviours.	A reduction in perceived stress will reduce the risk of psychoactive substance use and other problematic behaviours.

Type of measure	Definition	Predicted impact on problematic behaviours
Teaching social and emotional skills	It provides social and emotional skills training, including: emotion management skills, communication skills, human relations skills and conflict resolution skills.	Focusing on social skills will reduce psychoactive substance use by young people. This will be achieved by improving their communication skills, helping them to gain social acceptance and teaching them to resolve interpersonal conflicts peacefully.
Teaching young people to use assistance	It teaches adolescents to accept assistance when they experience problems, including when using psychoactive substances, and educates them on what forms of assistance are available in such situations and where.	Providing social support to at-risk individuals and educating them on where and how to seek support and help.
Peer programmes	Peer programmes are measures that take advantage of the natural support network and bonds between peers, as well as their interpersonal appeal, in activities promoting health and peer support as well as in guiding pupils to receive professional assistance.	The objective of this prevention measure is to build a positive atmosphere, identify peers in crisis situations and guide them to seek expert assistance, as well as to promote health education.

Source: Own elaboration based on Wyrick et al. (2001); Poleszak (2012)

Regardless of which of the above measures are chosen, it is essential to ensure that they act as activators, i.e. that they are interesting and engaging. (Wojcieszek, Szymańska, 2003) Activator methods include different types of group work techniques. The most commonly used ones are:

- techniques facilitating interaction and information exchange;
- activating techniques;
- trust-building techniques;
- projection techniques;
- therapeutic stories;
- confrontational techniques;
- techniques reflecting the group structure;
- overcoming habits and patters;
- community work;
- taking advantage of the group process (Yalom, Leszcz, 2006).

On one hand, activating work methods considerably improve the participants' engagement in the proposed content, on the other hand – it creates the right conditions for enhancing personal experience and discovering new content.

However, it should be noted that one-off measures rarely create desirable changes in children and youth's behaviour. This is why diagnosis serves as the basis for a broader set of measures to be taken in order to achieve the intended objectives. In other words, a prevention programme is developed.

1.2.1.6. Standard 6: Prevention programme organisation

A prevention programme is an organised set of content and measures, properly selected by experts. When implemented, it leads to the specific intended changes in the individual or group's behaviour. It includes, among others:

- detailed prevention objectives and tasks;
- structured prevention content;
- recommended organisation and method of implementing the prevention programme;
- specific didactic resources;
- literature for the pupil and organiser;
- procedure for analysing the programme efficiency (Gaś, Poleszak, 2017).

Polish literature contains several concepts when it comes to developing a prevention programme. (Gaś, 2000, 2004; Ziarko, 2010; Gaś, Poleszak, 2017) This publication will present the model prepared at the request of the Ministry of National Education by Z. B. Gaś and W. Poleszak (2017). The concept is based on two sources of knowledge. On one hand, it relies on scientific knowledge based on which prevention programmes are constructed, and on the other hand – on the guidelines contained in the Act of 14 December 2016 – Educational Law (consolidated text: Journal of Laws of 2024, item 737, as amended). This legal act introduced the obligation to combine two programmes implemented in the school environment: education and prevention. Hence, the programme includes both educational and prevention objectives. The educational objectives are planned for a given stage of school education, while the prevention objectives are updated in the annual diagnosis of demand for prevention measures.

The proposed model of developing the prevention education programme of a school and educational institution includes five stages, each of which comprises specific steps to be taken when developing the programme (Figure 3). Each of the five stages is a set of activities that involve collecting the required information or developing content needed to implement the next stage of programme building. It can be described as the following process: from developing the profile of a school graduate, through documentation analysis and diagnosis, to conceptualising the programme it-

self. The last two stages involve developing an evaluation strategy and the need (based on the educational law) for educators to prepare detailed plans of educational and prevention work for their classes that are compatible with the school's programme.

Figure 3. Procedure for developing the prevention education programme according to Z. B. Gaś and W. Poleszak (2017)

Source: Own elaboration based on Gaś, Poleszak (2017)

The first stage of developing a prevention education programme of a school and institution starts with analysing the formal and legal conditions. It focuses on putting the programme under development in a broader educational context and in the context of other legal documents. The core objective of this measure is for the programme organisers to realise that this document does not exist in isolation from the school's other tasks. To the contrary – it is supposed to support the pupils' development and rectify ineffective aspects of education so that the pupils can efficiently pursue their educational tasks.

Subsequent steps involve learning about the parents' and teachers' position in the context of expectations regarding educational content and

adapting educational plans to the pupils' potential and their stage of development. During these two steps, the potential of the school and local environment should also be considered. The last step is translating the collected information to specific characteristics of a future school graduate. This measure will position education and prevention on a continuum between the starting point and the planned results. Such a framework can be helpful when it comes to filling it with content.

The second stage of developing a prevention education programme focuses on diagnosing the environment's demand for educational and prevention content. It comprises six steps, which help in collecting the required information (Figure 4). Generally speaking, diagnosis is an assessment of a certain phenomenon, presented based on the compiled research and analyses. The objective of diagnosis is to identify the condition of pupils in a given school and their developmental tendencies based on the symptoms and knowledge of general patterns (in this case, patterns at a given stage of development). Analysing the pupils' situation at school involves describing the pupils' positive and negative psychosocial characteristics (protective factors and risk factors) as well as psychological mechanisms of how they operate.

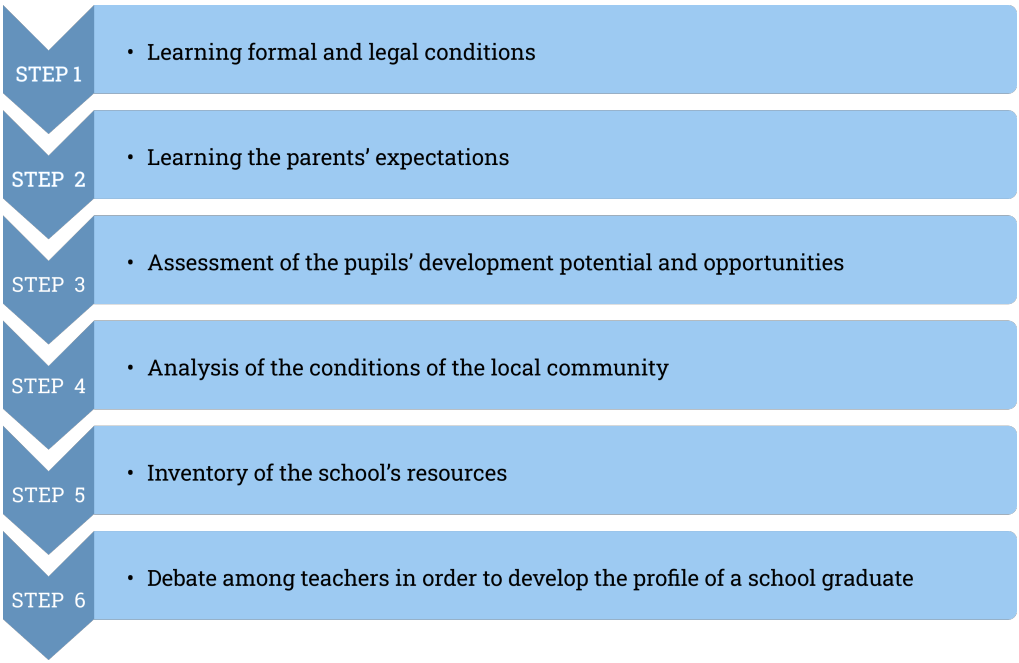


Figure 4. Stage 1: Characteristics of the profile of a school graduate according to Z. B. Gaś and W. Poleszak (2017)

Source: Own elaboration based on Gaś, Poleszak (2017)

In addition to diagnosing the aforementioned factors in pupils, it is helpful to identify the school's success stories and failures in the field of education and prevention (Figure 5). Analysing their sources will allow for tasks which foster success and rectify failures to be included in the programme. The three remaining steps also pertain to identifying the prevention education potential in a given school or environment. It allows for determining what resources the school already has at its disposal (both internal and local, e.g. psychological and pedagogical counselling centre experts, libraries, NGOs involved in education and prevention) and what it needs to learn as part of the developed programme. Another important step is identifying the developmental and training needs of teachers and school experts. It should be noted that the Polish Educational Law assumes that educational content in a prevention education programme is addressed to pupils, while the prevention content should take into account the needs of pupils, teachers and parents.

Figure 5. Stage 2: Analysis of the school's previous measures according to Z. B. Gaś and W. Poleszak (2017)

Source: Own elaboration based on Gaś, Poleszak (2017)

The third stage of developing a prevention education programme is conceptualising the programme based on previously collected information (Figure 6, cf. Figure 5). The first step defines the areas to be addressed when developing the programme. There are five such areas according to educational law: physical, emotional, intellectual, social and spiritual (axiological). The next stage of work involves setting the objective or objectives of the developed programme, which is typical of any such programme or project. These objectives must be in line with the developmental patterns and must meet the aforementioned conditions for a properly constructed objective. It constitutes a certain point in space and should be specific, measurable, achievable, relevant and time-bound (cf. SMART). Tasks that will lead to the desired results operationalised in the form of objectives should arise from those objectives. In other words, tasks are "bricks" used to build "walls" (objective). Together, these "walls" are a "house" (programme).

Figure 6. Stage 3: Conceptualisation of the prevention education programme according to Z. B. Gaś and W. Poleszak (2017)

Source: Own elaboration based on Gaś, Poleszak (2017)

Detailed objectives corresponding to each area of a person's development can be introduced to streamline the process of conceptualising the programme. The next steps add the planned content to prevention measure strategies and involve selecting appropriate forms of its execution – adequate to the level of development and needs of the addressees. It can be helpful to prepare a matrix with columns for prevention strategies and rows containing individual activity organisers (teacher of a given subject, educator, psychologist, external organiser, etc.). The last step is time coordination of all tasks to create a schedule of prevention programme activities.

The conceptualisation stage should also include planning of the programme's evaluation procedure – stage 4 (Figure 7). Although evaluation seems to be a remote perspective, its substantive assumptions mean that it must be planned already at the programme development stage (cf. Figure 6).

The first step of this stage involves choosing the type of evaluation (of an objective, process or outcome). Determining the evaluation strategy, in turn, involves making a decision on whether the research will be carried out once, twice or even multiple times. Another variant is to introduce a comparative or control group. The next step is deciding how the evaluation results will be used. This step is important since it determines how the collected information will be presented. It is a crucial choice in terms of notifying the respondents.

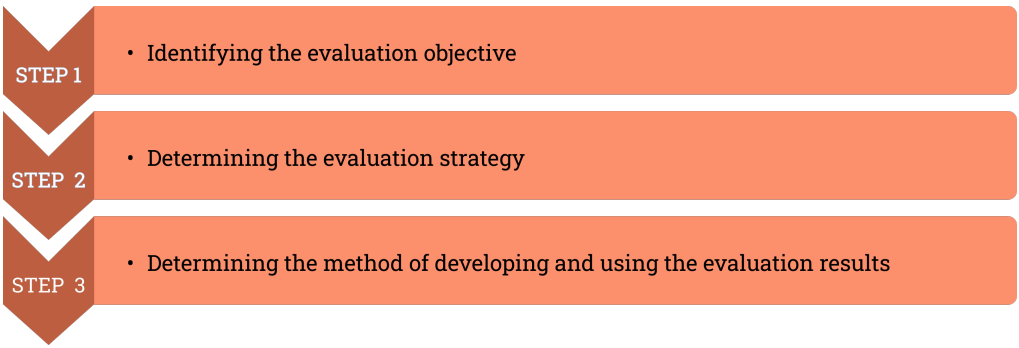


Figure 7. Stage 4: Developing an evaluation strategy according to Z. B. Gaś and W. Poleszak (2017)
Source: Own elaboration based on Gaś, Poleszak (2017)

More information about the essence and assumptions of evaluation will be presented in the next sub-chapter, dedicated to the evaluation and documentation standard.

The last stage of developing a prevention education programme of a school and institution is constructing prevention education plans (Figure 8). This measure arises from legal assumptions (Act of 14 December 2016 – Educational Law) as well as specificity and complexity of the discussed type of programme. This stage will not appear in other models of developing prevention programmes since they are typically simpler constructs. This solution is also supported by the substantive argument that a programme developed for the school as a whole forces its authors to make certain generalisations and thus omit content which is important in individual classes. Including the fifth stage in the procedure of developing a prevention education programme allows for specific prevention needs to be ta-

ken into account at the level of individual classes. Although it is a separate section of the programme, it should constitute its integral part.

Figure 8. Stage 5: Developing prevention education plans for classes according to Z. B. Gaś and W. Poleszak (2017)

Source: Own elaboration based on Gaś, Poleszak (2017)

Individual steps of this stage involve repeating the measures taken during the third stage (programme conceptualisation). However, they are much simpler since they concern the specificity of a given class. Naturally, class plans only include content that was not taken into account for the entire community of pupils.

1.2.1.7. Standard 7: Prevention programme evaluation and documentation

According to H. Mizerek (2012, p. 37) evaluation involves "intentional, systematic collection of data required to define the value of the implemented programmes or functioning entities in order to describe them, explain them, and thus strengthen their potential and focus on development".

Evaluation of a prevention education programme, in turn, means "deliberate, planned and systematic measures in a school environment, including preparation of own system for collecting and developing information that assigns value to the prevention measures, published in the form of diagnoses, analyses, reports and opinions used to improve the quality of prevention education measures at school". (Gaś, 2006, p. 55)

There are typically three types of evaluation, depending on the method of collecting information:

1) objective evaluation, where the benchmark is the degree of achievement of the prevention education objectives adopted in the prevention education programme. For this type of evaluation, indices are formulated in relation to the programme objectives;
2) results evaluation, where the indices relate to the achieved results, i.e. the impact of implemented initiatives. When evaluating the prevention education programme of a school and institution, the basic risk factors and protective factors associated with the individual, family, peer group, school, local community and broadly understood society are taken into account;
3) process evaluation is a type of evaluation that focuses on the implementation of prevention measures. It covers the subject, method and time frame of implementation of planned measures by specific individuals during the prevention education programme.

Performing evaluation is a difficult task that requires additional knowledge. Hence, to do it correctly, following a structured procedure is recommended. The evaluation clock (Figure 9), which is a set of twelve steps supporting the evaluation procedure, can be a helpful tool. These steps are:

- Step 1: Determining the evaluation objective
- Step 2: Determining the main organisers and addressees of the evaluation measures
- Step 3: Determining the evaluation indices
- Step 4: Defining questions regarding the evaluation indices
- Step 5: Determining the sources of evaluation information
- Step 6: Defining the evaluation procedure
- Step 7: Selecting evaluation methods and tools
- Step 8: Collecting evaluation data (research)
- Step 9: Analysis of the collected evaluation data
- Step 10: Interpreting the results
- Step 11: Confronting the prevention education objectives with the achievements in the respective areas
- Step 12: Modifying the prevention education programme.

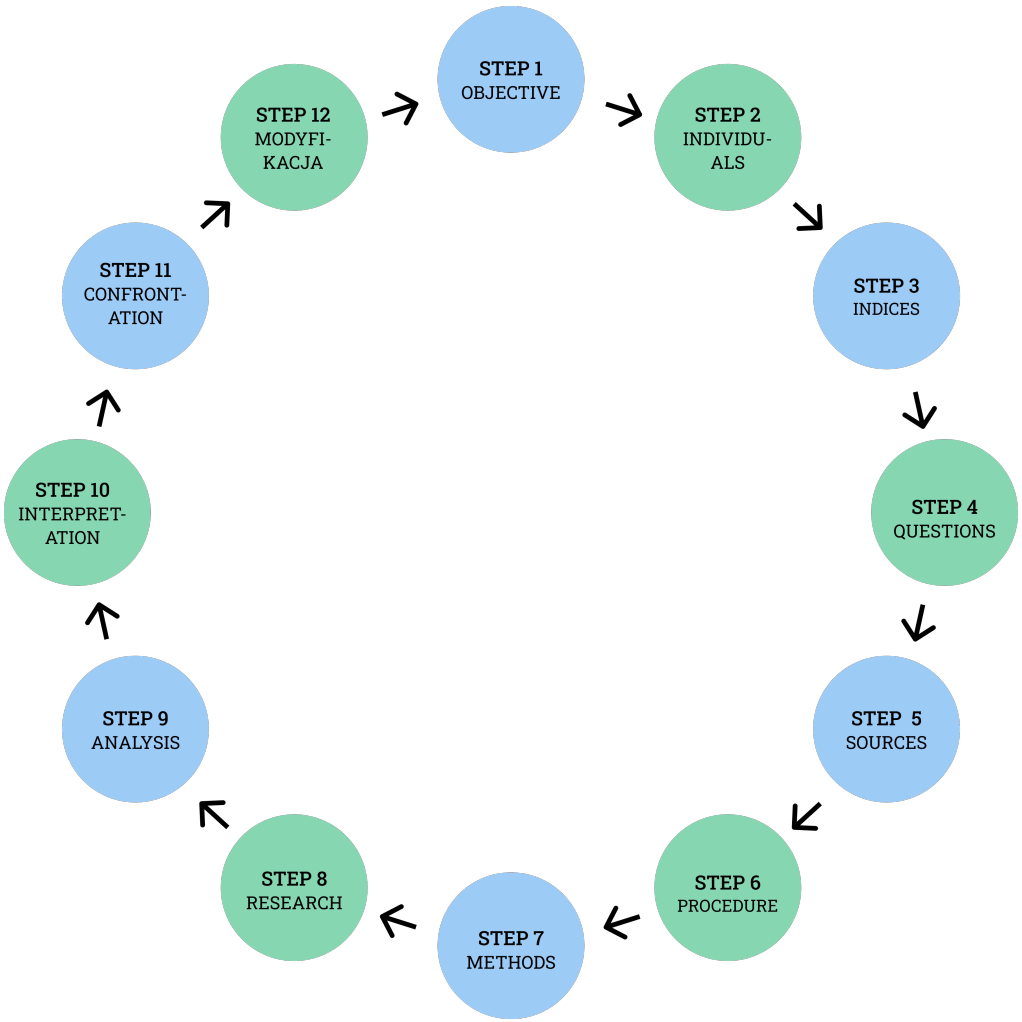


Figure 9. Evaluation clock

Source: Own elaboration based on Gaś, Poleszak (2017)

Standards in prevention can be summed up using the conditions for effective prevention proposed by Z. B. Gaś (2006). They simultaneously support and supplement the above standards of prevention at school. Z. B. Gaś (2006) proposes four conditions for effective prevention (Figure 10):

1) profilaktyka szkolna powinna wynikać ze świadomości zagrożeń prevention at school should result from awareness of risks posed to correct educational process – this condition emphasises the direct correlation between prevention and education. Prevention is intervening when education proves ineffective. Moreover, it encourages in-depth consideration of the risks to young people's development in order to quickly react to their needs. This condition is connected with the postulates described in standards 1 and 2: safety of the participants and adequacy of prevention measures;
2) prevention at school concerns all individuals engaged in education measures – this postulate accurately draws attention to the fact that many teachers do not feel responsible for prevention at school. However, based on the assumption that prevention is used wherever education has proven ineffective, every educator, and therefore also teacher, is responsible for the resulting problems and their solutions;
3) prevention at school occurs at different levels – this condition refers to the standard of depth and duration of prevention measures. It advocates for adapting the type of prevention to the depth of engagement in problematic behaviours (cf. above – universal, selective and indicated prevention);
4) prevention at school takes various strategies into account – diversity and multitude of applied prevention strategies improve the chances of getting the prevention message across (cf. standard 5: selection of proper forms and methods of prevention);
5) prevention at school should include evaluation measures – this postulate is tantamount to the seventh standard proposed by K. Wojcieszek and J. Szymańska (2003). However, it should be noted that the point of evaluation is to ensure that prevention measures are both effective and safe for the target audience.

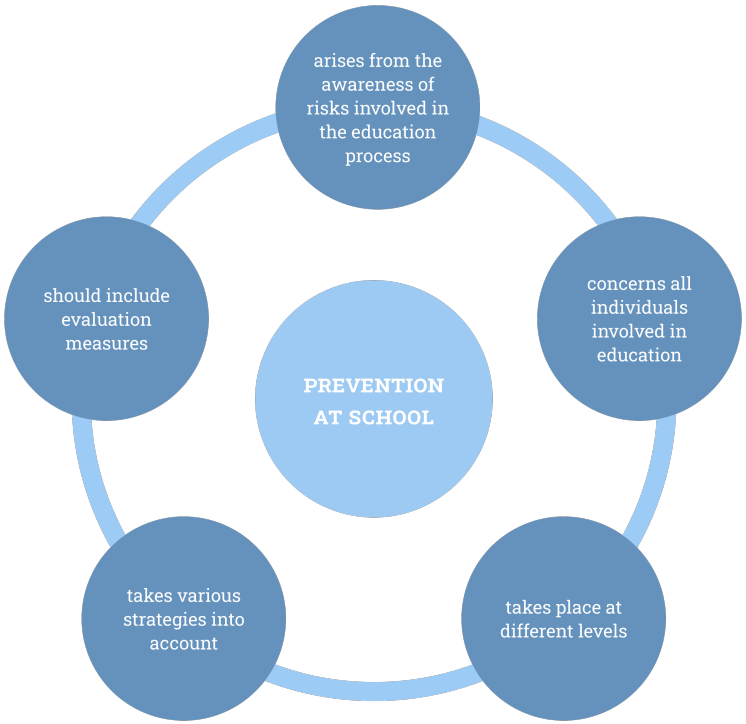


Figure 10. Conditions for effective prevention in school environment
Source: Own elaboration based on Gaś (2006)

1.2.2. European quality standards in addiction prevention

The European Monitoring Centre for Drugs and Drug Addiction has commissioned a manual for addiction prevention experts. After reviewing the existing literature on the topic, authors proposed their own manual that contains a list of standards which are key to the quality of drug addiction prevention. Although it is dedicated to preventing addictions to psychoactive substances (drugs, to be precise), it can be treated as a set of rules to be used in prevention of all problematic behaviours. According to the authors themselves, these rules are meant to improve the quality of prevention measures by taking the following four key aspects into account:

- "relevance of activities to target populations and (inter)governmental policies;
- adherence to accepted ethical principles;
- integration and promotion of the scientific evidence base;
- internal coherence, project feasibility and sustainability" (Brotherhood, Sumnall, 2015, p. 9).

The standards prepared by A. Brotherhood and H. R. Sumnall (2011) focus on structural and procedural aspects of prevention measures. Moreover, they appear to be more relevant to development of prevention programmes at an international, national and local government level (possibly to development of programmes as part of projects) rather than in a school environment. This does not mean that they cannot be used when considering and auto-adjusting prevention measures.
Creation of standards is arranged chronologically in relation to the project cycle – from the development stage, through implementation to evaluation (see Figure 10).
The standards proposed by the European Monitoring Centre for Drugs and Drug Addiction include three key levels of detail:
1) Project stages
2) Cross-cutting considerations
3) Attributes.

The first level comprises eight stages: needs assessment, resource assessment, programme formulation, intervention design, management and mobilisation of resources, delivery and monitoring, final evaluations and dissemination and improvement (see Figure 11 and Table 2). They reference the project development cycle by chronologically describing the key stages of prevention planning and implementation. It should be noted that the previously described model of developing a prevention education programme of a school and institution includes all these standards.

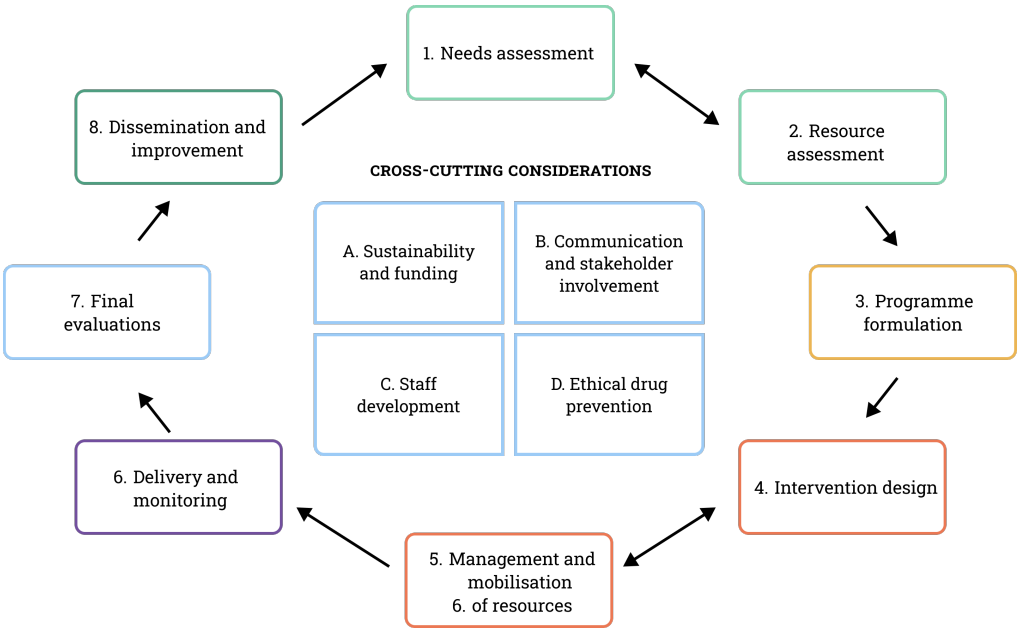


Figure 11 . Prevention standards in relation to the project cycle of a prevention programme
Source: Brotherhood, Sumnall (2011)

The second level comprises thirty-one components that supplement the project stages described above. In other words, each stage is divided into more detailed actions that complement each standard conceptually (see Table 2). Additionally, this level contains four components that all standards share, namely: sustainability and funding, communication and stakeholder involvement, staff development and ethical drug prevention. These four cross-cutting considerations are universal, but also important at each stage of implementation of the prevention programme.

Table 2. Project stages and components of the European quality standards in addiction prevention

Cross-cutting considerations
A: Sustainability and funding
B: Communication and stakeholder involvement
C: C. Staff development
D: Ethical drug prevention
1. Needs assessment
1.1 Knowing drug-related policy and legislation
1.2 Assessing drug use and community needs
1.3 Describing the need – justifying the intervention
1.4 Understanding the target population
2. Resource assessment
2.1 Assessing target population and community resources
2.2 Assessing internal capacities
3. Programme formulation
3.1 Defining the target population
3.2 Using a theoretical model

3.3 Defining aims, goals and objectives
3.4 Defining the setting
3.5 Referring to evidence of effectiveness
3.6 Determining the timeline
4. Intervention design
4.1 Designing for quality and effectiveness
4.2 If selecting an existing intervention
4.3 Tailoring the intervention to the target population
4.4 If planning final evaluations
5. Management and mobilisation of resources
5.1 Planning the programme – illustrating the project plan
5.2 Planning financial requirements
5.3 Setting up the team
5.4 Recruiting and retaining participants
5.5 Preparing programme materials
5.6 Providing a project description

6. Delivery and monitoring
6.1 If conducting a pilot intervention
6.2 Implementing the intervention
6.3 Monitoring the implementation
6.4 Adjusting the implementation
7. Final evaluations
7.1 If conducting an outcome evaluation
7.2 If conducting a process evaluation
8. Dissemination and improvement
8.1 Determining whether the programme should be sustained
8.2 Disseminating information about the programme
8.3 If producing a final report

Source: Brotherhood, Sumnall (2011)

The third and final stage of standard development involves attributes, which define each component in more detail. They can be divided into basic, additional basic and expert standards. Basic standards are assumptions referring to all measures within the scope of drug prevention. Their addressees are experts and organisations for which prevention is not the main area of activity. In Poland, such organisations would include schools (although it could be a matter of debate whether or not prevention is also one of basic obligations of Polish schools). The level of standardisation expected from these entities is basic level.

On the other hand, additional basic standards (so-called "basic standards if") are intended for special cases, whenever one of the expert standards does not apply due to a specific area of prevention measures (e.g. certain expert standards cannot be implemented without evaluation of results).

The last group of standards are expert standards, addressed to experts and organisations that wish to maintain top quality. They supplement basic standards and are dedicated to organisations involved in prevention in a strict sense, which meet the basic standards. It should be noted that the authors who developed the above standards take into account situations where applying certain expert standards is not recommended and unjustified.

The above standardisation model is an excellent framework for organising any measures at a national level and may serve as a point of reference for improving the quality of prevention in various institutions. However, due to its complexity, it is extremely difficult to translate directly into school environment, which has limited human and time resources. This study is a very good source of knowledge that can indicate the direction of prevention development and improvement.

Chapter 2
Analysis of prevention measure effectiveness

At the stage of prevention measure implementation in line with the standards listed and described in chapter one, it is still uncertain if a given psycho-prevention programme or intervention will have positive effects. They may or may not result in improved knowledge, skills or behavioural changes. Hence, one of the key questions in prevention and health sciences is measuring the changes taking place as a result of a prevention programme. Analyses in this field mainly focus on methods and ranges of measurements of the results (effects) of prevention measures.

2.1. Effectiveness, efficiency and dissemination – different aspects of analysing the results of prevention measures

Analysing the effectiveness of prevention measures is a difficult task. It requires both knowledge and a large number of different skills. Even defining it poses a serious challenge due to the fact that different disciplines interpret it in different ways. Many studies use two terms with similar meanings to describe the analysed effects of programmes, projects or social policies. These two terms are effectiveness and efficiency. Colloquially, they are used interchangeably. References can also be made to one of these terms while omitting the other.

W. Kowal (2013, p. 12) believes that the aforementioned difficulties with interpretation of effectiveness and efficiency are caused by three issues:

- finding adequate equivalents of Polish and English terms that refer to efficiency, which is a particularly difficult task given the ambiguity of these terms. The key problem is the search for appropriate equivalents between the Polish categories: sprawność, skuteczność, efektywność, ekonomiczność, wydajność and the English terms: effectiveness and efficiency;

- points of reference used in interpretation of all forms of efficiency at the basis of different fields of research in Poland and worldwide. As a result, effectiveness or efficiency is assessed in the context of a measure or organisation;
- the method of defining forms of efficiency, where the predominant approach seems to be based on quantitative (result-oriented) or non-quantitative (behavioural, process-oriented) approach.

Regardless of the aforementioned difficulties with defining effectiveness and efficiency, both terms are used in social and health sciences. Although the conceptual scopes slightly differ in management, economics and psycho-prevention, analysing them is recommended as they provide knowledge about the results of undertaken measures. There is also a socially justified need to analyse the effects of programmes, projects or social policies due to the following benefits:

- knowing the effects of a given programme indicates if that programme works and whether or not it is harmful;
- knowing the effects of a given programme allows for its adjustment and development;
- information about the effects of a given programme also make it possible to decide its future, namely – if it should be implemented without changes, improved or closed;
- knowing how a prevention programme works helps to make the decision regarding its recommendation and dissemination;
- finally, information about how much the programme costs in the context of its efficiency allows for effective management of funds allocated to prevention.

The above benefits provide understanding of effectiveness and efficiency as concepts in the field of prevention measures. **Effectiveness** is typically understood as measurement of the intended result of a given programme, project or the local government's social policy. Measurement of effectiveness focuses on the objectives and outcomes and disregards the costs of achieving these results. On the other hand, **efficiency** is not only a matter of whether the objectives have been achieved, but also whether specific prevention measures are worth taking. This is determined by comparing the expenses with the achieved benefits. If the benefits exceed the expen-

ses, the prevention measure or programme can be considered effective. The key issue when measuring effectiveness is calculating the costs. It is relatively easy to assess the value of the organiser's work and the costs of programme development. However, the more difficult task is to estimate the organisational effort or peer involvement in peer counselling programmes (although it is not impossible).

In his effectiveness analysis of several more popular prevention programmes, K. Ostaszewski (2003) does not define effectiveness as such. Instead, he uses the following effectiveness indices: "behavioural (direct) indices, e.g. the frequency of drinking alcohol, smoking, drug use; indirect, e.g. the intention to drink alcohol, attitude towards psychoactive substance use, knowledge e.g. about the health effects of drinking alcohol, knowledge about the addiction mechanisms". (Ostaszewski, 2003, p. 132)

Different definitions of the above terms are proposed by B. Flay et al. (2005). They believe that "effectiveness refers to beneficial effects of a programme or policy in optimal implementation conditions, while efficiency refers to the effects of the programme or policy in more realistic conditions". (Flay et al., 2005, p. 153) This difference arises from the fact that the authors have in-depth professional knowledge and use these terms in relation to a narrow field of prevention measures. However, this does not change the fact that there is an important theoretical and practical justification for their position.

According to B. Flay et al. (2005), it is key for the quality of prevention to ensure high standards of three interconnected but not identical processes in prevention, namely: effectiveness, efficiency and dissemination of prevention programmes. They assume that the first step of the procedure, aimed at verifying the results of the developed programme (project or social or health policy), is a pilot version of the programme carried out by its implementers. The first implementation is performed by the creators (people who understand the idea behind the programme) and typically takes place in optimal conditions (with participation of trained personnel), with full involvement and monitoring. Thanks to it, such implementation is somewhat unique and deviates from typical implementation in real-world conditions. This is why the evidenced effects of a programme

implemented in special conditions are defined as its effectiveness. On the other hand, analysis of the effects of a programme that has already been verified by the programme authors and deemed effective, but is implemented in real-world conditions by trained individuals, is defined as efficiency. (Flay et al., 2005)

According to the authors of this approach, "**effectiveness** analysis requires a rigorous analytical approach, high-quality programme implementation and the researcher having control over confounding effects. For example, as part of effectiveness analysis, the researcher can test a school programme with highly trained and supervised research personnel, delivering the intervention in optimal conditions". (Flay et al., 2005, p. 153)

On the other hand, efficiency analyses focus on the quality of implementation of a verified programme in natural conditions. The point of such analyses is to identify all confounding effects that affect the assumed and documented programme results. These effects include: the implementers' lack of experience, a school environment that is unprepared for the programme or a group going through a conflict, which prevents full programme implementation. In general, the objective of efficiency analysis is to verify how faithfully the programme was carried out and adapted to the conditions in which it is implemented.

To sum up, a programme which achieves significant results in effectiveness analysis can – but does not have to – achieve similar results in real-world conditions. The goal of professional prevention is to maintain this consistency. This is why it is necessary to test this area of prevention measures. In order for a programme to be deemed effective, it should also meet all effectiveness standards.

The third aspect of quality assessment of prevention programmes is the dissemination process. Even if a programme is effective, it does not make it automatically ready for widespread dissemination. In many cases, it requires additional materials, specialised trainings, consultations or supervision. All of this is necessary for the programme to be implemented while ensuring its maximum effectiveness and reproducibility of the effects from its pilot iterations.

This attitude towards effectiveness and efficiency in the USA is drastically different from the level of prevention implemented in Poland. It should be treated as an important developmental direction for prevention in Polish conditions. The right step towards effectiveness is building a bank of recommended programmes, although this solution also has many drawbacks. One of them is the small number of programmes recommended in the bank. On top of it, some of them were implemented more than twenty years ago. Another issue is the fact that programmes do not meet the current demand for prevention. Some of these flaws could be addressed by introducing efficiency analyses according to the above definition, especially given the fact that the team of researchers led by B. Flay has developed standards to help ensure top quality of the implemented programmes. The standards they have developed apply to all three areas of analysis of the effects of prevention measures, namely: effectiveness, efficiency and dissemination. The purpose of adopting those standards was to "formulate a set of rules for identifying prevention programmes and policies which have been empirically verified enough to earn the labels of 'tested and effective' or 'tested, effective and ready for dissemination' ". (Flay et al., 2005, p. 153)

2.2. Requirements for the prevention programmes' effectiveness analyses

Similarly to implementation of prevention measures, standards can also be determined when it comes to analysing the effectiveness, efficiency and dissemination of those measures. The following part of this publication will be dedicated to standards of prevention measure effectiveness due to the fact that the analysis results presented later on in the study concern the search for effectiveness of prevention measures at school. Another reason is the incredible diversity of analysed programmes, which precludes efficiency analysis. Moreover, nobody undertakes dissemination of prevention education programmes of schools and institutions. This is why the next part of this thesis will focus on effectiveness standards.

Their core objective is to ensure that every prevention measure achieves the desired results, i.e. that it can be deemed effective. B. Flay et al. (2005) assume that in order for a programme to be called effective, it

must undergo a rigorous analytical review (ideally in the form of two independent analyses) that meets the following criteria:

1) The analysis should be representative of the specific population targeted by the programme;
2) The methodology of the analysis should be based on psychometrically reliable measures and data collection procedures;
3) The statistical approach to the analysis project and sample selection should be appropriately selected;
4) Consistent, positive analysis effects (without serious iatrogenic effects) should be demonstrated;
5) Evidence that significant results are maintained for at least one observation period should be delivered. (Flay et al., 2005)

American researchers have translated the above effectiveness criteria of prevention programmes into standards. These standards attempt to precisely describe the principles of the process of assessing the effects of the analysed prevention measure. As a result, the researchers propose twenty-eight standards, split into five areas with varying complexity of measures. For some of the standards, they additionally define the desired intensity levels of a given standard.

The first area is declaration that the programme developed by the authors meets all structural and implementation standards while delivering the expected results (Table 3). Further specification of the target audience is important here since no programme is meant to be universal. This standard encourages the authors to take responsibility for the effects of their programme (alternatively – project or policy, since standards described here can also apply those measures). It boils down to a simple declaration, which – if true – requires professional knowledge, skills as well as hard work.

Table 3. Area 1 – Declaration of effectiveness

Standard area	1. Specificity of the effectiveness declaration
Standard	A programme effectiveness declaration should be published
Desired standard level	Programme or policy X is effective in delivering results. It delivers results Y for population Z

Source: Own elaboration based on Flay et al. (2005)

The second standardisation area is dedicated to the characteristics of the prevention programme, the adopted objectives and achieved results. It consists of three parts: the first one concerns programme characteristics, the second one – a description of what the authors consider to be a positive effect, while the third one is dedicated to the characteristics of the measurement procedure.

The first standard of the second area requires a detailed presentation of programme assumptions (Table 4). The description of the intervention and its results should be sufficiently precise to allow other implementers to carry out a given programme without any additional information. The purpose of such a detailed description is to ensure that programme replication achieves the same results as those assumed and achieved by the authors.

Table 4. Area 2 – Detailed description of programme assumptions and achieved results

Standard area	2.1. Description of the intervention and results
Standard	2.1.1 Intervention must be described at a level that enables others to implement/replicate it

Source: Own elaboration based on Flay et al. (2005)

Correct presentation of prevention programme assumptions should include: characteristics of the group targeted by the programme, theoretical basis or logical model describing the anticipated mechanisms of influence. Moreover, it should contain a detailed description of the programme contents and organisation, duration, number and type of interventions, etc.

On the other hand, subsequent standards (2.2.1 and 2.2.2) focus on describing the desired measurement conditions for the prevention programme effectiveness (Table 5). The first of these two standards recommends selecting the correct indices which are used to determine that the intervention is effective. Many indices measure attitudes towards psychoactive substance use. However, one should bear in mind that attitudes are not the same as using those substances. A programme can only be deemed effective if the analysis results confirm its effectiveness. The second standard concerns change continuity. For instance, patients who complete an addiction therapy programme can experience a considerable improvement in their quality of life, measured with psychological tests. However, at this stage, it cannot be guaranteed that they have recovered and will not revert to their addition. Only an analysis conducted after a certain amount of time (deferred analysis), in natural circumstances, will make it possible to verify if the change is permanent and what impact it has on recovery.

Table 5. Area 2 – Characteristics of measured variables

Standard area	**2.2. The results – what is measured**
Standard	2.2.1 The results of a public health or behavioural intervention must be measured
Standard	2.2.2 In the case of results which can change over time, at least one long-term observation must be conducted after a specific time interval following the completion of the intervention (e.g. at least 6 months after the intervention, although this period may vary for different types of prevention programmes or interventions)
Desired standard level	It is also desirable, albeit not necessary, to include proximal outcomes (i.e. mediators).
Desired standard level	It is desirable to include the measurement of implementation quality
Desired standard level	It is desirable to measure the potential side effects or iatrogenic effects

Source: Own elaboration based on Flay et al. (2005)

The area described is supplemented by a description of the desired standard level. It defines measures which are recommended in order to improve the quality of the analysis, but are not absolutely necessary. The recommendation is to use mediators and moderators of programme results, i.e. variables that explain the mechanisms leading to positive results. It provides deeper insight into why the programme is effective. The second postulate concerns inclusion of information about the quality of programme implementation in the effectiveness analysis. Sometimes, incorrect replication can affect the results (e.g. if the implementers are insufficiently trained). The last recommendation highlights the need to control for negative effects of the programme. It is a reminder that side effects should also be analysed because otherwise (without an enquiry), there is no information available on the subject. For example, content that is inadequate for certain ages can encourage psychoactive substance use because it gives rise to curiosity among the target audience.

The third part of the second area focuses on the description of the measurement method (cf. Table 6). The adopted analysis structure should meet the generally accepted conditions of accuracy and reliability. The essence of these standards is ensuring that the tools used in the analysis are accurate, i.e. that they measure precisely what they are supposed to measure. The second criterion to be fulfilled by the analysis is reliability. A measurement is reliable if similar responses are obtained when the analysis is repeated. Additionally, the authors of the standards encourage use of different evaluation perspectives, i.e. responses from different groups with access to information about the programme (e.g. the perspectives of pupils, parents and teachers). It can increase confidence in both validity and credibility of the analysis. The last standard from the second area (2.3.4) refers to the risk of biased responses (the so-called confirmation bias). Individuals who developed or implemented the programme will focus on its advantages and it will be more difficult for them to notice its drawbacks, which makes their assessments unreliable. According to the described standard, data from individuals not involved in programme implementation should be obtained.

Table 6. Area 2 – Characteristics of psychometric properties

Standard area	2.3. How the results are measured
Standard	2.3.1 Measurements must be psychometrically correct
Standard	2.3.2 Construct accuracy – correct measures of the target behaviour should be applied, according to definitions contained in relevant literature
Standard	2.3.3 Reliability – internal consistency (alpha), test-retest reliability and/or reliability between the evaluators
Desired standard level	It is desirable to use multiple measures and/or sources (multiple evaluation perspectives)
Standard	2.3.4 If there is a risk of the responses being biased, there must be at least one form of data (measure) collected by individuals other than those delivering the intervention. This is recommended even for standardised tests.

Source: Own elaboration based on Flay et al. (2005)

The third area is dedicated to correct elaboration of the collected research material. It comprises three parts – clarity of causal reasoning, control of results and randomised group selection. The first standard recommends an analysis model which allows for identification of causal relations between risk factors, protective factors and risky and problematic behaviours (Table 7).

Table 7. Area 3 – Research methodology

Standard area	3. Clarity of causal reasoning
Standard	The research project should identify the strongest possible causal relations

Source: Own elaboration based on Flay et al. (2005)

Such relations should be sought in the group subjected to the effects of the programme, but also in a comparative group (preferably control group), in which the programme is not implemented (standard 3.1.1; Table 8). This way, it is possible to assume that the changes observed are the result of the prevention measure.

Table 8. Area 3 – Characteristics of analysis conclusions

Standard area	3.1. Control (control or comparative groups)
Standard	3.1.1 The project must feature at least one control group that is not subjected to the tested intervention

Source: Own elaboration based on Flay et al. (2005)

Capturing the effect of a programme is an extremely difficult task. It requires demonstrating that the change is a consequence of the prevention measure, not a developmental change or the result of other influences, such as school education or family upbringing. Hence, B. Flay et al. (2005) propose standards which encourage the use of statistical solutions that make adjustments for measurement errors (standard 3.2). It includes selection of respondents. Another key aspect appears to be ensuring the right composition of comparative groups – their participants should ideally be selected randomly (standard 3.2.1; Table 9). For example, a very easy mistake to make is inviting volunteers from among pupils who have not been included in the programme. One selection criterion is met, but the results are altered by the second criterion because it is unknown who will volunteer and what their motivations may be. The volunteers certainly will not be randomly chosen people, which can alter the analysis results. It should be noted that random selection in effectiveness analyses is not only a scientific requirement. There are also important ethical arguments for it – solutions which have not been verified or are harmful should not be offered. This is why strict scientific standards (including random selection, whenever possible) are applied whenever research concerns development and health in order to maximise benefits for the society.

Table 9. Area 3 – Regularities in selection of research participants

Standard area	3.2. Selection of people for analysed groups
Standard	3.2 The adopted analysis model must minimise the statistical error in estimating relative effects of the intervention and allow for a statistically justified declaration of confidence in the results
Standard	3.2.1 Randomly selected comparative groups are required to generate statistically objective estimates of the effects of most types of prevention measures

Standard	3.2.2 For certain types of intervention (in particular ones with wide coverage, e.g. a national health policy or nationwide programmes), where randomisation is impractical or impossible, it is permitted to use repeated time series without randomisation
Standard	3.2.3 Well-implemented projects should make use of regression discontinuity design
Standard	3.2.4 Analysis models with a control group and repeated measurements are particularly important when programme participants were randomly selected

Source: Own elaboration based on Flay et al. (2005)

Where random selection is extremely difficult or even impossible, it is permitted to replace it with research repeated multiple times without randomisation (standard 3.2.2; see Table 9). This procedure is used in nationwide trials or national policies. Analyses spread over time allow for certain regularities to be established on the timeline – so-called trends in the results. If the prevention measure has a significant effect during that time, a given trend should change. A different solution is to compare archival data and time series – naturally, provided that nothing that could functionally affect the society (e.g. a pandemic or war) has occurred in the meantime. Such prominent events change the way many people operate and can therefore affect the reported problems. According to B. Flay et al. (2005, p. 159): "time series analyses and archival data can provide the means to test the effectiveness of interventions which are based on population over time, and eventually by comparing places covered by intervention and places not covered by intervention".

The authors suggest using regression discontinuity design to measure effectiveness (standard 3.2.3; see Table 9). In regression discontinuity design, the rule is to initially determine the value of a trait, attitude or behaviour of pupils which is an indication for participation in the programme. One example can be overall problematic behaviour index of pupils and the decision to apply the prevention measures to pupils whose index level exceeds the 75th percentile. This group becomes the experimental group in the model, while pupils with a lower value of the problematic behaviour

index form the control group. Both group undergo a pre-test and a post--test. Next, regression analysis is performed for each group to determine the correlation between the results of the post-test and pre-test. The next step is to compare the regression lines at the "cut-off" point. In the example provided above, it was the 75th percentile of the overall problematic behaviour index. This comparison makes it possible to estimate the difference between the groups and determine the measure's effectiveness. Although regression discontinuity design is a precise method, it requires extensive knowledge in the field of statistical analyses and proper planning of the measurement method.

The last standard of the third area (3.2.4) concerns random selection of the analysed group (see Table 9). The best quality of effectiveness analyses is ensured by analysis models based on random selection of participants for the group implementing a given prevention programme and the control group (not participating in the programme). This is due to the fact that in the absence of random selection, certain traits of pupils are frequently not measured, even though they increase the probability of participation in the programme. For instance, a programme that develops emotional maturity might be more frequently chosen by pupils who find it difficult to understand and express emotions. From the point of view of statistical analyses, it disrupts the independence of data obtained in the analysis. Hence, when analysing the effectiveness of a given measure, it is best to observe the rule of random participation.

The fourth area concerns presentation of the effectiveness of analyses in the form of a report. It only contains one standard and one desired standard level (standard 4; Table 10). The key objective of this standard is to ensure a precise description of the sample and how it was obtained. It is meant to determine how well the analysis sample represents the population in which the programme was implemented. This condition is necessary to decide whether it is possible to generalise the results obtained and apply them to the entire population targeted by the programme or other prevention measure. It is a crucial component of effectiveness evaluation.

Table 10. Area 4 – The possibility to generalise the results

Standard area	4. The sample is defined
Standard	The report must define the sample and how it is obtained.
Desired standard level	It is desirable for sub-group analyses to demonstrate the effectiveness for the sub-groups in the sample – in terms of gender, ethnic/racial origin, risk levels

Source: Own elaboration based on Flay et al. (2005)

The aforementioned description should depict, in particular, the research group and method of its recruitment. The fourth area also includes a recommended standard, which suggests checking for the effects of a programme not only in the analysed group, but also in sub-groups. Sometimes, if the main effect is minor, there can be a major effect for a specific sub-group. Such an analysis is justified in particular when looking for effects in groups with different levels of risky behaviours or when the programme is envisaged for target groups selected based on the level of development.

The fifth and last area of standardisation concerns statistical analysis and translating the results into practical decisions (Table 11). It comprises five parts dedicated to statistical analysis, description of the results, translation of the results into practice, sustaining the effect over time and the programme's dissemination potential. The first part is dedicated to the statistical framework which should be adopted in order to consider the results reliable. Hence, standard 5.1.1 obliges the researcher to plan statistical analyses in advance and to proceed in accordance with that plan. The authors of the standards recommend that all results be thoroughly described – both those that indicate effectiveness of the prevention programme and those which suggest that it has negative effects or absence of any effects (neither positive nor negative). The next standard (5.1.2) recommends using data about all individuals covered by the analysis (both the experimental group and control/comparative groups). The only exception applies to individuals who have withdrawn from the programme, although – if possible – the reasons for withdrawal should be obtained to see whether or not the withdrawal results from the prevention measure. Standard 5.1.3 concerns controlling for differences between the

compared groups at the pre-test level in order to verify whether the groups have been correctly selected. It also allows for adjustments, if any need to be made. Otherwise, the effects of the programme could be questioned. When analysing multiple results, adjustments for multiple comparisons should be applied, i.e. statistical significance adjustments (standard 5.1.4). One should take into account that during the analysis, the project participants and control group participants can opt out, which may lead to unreliable results. The risk of such measurement errors is present even if attrition is comparable in both groups.

An additional recommendation is to control for and adequately respond to loss of data from sources other than attrition. It can apply to participants opting out at subsequent measurement stages or those who only participate in selected elements of the prevention measures. When this is the case, appropriate statistical adjustments should be applied (standard 5.1.5).

Table 11. Area 5 – Precise description of the results

Standard area	5.1. Statistical analysis
Standard	5.1.1 Statistical analysis must be based on the project and its goal should be to obtain a statistically impartial estimate of relative effects of the intervention and statistically justified decision about the reliability of the results
Standard	5.1.2 When testing the main effects, the analysis must include the level of randomisation and cover all cases assigned to intervention and control conditions
Standard	5.1.3 One should verify if the compared groups differ prior to the prevention measure. If they do, adjustments should be made
Standard	5.1.4 When multiple results are analysed, adjustment for multiple comparisons should be taken into account, i.e. statistical significance adjustment
Standard	5.1.5 It is crucial to apply analyses aimed at minimising the possibility of the observed effects being significantly biased due to the cancellation of effects
Desired standard level	It is desirable for the scope and patterns of missing data from sources other than attrition to be reported and appropriately controlled

Source: Own elaboration based on Flay et al. (2005)

The second part of the fifth area (Table 12) focuses on the principles applied to the description of the effects. The first standard in that part (5.2.1) states that the results must be described for each effect measured, regardless of whether they are positive, insignificant or negative. A programme can only be deemed effective if statistical evidence for positive effects of a prevention measure can be demonstrated (standard 5.2.2). If multiple indices are used, most or all effects should align with the anticipated trend and at least one of them must be statistically significant. Even if the statistical data confirm effectiveness of the prevention programme, it must not have negative impact on any aspect of the addressees' lives (standard 5.2.3).

Table 12. Area 5 – Precise description of the results

Standard area	**5.2. Statistically significant effects**
Standard	5.2.1 The results must be described for each effect measured, regardless of whether they are positive, insignificant or negative
Standard	5.2.2 Effectiveness can only be declared for constructs aligned with the adopted coherent model of statistical reasoning, which confirm significant positive effects
Standard	5.2.3 If declaring effectiveness, there can be no serious negative (iatrogenic) impact on the participants

Source: Own elaboration based on Flay et al. (2005

The third part of the fifth area focuses on the practical value of the evaluated programme, i.e. description of the type of impact on the addressees to be expected when implementing a given prevention programme (standard 5.3; Table 13). In other words – what it brings to a young person's life. Naturally, this description should be supported by analysis results. The objective is to document the basis for replicating the programme and funding its subsequent editions. When it comes to additional expectations, the recommendation is to include information about the costs of programme implementation and the calculated cost-efficiency (i.e. to what extent the programme pays off when comparing the effects to the costs incurred).

Table 13. Area 5 – Translating the results into practice

Standard area	5.3. Practical value
Standard	It is necessary to demonstrate practical significance in terms of the effect on health or public health
Desired standard level	It is desirable to have/report information on the costs and cost-efficiency

Source: Own elaboration based on Flay et al. (2005)

The majority of described or even recommended prevention programmes fail to include cost-efficiency in their effectiveness analyses because the evaluators focus on testing the causal mechanisms. However, potential costs to be incurred when the intervention is disseminated on a large scale should be considered even for highly effective programmes.

The next part of the fifth area and the next standard (5.4; Table 14) concern durability of the effects of the evaluated programme. In prevention (including therapeutic) measures, it is important not only to achieve changes, but also to maintain them over time, especially if the intervention is costly. This is why standard 5.4 recommends that research continue for some time after the intervention has been completed to determine the durability of the achieved effect.

Table 14. Area 5 – Reproducibility of analyses

Standard area	5.4. Effect duration
Standard	In the case of results which can recede over time, there must be information indicating at least one long-term observation after a specific time interval following the completion of the intervention (e.g. at least 6 months later)

Source: Own elaboration based on Flay et al. (2005)

The last part of the fifth area concerns aspects of programme replication or dissemination (Table 15); it should be noted that the authors of the standards have stricter requirements for dissemination than for declaring the intervention effective or efficient. In order for a programme to be deemed effective, it is necessary to demonstrate consistent results of at least two

different analyses. Naturally, they must exhibit high methodological and statistical quality. This demanding standard is mitigated by the researchers, who additionally state that "for certain types of intervention, it may be necessary to use of this standard flexibly until a sufficiently long time has passed to allow for subsequent analyses verifying compliance with this strict standard". (Flay et al., 2005, p. 162)

Table 15. Area 5 – Programme dissemination

Standard area	5.5. Programme or policy replication
Standard	5.5.1 Consistent results of at least two high-quality analyses/repetitions are required. They must meet all the above criteria and each of them must have adequate statistical significance
Desired standard level	A larger number of analyses is desirable. It is also recommended for at least one replication to be conducted by independent researchers
Standard	5.5.2 when more than two analyses of effectiveness and/or efficiency are available, the predominant evidence must be in line with the evidence from two top-quality analyses

Source: Own elaboration based on Flay et al. (2005)

The standard is supplemented with a recommendation of a larger number of analyses. Moreover, at least one replication should be conducted by independent researchers. Apart from programme replication, the authors of the standards also encourage replication of its effectiveness analysis in to gain additional knowledge as to whether the effectiveness changes. The last standard in this area (5.5.2) states that if there are more than two analyses of effectiveness and/or efficiency, the results of the analyses with the highest methodological and statistical quality should be taken into account.

Chapter 3
Methodology of the analysis

This chapter describes the assumptions used in the conducted analysis, its subject matter and the variables measured. It presents the tools applied, the characteristics of the respondents and methods of statistical analysis of the collected data. Detailed information about the theoretical concepts which served as the basis for the proprietary analyses, along with a review of those theories, is included in an earlier publication developed as part of the project "Profilaktyka na miarę" ["Tailor-made prevention"]. That publication describes the concepts of problematic and risky behaviours, models of protective factors and risk factors, as well as the results of analyses carried out on a representative group of Polish youth. (Poleszak, Kata, 2023)

3.1. Analysis assumptions and objectives

The overarching objective of the analyses, the results of which are presented in the following chapters, is to determine changes in the level of engagement in problematic behaviours by young people attending school as well as protective factors and risk factors associated with those behaviours. These changes are cross-checked against prevention education activities that the pupils have participated in. Thusly defined objectives of the analysis are in line with the standards of effectiveness analysis listed in chapter two. One of the standards highlights the value of combining the outcome variables – the pupils' problematic behaviours – with their potential causes: protective factors and risk factors. (cf. Flay et al., 2005)

As part of the analyses, measurements were taken twice in groups of primary school pupils (grades 4–8) and secondary school pupils, during the period from October to December of school year 2022/23 and during the same period of school year 2023/24. The main theoretical basis for the analysis is the problem behaviour theory of R. and S. Jessor (1987, 2014, 2018). According to the theory, young people's problematic behaviours re-

sult from interactions between a number of factors describing the pupils' personality, their family and school environment, as well as pro-social or pro-health measures. Problematic behaviours themselves are behaviours which are contrary to social norms, can pose a risk to young people's health and development and cause a reaction of important individuals. (Gaś, 2006) Risk factors are the environment's or a person's traits that increase the probability of engagement in problematic behaviours or the frequency of such behaviours. Protective factors play the opposite role – they mitigate the impact of risk factors and reduce the probability of problems. (Jessor, 2014; Poleszak, Kata, 2023) The following is a list of analysed factors and behaviours. The interactivity of the theory and its systemic nature served as the basis for selecting statistical analyses which are described in one of the subsequent sections of this chapter.

1. Protective factors included in the analysis:
    - school environment;
    - peer support;
    - support of educators;
    - supportive attitude of teachers;
    - parental control;
    - common activities with parents;
    - attitude towards learning and school obligations;
    - belief that risky behaviours are not permitted;
    - cognitive curiosity;
    - engagement in extracurricular activity.
2. Risk factors:
    - examples of risky behaviours among peers;
    - approval of peers' risky behaviours;
    - family model of risky behaviours;
    - access to psychoactive substances;
    - experience of violence;
    - experience of cyberbullying;
    - symptoms of mental crisis;
    - low self-esteem;
    - unconstructive methods of coping with stress;
    - skipping school without a justification;
    - peer exclusion;

3. Problematic behaviours:
    - overall problematic behaviour index;
    - problematic internet use;
    - risky online behaviour.

In order to be effective, prevention education measures at schools and educational institutions should be based on standards that ensure high quality of implementation. One of them is adjusting the support to the level of pupils' engagement in problematic behaviours (e.g. Wojcieszek, Szymańska, 2003). It results in different types of prevention: universal, selective and indicated, as well as primary, secondary and tertiary. It is also crucial for pupils to be involved in the activities offered to them and aware of their objectives and meaning (i.a. Wojcieszek, Szymańska, 2003; Yalom, Leszcz, 2006).

Based on these assumptions, the following research questions were formulated. These questions determine the direction of analyses and further specify the research objective. They concern two groups: primary school pupils of grades 4–8 and secondary school pupils. These groups were analysed separately, among others due to different times of initiation of problematic behaviours and different frequencies of engagement in such behaviours. (Ostaszewski, Kucharski, Stokwiszewski, 2021; Poleszak, Kata, 2023)

1. What type of prevention education activities have pupils with different levels of engagement in problematic behaviours participated in and what is the pupils' opinion about these activities?

2. Are there differences in protective factors, risk factors and problematic behaviours in groups of pupils with various level of engagement in problematic behaviour between the first and second measurement?

3. What is the correlation between changes in protective factors, risk factors and problematic behaviours of pupils and their participation in prevention education activities?

The first research question is related with the assumption that there will be differences in terms of the number and type of prevention measures the pupils have taken part in between pupils who engage in problematic behaviours more often and their peers with a low level of engagement in such behaviours. It is assumed that pupils with a high problem index have participated in a different type of activity and will have different opinions about that activity. Moreover, the effects of prevention education measures should vary depending on the severity and type of problematic behaviours, which is covered by the second research question. This question concerns changes in protective factors, risk factors and frequency of engagement in problematic behaviours. It can be assumed that pupils with a low problematic behaviour index will be more likely to participate in universal prevention, aimed at reinforcing protective factors. Therefore, changes within a period of one school year can mainly take place in this type of variables. On the other hand, for young people with a high level of risk, there will be more changes demonstrating the reduction of risk factors. The answer to the third question will provide information about the mutual interactions between the variables describing pupils and their environment. The goal is to verify whether school activities aimed at reinforcing protective factors reduce the risks arising from risk factors and the frequency of problematic behaviours. In other words, the changes observed in protective features should entail adequate changes in risks.

The next sub-chapter describes the tool used to measure protective factors, risk factors and problematic behaviours in pupils.

3.2. Research tools

Both measurements were taken using tools recommended by the Ministry of National Education for diagnosing demand for prevention education measures in schools, as well as measurements of the aforementioned protective factors, risk factors and problematic behaviours. These tools were originally created as part of a project commissioned by the Ministry of National Education: "SYSTEM ODDZIAŁYWAŃ PROFILAKTYCZNYCH W POLSCE – stan i rekomendacje dla zwiększenia skuteczności i efektywności planowania i realizowania działań profilaktycznych w mikro i makro skali" ["SYSTEM OF PREVENTION MEASURES IN POLAND – sta-

tus and recommendations to improve the effectiveness and efficiency of prevention measure planning and implementation on a micro and macro scale"]. As a result of the first edition of analyses in the project (Poleszak, Kata, 2023) this publication comes from, the tools were modified and their psychometric properties were scrutinised. Single-dimensionality of scales measuring protective factors, risk factors and problematic behaviours was verified through factor analysis. Information about reliability was included in the appendix to the book, which also contains definitions of individual dimensions and information about the number of questions assigned to each dimension. The theoretical basis for the tool is Jessors' problem behaviour theory (1987, 2014, 2018), described more extensively in the first publication. (Poleszak, Kata, 2023) In addition to measurement of the factors and frequency of the behaviours, pupils answered questions about their gender, age, place of residence, origin, form of education and type of school they attend (the last question was only answered by secondary school pupils). The first stage of the analysis, carried out using a nationwide, representative group of pupils, also allowed for norms that enable conversion of the results to T-scores to be estimated. These norms were used in the following chapter, in the description of pupils with various severity of risky behaviours. Thanks to this type of standardisation, it was possible to compare individual factors.

It should be noted that the survey versions received by the analysed groups – primary school pupils of grades 4–8 and secondary school pupils – differed when it comes to several questions and scales. The reason for these differences was the necessity to adapt questions to the age of survey participants. Social and emotional competences were only measured in the younger group because they are particularly important for development tasks during the initial stage of puberty. (Raimundo et al., 2012) Differences also concerned behaviours making up the overall problematic behaviour index. In the case of older pupils, the index included questions about gambling and browsing erotic websites due to later age of initiation of such behaviours. (Poleszak, Kata, 2023)

Some variables, namely: emotional and social competences, cognitive curiosity, peer exclusion or symptoms of mental crisis were measured using separate proprietary tools or adapted tools, namely: Scale of So-

cial and Emotional Competences (proprietary tool), Cognitive Curiosity Survey (Polish adaptation by the authors of this publication; for information about the original tool, see Preckel, 2014), Peer Exclusion Scale (proprietary tool) and Scale of Symptoms of Mental Crisis (Polish adaptation of the authors of this publication; for information about the original, see Orgilés et al., 2020). These tools have been described more extensively in other publications. Information about their reliability and definitions of the measured characteristics are included in the appendix.

Pupils' declarations and opinions on the prevention education activities they have participated in during the school year between the first and the second survey were collected using several closed-ended questions. They included information about: the number of class hours dedicated to a given subject in the field of health and prevention, the form of activities (for the whole school, class, a smaller group), their organisers (teachers, experts), as well as how useful these activities were.

3.3. Characteristics of the analysed groups

The analysed groups are primary school pupils of grades 4–8 and secondary school pupils. The data were collected in the groups during two measurements, taken from October to December of the school year 2022/23 and during the same period one year later. The analysis covered answers given by individuals who participated in both stages – 1,450 primary school pupils and 1,342 secondary school pupils in total. In connection with the adopted research objectives, the pupils were divided into groups with different characteristics of engagement in problematic behaviours. These groups were compared with each other. The method of division into groups is based on the principle of mutual similarity of the respondents in terms of how they answered questions about the frequency of problematic behaviours. The resulting groups of pupils share similarities in terms of psychoactive substance use and violence. In the case of secondary school pupils, the similarities also include browsing erotic websites and gambling. The classification method – latent class analysis – is described in detail in the final part of the chapter. When implementing this method, several types of division were tested – from a single group to a solution involving six groups.

The choice of the solutions was based on adequacy in relation to the collected data, while relying on statistical indices of goodness-of-fit of the solution to the results. These indices, along with the obtained values, are presented in the following chapter. The decision to split the respondents into groups with different levels of engagement in problematic behaviours is also based on the aforementioned arguments associated with implementation of prevention education measures. Young people with a high risky behaviour index should experience a different type of changes as a result of prevention at school. It can be assumed that these changes will include decreased level of engagement in problematic behaviours and diminished risk factors. The groups were established based on responses given during the first stage of the study. The types and frequency of problematic behaviours in each group are described in the chapter dedicated to analysis of results.

3.3.1. Primary school pupils of grades 4–8

Primary school pupils of grades 4–8 are divided into three groups with different levels of engagement in problematic behaviours. The first group, comprising n = 858 individuals (i.e. 59.2% of respondents), has little to no experience with psychoactive substance use and violence. In the following tables, this group was labelled as LPBps – low level of engagement in problematic behaviours in primary school (ps) pupils. The second group, with n = 454 individuals (31.3% of all respondents), is characterised by moderate frequency of engagement in problematic behaviours – primarily use of violence (the label is MPBps – moderate level of engagement in problematic behaviours). The third group comprises n = 138 pupils. Compared with the two other groups, they exhibit the most frequent use of substances or violence (label: HPBps). The numbers of group participants are unequal due to the groups' share in the total population of pupils. Information about this share is an additional advantage of the applied respondent classification method (latent class analysis).

Unless stated otherwise, all tables in the methodological chapter and in the results analysis are own studies – therefore, the source was not indicated under those tables.

Girls make up the majority of every group. They are 63.4% of pupils with a low level of engagement in problematic behaviours, 51.45% in the moderate group and 50.44% in the group with a high level of engagement (Table 16). There is a statistically significant difference between the group with a low level of engagement in problematic behaviours and two other groups. The prevalence of girls among individuals who rarely engage in problematic behaviours is higher than in the compared groups (chi = 23.371, df = 2, p < 0.001).

Table 16. Gender of primary school pupils of grades 4–8

Gender	LPBps	MPBps	HPBps	Total	Comparison	
	%	%	%	%	χ^2	p
Girls	$63{,}40_a$	$51{,}45_b$	$50{,}44_b$	58,21	23,371	< 0,001
Boys	$36{,}60_a$	$48{,}55_b$	$49{,}56_b$	41,79		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The average age of the surveyed pupils is 11.2 years. Although the differences between the groups are small, individuals in the third group are older, which is a statistically significant difference (Kruskal–Wallis H test H = 68.307, df = 2, p < 0.001; Table 17).

Table 17. Age of primary school pupils of grades 4–8

	LPBps		MPBps		HPBps		Total		Comparison	
	M	SD	M	SD	M	SD	M	SD	H	p
Age	11,1	1,1	11,3	1,1	11,9	1,3	11,18	1,17	68,307	< 0,001

The groups do not differ significantly in terms of where they live. In every group, the predominant place of residence is a village (46.97% for LPB, 44.93% for MPB and 50.72% for HBP; Table 18), while the least frequently declared locality is a city with more than 100 thousand residents (a total of 22.55%).

Table 18. Place of residence of primary school pupils of grades 4–8

Place of residence	LPBps	MPBps	HPBps	Total	Comparison	
	%	%	%	%	χ^2	p
Village	$46{,}97_a$	$44{,}93_a$	$50{,}72_a$	46,69		
Town with fewer than 100 thousand residents	$32{,}28_a$	$30{,}62_a$	$21{,}74_a$	30,76	8,584	0,072
City with more than 100 thousand residents	$20{,}75_a$	$24{,}45_a$	$20{,}75_a$	22,55		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The overwhelming majority of pupils come from Poland (a total of 96.55%). Approximately 2% are pupils of Ukrainian nationality, while 1.5% of respondents indicated a different country of origin. Nationality correlates with significant differences between the groups, in particular when it comes to proportions among pupils with a high level of engagement in risky behaviours (chi = 15.076, df = 2, p = 0.005). However, these differences are small and amount to a few percentage points (Table 19).

Table 19. Country of origin of primary school pupils of grades 4–8

Place of residence	LPBps	MPBps	HPBps	Total	Comparison	
	%	%	%	%	χ^2	p
Poland	$96{,}50_a$	$98{,}02_b$	$92{,}03_a$	96,55		
Ukraine	$2{,}21_a$	$0{,}44_a$	$5{,}07_b$	1,93	15,076	0,005
Other	$1{,}28_a$	$1{,}54_a$	$2{,}90_a$	1,52		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The surveyed pupils attend school together with their entire class (96.55% in total). Other forms of education apply to a small percentage of individuals (1.93% of them learn individually at school, while 1.52% are educated at home). The form of education does not differ materially between the groups (Table 20).

Table 20. Form of education of primary school pupils of grades 4–8

Form of education	LPBps	MPBps	HPBps	Total	Comparison	
	%	%	%	%	χ^2	p
At school, with the entire class	$97{,}20_a$	$98{,}68_a$	$97{,}83_a$	96,55		
At school, individually	$1{,}28_a$	$0{,}88_a$	$1{,}45_a$	1,93	3,879	0,423
At home	$1{,}52_a$	$0{,}44_a$	$0{,}72_a$	1,52		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

Most pupils are in the care of both parents (83.72% of all respondents). 12.69% of them live with one parent, while the least frequent option declared during the school year is living with someone other than their parents (0.88%; Table 21).

Table 21. Living conditions (care) of primary school pupils of grades 4–8

Living conditions (care)	LPBps	MPBps	HPBps	Total	Comparison	
	%	%	%	%	χ^2	p
With both parents	$85{,}20_a$	$81{,}94_a$	$80{,}43_a$	83,72		
With one of the parents	$11{,}54_a$	$14{,}10_a$	$15{,}22_a$	12,69		
With one of the parents interchangeably	$3{,}03_a$	$3{,}08_a$	$2{,}90_a$	3,08	9,405	0,309
With someone else	$0{,}23_a$	$0{,}88_a$	$1{,}44_a$	0,88		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The following section presents basic information about young people attending secondary schools.

3.3.2. Secondary school pupils

The procedure for identifying groups of pupils with different levels of engagement in problematic behaviours resulted in a solution with three sub-groups, analogically to the situation in grades 4–8 of primary school. The group of pupils with the lowest or extremely rare engagement in proble-

matic behaviours comprises n = 534 individuals, amounting to 39.8% of all pupils. In the following tables, this group was labelled as LPBss – low level of engagement in problematic behaviours in secondary school (ss) pupils. Moderate engagement is exhibited by n = 440 pupils, who make up 32.8% of the population (labelled as MPBss). The highest level of engagement in problematic behaviours is observed in n = 368 pupils, making up 27.4% of young people from secondary schools (labelled as HPBss).

Girls are the majority in every group – 54.4% in total. Boys make up 45.6% of surveyed pupils. Gender does not make a significant difference (chi = 0.875, p = 0.646; Table 22).

Table 22. Gender of secondary school pupils

Gender	LPBss	MPBss	HPBss	Total	Comparison	
	%	%	%	%	χ^2	p
Girls	$54{,}68_a$	$55{,}68_b$	$52{,}45_b$	54,40	0,875	0,646
Boys	$45{,}32_a$	$44{,}32_b$	$47{,}55_b$	45,60		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

Age differences between the groups are significant (H = 150.307, df = 2, p < 0.001), although they only amount to several months. The oldest individuals exhibit a high level of engagement in problematic behaviours (M = 16.2), while the youngest ones – low level (M = 15.7; Table 23).

Table 23. Age of secondary school pupils

	LPBss		MPBss		HPBss		Total		Comparison	
	M	SD	M	SD	M	SD	M	SD	H	p
Age	15,7	1,2	15,8	1,1	16,2	1,1	15,7	1,1	150,307	< 0,001

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The next Table presents information about the pupils' place of residence (Table 24). This variable does not differ significantly between the groups (chi = 1.818, df = 4, p = 0.769). In each of them, respondents typically declared that they live in a village (43.22% in total).

Table 24. Place of residence of secondary school pupils

Place of residence	LPBss	MPBss	HPBss	Total	Comparison	
	%	%	%	%	χ^2	p
Village	$44{,}76_a$	$42{,}50_a$	$41{,}85_a$	43,22		
Town with fewer than 100 thousand residents	$30{,}90_a$	$31{,}36_a$	$34{,}24_a$	31,97	1,818	0,769
City with more than 100 thousand residents	$24{,}34_a$	$26{,}14_a$	$23{,}91_a$	24,81		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The majority of the respondents were Polish – 98.29% of all pupils. Ukrainian origin was declared by less than 1% of pupils, while a different nationality was selected by approx. 1% of young people. The country of origin does not differ between the groups in a statistically significant manner (chi = 2.846, df = 4, p = 0.584, Table 25).

Table 25. Country of origin of secondary school pupils

Place of residence	LPBss	MPBss	HPBss	Total	Comparison	
	%	%	%	%	χ^2	p
Poland	$98{,}31_a$	$97{,}95_a$	$98{,}31_a$	98,29		
Ukraine	$0{,}37_a$	$1{,}14_a$	$0{,}37_a$	0,67	2,846	0,584
Other	$1{,}31_a$	$0{,}91_a$	$1{,}31_a$	1,04		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The form of education the pupils partake in also does not differ significantly between the groups (chi = 7.203, df = 4, p = 0.126). In each group, the most common form is education at school, together with the whole class (98.51% in total; Table 26).

Table 26. Form of education of secondary school pupils

Form of education	LPBss	MPBss	HPBss	Total	Comparison	
	%	%	%	%	χ^2	p
At school, with the entire class	$99{,}25_a$	$98{,}18_a$	$97{,}83_a$	98,51		
At school, individually	$0{,}37_a$	$1{,}82_a$	$1{,}90_a$	1,27	7,203	0,126
At home	$0{,}37_a$	$0{,}00_a$	$0{,}27_a$	0,22		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

Vocational school is a type of educational institution which appears the most frequently in the group with a high level of engagement in problematic behaviours (11.14% of pupils in this groups attend such a school, while in the MPB group it is 7.95% and in the LPB group – 5.24%). On the other hand, a general secondary school is indicated more frequently in the LPB group (53.75%) than in the two other groups. In general, in terms of percentage breakdown of school types, the predominant one is general secondary school (48.44%), followed by technical secondary school (43.82%), with the fewest respondents attending vocational secondary schools (7.75% in total). Details are presented in Table 27.

Table 27. Type of school attended by secondary school pupils

School type	LPBss	MPBss	HPBss	Total	Comparison	
	%	%	%	%	χ^2	p
Vocational school	$5{,}24_{a,b}$	$7{,}95_{b}$	$11{,}14_{a}$	7,75		
Technical secondary school	$41{,}01_{a}$	$46{,}59_{a}$	$44{,}57_{a}$	43,82	16,813	0,002
General secondary school	$53{,}75_{a}$	$45{,}45_{a}$	$44{,}29_{b}$	48,44		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The last trait concerns the pupils' living conditions in the course of school education, which includes the pupil's caregiver (Table 28). Pupils typically declare that they live with both parents (75.04% of all pupils). 16.84% of respondents live with one of the parents. More than 5% of them stated that they live in a rented room or a dormitory. This trait does not differ significantly between the groups (chi = 11.190, df = 8, p = 0.191).

Table 28. Living conditions (care) of secondary school pupils

Living conditions (care)	LPBss	MPBss	HPBss	Total	Comparison	
	%	%	%	%	χ^2	p
With both parents	$79{,}21_{a}$	$72{,}27_{a}$	$72{,}28_{a}$	75,04		
With one of the parents	$14{,}79_{a}$	$19{,}09_{a}$	$17{,}12_{a}$	16,84		
With one of the parents interchangeably	$1{,}50_{a}$	$2{,}05_{a}$	$2{,}17_{a}$	1,86	11,190	0,191
With someone else	$0{,}94_{a}$	$1{,}36_{a}$	$1{,}36_{a}$	1,19		
In a rented room or dormitory	$3{,}56_{a}$	$5{,}23_{a}$	$7{,}07_{a}$	5,07		

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The following sub-chapter describes the research procedure and the applied methods of statistical data analysis.

3.4. Research procedure and data analysis methodologies

Two stages of analysis were carried out over a period of one year as part of the "Tailor-made prevention" project. The project, implemented by the Edukacja 3.0 Association at the request of the Ministry of National Education, is a part of a task within the scope of public help, titled: "Pozytywna szkoła – realizacja projektów i programów edukacyjnych, wychowawczych, interwencyjnych oraz profilaktycznych opartych na podstawach naukowych, w tym programów profilaktyki uniwersalnej, wskazującej i selektywnej" ["Positive school – implementation of educational, intervention and prevention projects and programmes based on science, including universal, selective and indicated prevention programmes"].

Analyses as part of the project were supervised by the country coordinator, who cooperated with school coordinators. The tasks of school coordinators included:

1) at the first stage of analysis (November–December 2022):
    - participation in preparatory trainings dedicated to organisational, technical and substantive aspects of the analysis;
    - estimation of the required sample size at the school level, using the tools provided by the country coordinator;
    - random selection of classes that would participate in the analysis;
    - informing the participants about the objective of the analysis, implementation conditions, anonymity and voluntary participation;
    - preparation and distribution of tokens – individual survey passwords;
    - preparation of the computer room where the pupils would be able to complete the surveys online;
    - supervision over correct implementation of the analysis;
    - reporting on the implementation of the analysis to the country coordinator;
2) at the second stage of analysis (November–December 2023):
    - tasks associated with organisation of the analysis, analogically to the first stage;
    - collecting information about prevention education measures implemented at school over the last 12 months and submission of

these data to the country coordinator;
- repeating the measurement with the largest possible group of pupils who participated in the first stage of the analysis.

As a result of repeated measurements, data suitable for comparison were collected from primary and secondary school pupils in the numbers stated in the characteristics of analysed individuals. Similarly to the first stage, the survey was conducted in computer rooms at schools. Pupils took between 30 minutes and one hour to answer the questions. Individual tokens used to access the surveys allowed the pupils to take breaks if necessary and resume the survey from the last answered question. Surveys and responses were stored on a secured Diagnostic Platform of the Ministry of National Education, dedicated to this measurement.

The collected data were initially verified to ensure the results were correctly recorded and the answers were complete. Pupils were assigned to groups with different severity of problematic behaviours, using latent class analysis (LCA). It is a classification method based on the assumption that differences in responses to a set of questions result from the presence and influence of a latent variable. Different levels (classes, groups) of latent variable result in a manner of providing answers that is typical of a given group. Therefore, each group comprises individuals with similar measured traits or behaviours. However, the groups differ from one another in terms of the analysed specificity. This method is used to classify and verify the share of individuals with different levels of the analysed trait in the population (e.g. Baryła-Matejczuk, Kata, Poleszak, 2022; Pluess et al., 2018). The number of groups – latent classes – is chosen based on the goodness-of-fit coefficients. The solution which best fits the data is selected, minimising differences within a group and maximising differences between the groups. The following coefficients were used in this analysis: BIC (Bayesian Information Criterion), ABIC (Sample-Size-Adjusted Bayesian Information Criterion) and CAIC (Consistent Akaike Information Criterion). The interpretation consists in comparing the values of the above coefficients calculated for solutions with different numbers of groups. The selected solution is the one for which the coefficient values are the lowest compared with the values calculated for divisions into more or fewer classes. Alternatively, the selected solution is the one for which the goodness-of-fit va-

lues exhibit a sudden decrease – analogically to the interpretation of the scree plot in factor analysis (Sinha, Calfee, Delucchi, 2021; Achterhof et al., 2019). Use of latent class analysis allowed for division of young people into groups with different specificities of problematic behaviours. Apart from creating a division based on the respondents' characteristics, the share of individual groups in total population of pupils was determined. It should also be noted that latent class analysis produces more accurate solutions than cluster analysis methods. (Sinha, Calfee, Delucchi, 2021)

To answer the first and second research questions, tests of significance of differences were used: the non-parametric Kruskal–Wallis *H* test for independent groups and the chi-squared test for inter-group comparisons, as well as Student's *t*-test for dependent data, when the comparisons concerned two measurements within a single group. A decision was made not to use the parametric test allowing for parallel analysis of repeated measurements and the effect of the inter-object factor in the form of groups with different problematic behaviours. This decision resulted from different sizes of the compared groups, which makes it considerably more difficult to comply with the assumption of homogeneity of variance. (Pituch, Stevens, 2016) For the third research question, regression analysis with conditional mediation was used (moderated mediation, conditional process analysis), based on the solution proposed by A. F. Hayes (2022). The PROCESS script (Hayes, 2022) was used in the version for R environment (R Core Team, 2023). A solution aligned with the understanding of protective factors and risk factors according to R. Jessor (Jessor, Turbin, 2014; Jessor, 2018) was tested. In this solution, risk factors increase the probability of occurrence of problematic behaviours, while protective factors reduce this probability and, at the same time, mitigate the effect of the risk factors. A variable which is the aggregate index of pupils' participation in prevention education activities was introduced into the model. It was based on the pupils' declaration and plated the role of a moderator between the factors and problematic behaviours. It was assumed that prevention education classes strengthen the role of protective factors and mitigate the effect of risk factors. A graphic presentation of the model is provided in the chapter describing the results. Variables which constitute the difference between the second and first measurement in terms of general intensity of the analysed protective factors, risk factors and problematic behaviour

indices were introduced into regression. The first step involved adding standardised values of the analysed factors and behaviours separately for the first and second measurement. The second step consisted in calculating the aforementioned differences to obtain measurements which reflect the nature of changes over a period of one year. Positive values of variables meant an increase in the variable over a period of one year, while negative ones – a decrease in the level of engagement in problematic behaviours or factors. The regression analysis was carried out using the bootstrapping methods (with n = 5,000 repetitions) to estimate the value of the regression coefficients and the mediation effect on three moderator levels (with the first level being -1SD from the mean value, the second level – the mean value and the third level being +1SD to the mean value). Before commencing the analyses, assumptions about homoscedasticity, normality of residuals in regression, collinearity of components and outlier analysis were also verified – using the value of Cook's ratio. (Field, 2022) Wherever the analysis demonstrated the absence of moderating effect for the prevention education activities variable, a simpler model involving mediation between protective factors and risk factors in terms of their impact on the pupils' behaviour was checked.

The analyses used the IBM Spss 29.0 statistical environment and the R environment, version 4.4.1 (R Core Team, 2023) with RStudio (Posit Team, 2024), as well as the following packages: poLCA (Linzer, Lewis, 2011), qgraph (Epskamp et al., 2012), bootnet (Epskamp, Borsboom, Fried, 2018), NetworkComparisonTest (Van Borkulo et al., 2023) and psych. (Revelle, 2023) The level of materiality adopted in all analyses was 0.05.

Chapter 4
Analysis of research results

The analysis of research results has been divided into sub-chapters dedicated to the research questions. The first section describes groups of pupils which can be distinguished based on the type and frequency of problematic behaviours they engage in. Then, sub-chapter two outlines prevention education activities attended by pupils with different levels of engagement in problematic behaviours. The next section is dedicated to changes between the first and the second measurements of problematic behaviours, protective factors and risk factors, while maintaining the said division of pupils. It outlines the calculated differences in these aspects and points out the most important ones. This allowed to determine the efficiency of the actions presented in sub-chapter two. Next, changes in the characteristics of pupils and their environments were cross-checked with participation in prevention education activities while applying regression analysis. This analysis provided additional information on the efficiency of school activities and demonstrated the correlations between the pupils' behaviour, protective factors and risk factors. At the same time, it showed how a change in one factor affects other parts of the environment. All Tables in chapter four were developed by the author. For this reason, the source of data is not indicated in each case.

4.1. Problematic behaviours in pupils

The latent class analysis (LCA) described in this methodological chapter became the basis for dividing young people into groups according to the different levels of engagement in problematic behaviours. The advantage of this method is creating groups of individuals who tend to give similar answers to a set of questions. As a result, the groups comprise pupils with specific frequencies of problematic behaviours. This allows us to see the sub-groups among Polish youth that form in terms of using psychoactive substances and violence. LCA provides better results than other classification methods, such as cluster analysis or classification based on varia-

ble distribution (e.g. distinguishing groups based on outlier and extreme values). Presented below are problematic behaviours of young people from the groups established as a results of the latent class analysis. The presentation is based on the results of the first stage of the research.

4.1.1. Primary school pupils of grades 4–8

Testing the fit of LCA models to data on problematic behaviours of students in grades 4–8 of primary schools, six solutions were examined: from a unidimensional model (without distinguished classes) to a model with six latent classes. The fit statistics for each model are presented in Table 29.

Table 29. Results of latent class analysis performed on answers to questions about the frequency of problematic behaviours in primary school pupils of grades 4–8

Number of classes	G^2	BIC	aBIC	cAIC	Entropy
1	-7371,11	15077,07	14930,94	15123,07	-
2	-6722,30	14121,58	13826,15	14214,58	0,745
3	-6506,27	14031,65	13586,92	14171,65	0,766
4	-6404,13	14169,50	13575,46	14356,50	0,757
5	-6350,65	14404,66	13661,32	14638,66	0,768
6	-6308,91	14663,31	13770,66	14944,31	0,777

Two of the three fit indices have the lowest values in the solution involving three groups (BIC = 14,031.65 and cAIC = 14,171.65). The entropy index for this division is greater than the lowest value in the presented results. This indicates that dividing the respondents into three groups is the right choice.

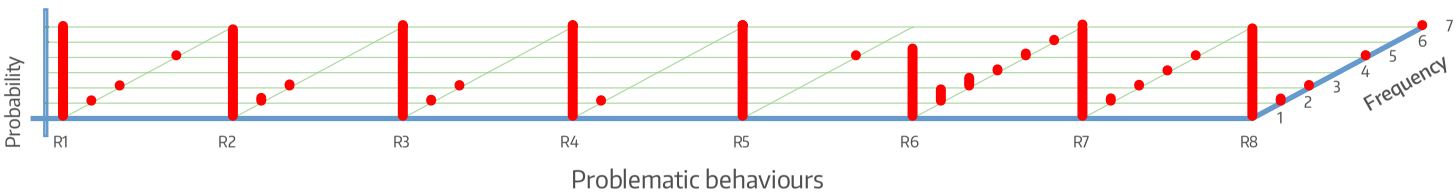
The first group was defined as a group with a low level of engagement in problematic behaviours (LPBps). This is due to the pupils' declaration that they have predominantly engaged in problematic behaviours on a one-off basis or not at all (Table 30). However, this does not mean complete absence of such behaviours. 3.15% of individuals from this group engage in name-calling/using profanities at least once a month. 2.2% of respondents

have offended someone online at least once in their lives, while more than 1% of them have drunk beer several times. Such low percentages indicate the sporadic nature of these behaviours in the discussed group. This group dominates among primary school pupils and includes 59.2% of all respondents.

Table 30. Frequency of problematic behaviours in primary school pupils of grades 4–8 with a low level of engagement in such behaviours (LPBps group, n = 858)

Problematic behaviours	Never	Once in a lifetime	A few times in a lifetime	A few times over the last year	A few times over the last month	A few times over the last week	Daily
	%	%	%	%	%	%	%
Smoking/vaping	99,30	0,23	0,35	0,00	0,12	0,00	0,00
Drinking beer	95,92	2,91	1,05	0,00	0,00	0,00	0,12
Drinking wine	98,37	0,93	0,58	0,00	0,00	0,00	0,12
Drinking vodka or other strong liquors	99,42	0,47	0,00	0,00	0,00	0,00	0,12
Getting drunk	99,88	0,00	0,00	0,00	0,12	0,00	0,00
Name-calling/ using profanities	74,59	12,35	9,91	0,00	3,15	0,00	0,00
Physical violence/fighting	97,55	1,17	0,70	0,35	0,23	0,00	0,00
Offending someone online	96,74	2,21	0,70	0,00	0,23	0,00	0,12

Presented below is the probability (estimated during latent class analysis) that individuals from the LPBps group would engage in problematic behaviours (Figure 12). Similarly to the results presented in the Table above, a tendency for pupils to use verbal abuse can be observed. At the same time, the chart indicates a general trait of this group, namely the lack of engagement in problematic behaviours.



Problematic behaviours:

R1: smoking/vaping
R2: drinking beer
R3: drinking wine
R4: drinking vodka or other strong liquors
R5: getting drunk
R6: name-calling/using profanities
R7: physical violence/fighting
R8: offending someone online

Frequency:

1: never
2: once in a lifetime
3: a few times in a lifetime
4: a few times over the last year
5: a few times over the last month
6: a few times over the last week
7: daily

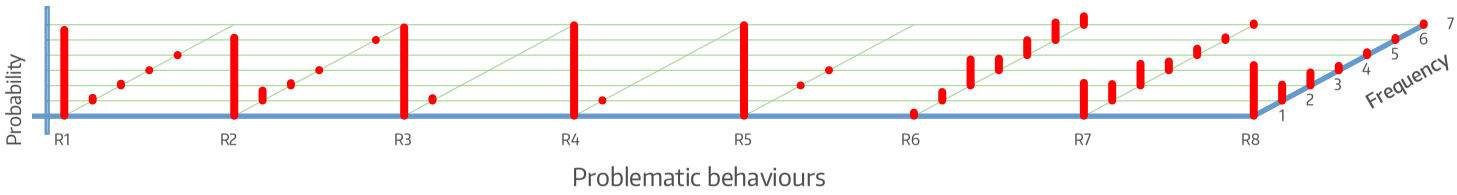
Figure 12. Probability of engagement in problematic behaviours by primary school pupils of grades 4–8 with a low level of engagement in such behaviours (LPBps)

The next group comprises pupils with a moderate level of engagement in problematic behaviours (MPBps), corresponding to 31.3% of primary school pupils. The following Table contains data on the frequency of problematic behaviours in such individuals (Table 31). The data present this group of pupils as having a tendency to use violence more frequently than to use psychoactive substances. 21.37% of pupils from this group engage in verbal abuse several times a week, while 11.23% of them do it every day. Approximately 5% of respondents declare that they use physical violence every day or several times a week. Young people from this group offend others online slightly less frequently (1.76% – on a daily basis, 2.42% – several times a week). In most cases, legal drug use involves drinking beer. Approximately 12% of pupils have done it once or several times in their lives. The next most frequently chosen legal drug were cigarettes – more than 4% of pupils have smoked at least once.

Table 31. Frequency of problematic behaviours in primary school pupils of grades 4–8 with a moderate level of engagement in such behaviours (MPBps group, n = 454)

Problematic behaviours	Never	Once in a lifetime	A few times in a lifetime	A few times over the last year	A few times over the last month	A few times over the last week	Daily
	%	%	%	%	%	%	%
Smoking/ vaping	94,27	3,30	1,98	0,22	0,22	0,00	0,00
Drinking beer	84,80	11,67	3,08	0,22	0,00	0,22	0,00
Drinking wine	98,24	1,76	0,00	0,00	0,00	0,00	0,00
Drinking vodka or other strong liquors	99,56	0,44	0,00	0,00	0,00	0,00	0,00
Getting drunk	99,78	0,00	0,00	0,22	0,00	0,00	0,00
Name-calling/using profanities	1,76	9,47	25,99	15,42	14,76	21,37	11,23
Physical violence/ fighting	32,16	20,93	24,89	9,91	7,27	3,08	1,76
Offending someone online	54,41	18,06	14,76	5,07	3,52	2,42	1,76

The probability chart depicts the information contained in the Table in graphic form (Figure 13). Taking into account the probability distribution of the last three behaviours presented in the Figure, issues with violence are the most typical characteristic of this group. In addition, distribution of answers regarding drinking beer deviates from other activities young people engage in. In this case the values are lower for the "never" option.



Problematic behaviours:

R1: smoking/vaping
R2: drinking beer
R3: drinking wine
R4: drinking vodka or other strong liquors
R5: getting drunk
R6: name-calling/using profanities
R7: physical violence/fighting
R8: offending someone online

Frequency:

1: never
2: once in a lifetime
3: a few times in a lifetime
4: a few times over the last year
5: a few times over the last month
6: a few times over the last week
7: daily

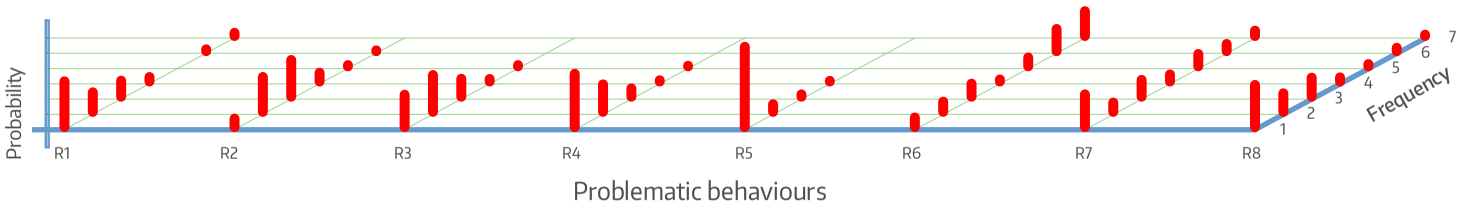
Figure 13. Probability of engagement in problematic behaviours by primary school pupils of grades 4–8 with a moderate level of engagement in such behaviours (MPBps)

The last group comprises pupils with a high level of engagement in problematic behaviours (HPBps) – 10% of all pupils attending grades 4–8 of primary school. Compared to the other two groups, these pupils engage in more problematic behaviours (Table 32). The similarity between the groups lies in the prevalence of violence over using psychoactive substances. Name-calling or using profanities on a daily basis is declared by 27.54% of respondents. Physical violence is used several times a week or daily by a total of 13.77% of pupils, while offending others online once a week or more often applies to more than 5% of respondents. Experimenting with substances or their regular use mainly concerns beer and wine. 41% of pupils have tried the former beverage several times in their lives, more than 10% of them drink it several times a year and approximately 1.5% have done it several times over the last month. When it comes to wine, these values are, respectively: 45.65%, 20.29% and 1.5% for "a few times over the last month". Cigarettes dominate among psychoactive substances in the "a few times over the last week" category, with 2.17% of pupils smoking with this frequency. 3.62% of respondents answered that they smoke "daily".

Table 32. Frequency of problematic behaviours in primary school pupils of grades 4–8 with a high level of engagement in such behaviours (HPBps group, n = 138)

Problematic behaviours	Never	Once in a lifetime	A few times in a lifetime	A few times over the last year	A few times over the last month	A few times over the last week	Daily
	%	%	%	%	%	%	%
Smoking/ vaping	48,55	22,46	18,12	5,07	0,00	2,17	3,62
Drinking beer	7,25	39,13	41,30	10,14	1,45	0,72	0,00
Drinking wine	29,71	45,65	20,29	2,90	1,45	0,00	0,00
Drinking vodka or other strong liquors	57,25	31,16	9,42	1,45	0,72	0,00	0,00
Getting drunk	87,68	8,70	2,90	0,72	0,00	0,00	0,00
Name-calling/using profanities	10,14	12,32	15,94	2,17	9,42	22,46	27,54
Physical violence/ fighting	36,96	10,87	17,39	7,25	13,77	7,97	5,80
Offending someone online	47,10	21,01	20,29	4,35	2,17	3,62	1,45

A graphic depiction of the frequency of problematic behaviours in pupils from the HPBps group is presented in Figure 14. The most frequent choices are beer, wine and use of physical violence. Based on these characteristics, this group was labelled the group with a high level of engagement in problematic behaviours (involving the highest risk).



Problematic behaviours:

R1: smoking/vaping
R2: drinking beer
R3: drinking wine
R4: drinking vodka or other strong liquors
R5: getting drunk
R6: name-calling/using profanities
R7: physical violence/fighting
R8: offending someone online

Frequency:

1: never
2: once in a lifetime
3: a few times in a lifetime
4: a few times over the last year
5: a few times over the last month
6: a few times over the last week
7: daily

Figure 14. Probability of engagement in problematic behaviours by primary school pupils of grades 4–8 with a high level of engagement in such behaviours (HPBps)

We also verified which problematic behaviours show the largest differences between the groups. To this end, the chi-squared test and the effect size measure C-Pearson were used (Table 33). Each problematic behaviour differs significantly between the groups ($p < 0.001$). The biggest differences can be observed for name-calling and using profanities ($C = 0.638$). As described above, this behaviour is the most typical of pupils with a moderate level of engagement in problematic behaviours. Only 1.8% of pupils in this group have no experience with engaging in verbal abuse. The smallest difference was observed for the frequency of getting drunk ($C = 0.315$). Youth from the HPBps group have had this experience more frequently. The two other groups do not differ significantly in this regard.

Table 33. Comparison between groups of pupils (LPBps – MPBps – HPBps) with different levels of engagement in problematic behaviours when it comes to the frequency of individual behaviours

Problematic behaviours	Comparison		
	χ^2	p	C
Smoking/vaping	491,716	< 0,001	0,503
Drinking beer	790,739	< 0,001	0,594
Drinking wine	792,526	< 0,001	0,594
Drinking vodka or other strong liquors	524,426	< 0,001	0,515
Getting drunk	159,530	< 0,001	0,315
Name-calling/using profanities	997,086	< 0,001	0,638
Physical violence/fighting	771,899	< 0,001	0,589
Offending someone online	419,126	< 0,001	0,474

The following sub-section describes the groups among secondary school pupils.

4.1.2. Secondary school pupils

Young people attending secondary school were also divided into three groups with different levels of engagement in problematic behaviours. This results from the values of the goodness-of-fit indicators obtained from the latent class analysis. These values are presented in Table 34. Similarly to primary school pupils, the values of two coefficients are the lowest in the three-group model: BIC = 36859.85 and cAIC = 37107.85. On this basis, this solution was adopted as the one that best fits the collected data. The specifics of the groups are described below. It should be noted that in the case of secondary school pupils, problematic behaviours cover a wider scope of behaviours, including the use of drugs, gambling and browsing erotic websites.

Table 34. Results of latent class analysis performed on answers to questions about the frequency of problematic behaviours in secondary school pupils

Number of classes	G^2	BIC	aBIC	cAIC	Entropy
1	-20579,32	41749,19	41488,71	41831,19	-
2	-18203,04	37594,39	37070,25	37759,39	0,92
3	-17536,89	36859,85	36072,07	37107,85	0,91
4	-17240,22	36864,28	35812,83	37195,28	0,811
5	-17046,10	37073,79	35758,69	37487,79	0,831
6	-16872,44	37324,24	35745,49	37821,24	0,777

The first one of the described groups comprises pupils with the lowest level of engagement in problematic behaviours (LPBss). They make up 39.8% of secondary school pupils and mostly have no experience with problematic behaviours – "never" is the most frequently chosen answer (Table 35). The distribution of answers is more varied only in the case of verbal abuse. More than 13% of young people engage in it on a daily basis, while a total of 20% of them do it several times a week or month. The second most frequent behaviour is browsing erotic websites. 2.4% of teenagers do it daily, 5.2%, – several times a month and 3.9% do it several times a week. When it comes to legal drugs, pupils

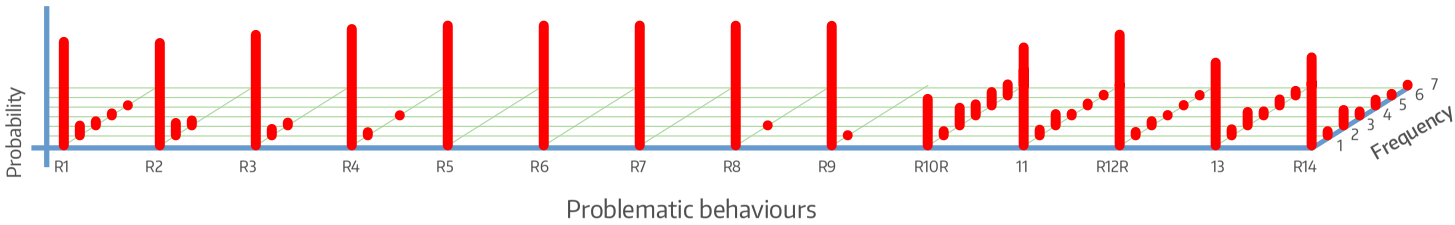
have the most experience with cigarettes and beer. They use these substances sporadically – 0.2% of pupils smoke a few times a month and 3.6% have smoked a few times in their lives. 3.4% of them have drunk beer a few times in their lifetime.

Table 35. Frequency of problematic behaviours in secondary school pupils with a low level of engagement in such behaviours (the LPBss group, n = 534)

Problematic behaviours	Never	Once in a lifetime	A few times in a lifetime	A few times over the last year	A few times over the last month	A few times over the last week	Daily
	%	%	%	%	%	%	%
Smoking/vaping	86,33	8,05	3,56	1,87	0,19	0,00	0,00
Drinking beer	85,96	10,67	3,37	0,00	0,00	0,00	0,00
Drinking wine	93,26	4,68	2,06	0,00	0,00	0,00	0,00
Drinking vodka or other strong liquors	97,38	2,43	0,00	0,19	0,00	0,00	0,00
Getting drunk	100,00	0,00	0,00	0,00	0,00	0,00	0,00
Taking medications to become intoxicated	100,00	0,00	0,00	0,00	0,00	0,00	0,00
Using designer drugs	100,00	0,00	0,00	0,00	0,00	0,00	0,00
Smoking marijuana/ hashish	100,00	0,00	0,00	0,00	0,00	0,00	0,00
Using other drugs	99,81	0,19	0,00	0,00	0,00	0,00	0,00

Name-calling/using profanities	38,95	3,56	14,61	9,18	11,24	9,18	13,30
Physical violence/ fighting	81,65	4,87	9,36	1,31	1,69	0,75	0,37
Gambling for money and items	91,95	3,00	3,75	0,37	0,37	0,56	0,00
Browsing erotic content online	68,73	5,24	11,05	3,37	5,24	3,93	2,43
Offending someone online	72,85	3,56	13,30	3,37	4,87	1,31	0,75

The tendency to engage in problematic behaviours for pupils with a low level of engagement in such behaviours is depicted in Figure 15. It shows the highest variability of answers when it comes to smoking, drinking beer and wine, engaging in verbal abuse, browsing erotic websites and offending others online. In general, the most probable scenario for pupils from the LPBss is not engaging in risky behaviours.



Problematic behaviours:

R1: smoking/vaping
R2: drinking beer
R3: drinking wine
R4: drinking vodka or other strong liquors
R5: getting drunk
R6: taking medications to become intoxicated
R7: using designer drugs
R8: smoking marijuana/hashish
R9: using other drugs
R10: name-calling/using profanities
R11: physical violence/fighting
R12: gambling for money and items
R13: browsing erotic content online
R14: offending someone online

Frequency:

1: never
2: once in a lifetime
3: a few times in a lifetime
4: a few times over the last year
5: a few times over the last month
6: a few times over the last week
7: daily

Figure 15. Probability of engagement in problematic behaviours by secondary school pupils with a low level of engagement in such behaviours (LPBss)

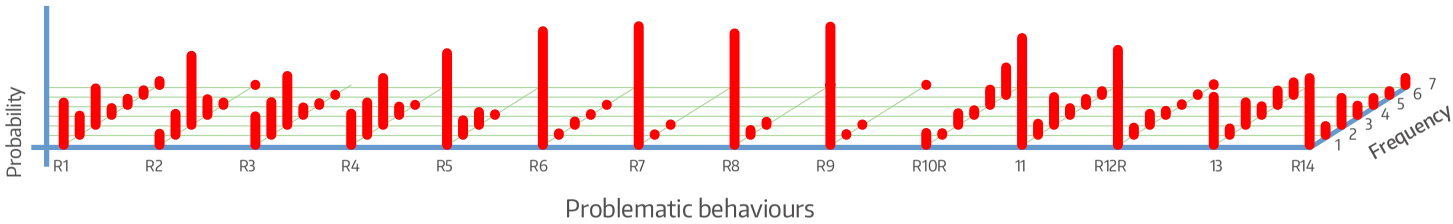
When it comes to the second group among secondary school pupils, problematic behaviours happen more frequently (Table 36). Pupils from this group (moderate level of engagement in problematic behaviours – MPBss) make up 32.8% of all pupils. This group is also the most frequent one to engage in name-calling and using profanities, which is a daily behaviour for 39.32% of respondents. Physical violence is observed less often – a total of 10% of pupils engage in it a few times a month or less frequently. Smoking or vaping is more common. 3.41% of teenagers smoke or vape daily, 3.64% of them do it several times a week and 5% – several times a month. They use alcohol more rarely and typically have done it a few times over the last year – 13.18% of them have drunk beer over the last year, 6.36% – wine and 6.82% – stronger liquors. When it comes to online behaviour, browsing erotic websites is a problem. 5.45% of individuals do it daily, 10.23% – several times a week and 12.27% – several times a month. When it comes to offending others online, the respective percentages are: 5.68%, 3.41% and 5.68% for the option "a few times in a month".

Table 36. Frequency of problematic behaviours in secondary school pupils with a moderate level of engagement in such behaviours (the MPBss group, n = 440)

Problematic behaviours	Never	Once in a lifetime	A few times in a lifetime	A few times over the last year	A few times over the last month	A few times over the last week	Daily
	%	%	%	%	%	%	%
Smoking/vaping	35,91	16,36	30,23	5,45	5,00	3,64	3,41
Drinking beer	8,41	17,27	58,86	13,18	2,05	0,00	0,23
Drinking wine	22,27	28,41	40,91	6,36	1,82	0,23	0,00
Drinking vodka or other strong liquors	25,45	27,73	39,32	6,82	0,00	0,00	0,68

Getting drunk	77,05	12,05	10,68	0,23	0,00	0,00	0,00
Taking medications to become intoxicated	95,23	1,14	2,73	0,68	0,23	0,00	0,00
Using designer drugs	99,32	0,45	0,23	0,00	0,00	0,00	0,00
Smoking marijuana/ hashish	93,41	3,86	2,50	0,00	0,00	0,00	0,23
Using other drugs	98,86	0,68	0,23	0,00	0,00	0,00	0,23
Name-calling/using profanities	9,77	1,36	9,77	3,86	12,95	22,95	39,32
Physical violence/ fighting	51,59	9,32	23,41	5,68	4,77	3,18	2,05
Gambling for money and items	79,77	5,91	9,09	3,41	0,68	0,45	0,68
Browsing erotic content online	40,23	5,45	19,09	7,27	12,27	10,23	5,45
Offending someone online	48,41	7,27	22,05	7,50	5,68	3,41	5,68

Figure 16, which depicts the behaviours of individuals from the MPBss group, shows their tendency to avoid psychoactive substances: medications, designer drugs, marijuana or other narcotics. As for the remaining behaviours, the variability of possible answers is greater and there is a higher probability of engaging in verbal abuse.



Zachowania problemowe:

R1: palenie tytoniu/e-papierosów
R2: picie piwa
R3: picie wina
R4: picie wódki lub innych mocnych alkoholi
R5: upijanie się
R6: zażywanie leków w celu odurzania się
R7: zażywanie dopalaczy
R8: palenie marihuany/haszyszu
R9: zażywanie innych narkotyków
R10: używanie wyzwisk/wulgaryzmów
R11: stosowanie przemocy fizycznej/bicie
R12: granie w gry hazardowe na pieniądze i rzeczy
R13: przeglądanie treści erotycznych w internecie
R14: obrażanie kogoś w internecie

Frequency:

1: never
2: once in a lifetime
3: a few times in a lifetime
4: a few times over the last year
5: a few times over the last month
6: a few times over the last week
7: daily

Figure 16. Probability of engagement in problematic behaviours by secondary school pupils with a moderate level of engagement in such behaviours (MPBss)

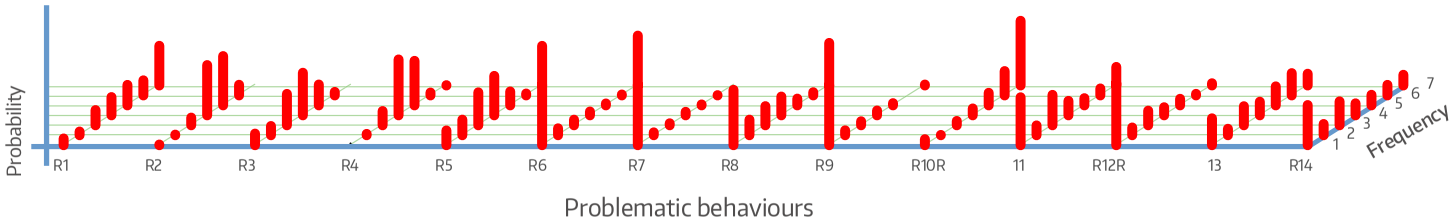
The last group – pupils with a high level of engagement in problematic behaviours (HPBss) – make up 27.4% of this age group. Pupils in this group use psychoactive substances and engage in violence with the highest frequency (Table 37). Smoking is a daily activity for 33.15% of individuals from the group. Only 4.89% of them have never smoked tobacco. 8.97% of respondents drink beer a few times a week, 2.99% – wine and 2.45% – stronger liquors. When it comes to the frequency of several times a month, these values are: 41.30% for beer, 17.12% for wine and 37.50% for vodka and other strong liquors. The most frequently chosen option when it comes to getting drunk is "a few times over the last year", selected by 33.42% of respondents. The most frequently used drugs are marijuana or hashish – 15.76% pupils smoke them several times a week and 5.71% of them do it several times a month. Verbal abuse is the most common problematic behaviour. More than 50% of individuals in this group use violence on a daily basis. 9.24% of respondents offend others online every day. Another problematic behaviour is browsing erotic content available on the internet. Approximately 80% of young people from this group have done it at least once. They typically do it several times a week (19.02%) or month (15.49%). More than 10.05% of pupils browse such content on a daily basis.

Table 37. Frequency of problematic behaviours in secondary school pupils with a high level of engagement in such behaviours (the HPBss group, n = 368)

Problematic behaviours	Never	Once in a lifetime	A few times in a lifetime	A few times over the last year	A few times over the last month	A few times over the last week	Daily
	%	%	%	%	%	%	%
Smoking/vaping	4,89	2,99	13,04	15,49	17,39	13,04	33,15
Drinking beer	0,54	0,54	6,52	42,12	41,30	8,97	0,00
Drinking wine	9,78	7,61	26,90	35,60	17,12	2,99	0,00
Drinking vodka or other strong liquors	0,00	0,82	11,96	47,01	37,50	2,45	0,27
Getting drunk	11,68	13,32	27,72	33,42	11,68	1,63	0,54
Taking medications to become intoxicated	82,88	5,98	4,89	3,26	1,63	0,82	0,54
Using designer drugs	91,58	2,45	1,90	2,99	0,82	0,27	0,00
Smoking marijuana/ hashish	45,92	13,32	16,30	15,76	5,71	2,72	0,27
Using other drugs	85,60	4,08	3,53	4,08	1,90	0,00	0,82

Name-calling/ using profanities	4,89	0,27	3,80	5,98	10,33	20,65	54,08
Physical violence/ fighting	40,22	8,15	25,54	12,23	6,25	5,71	1,90
Gambling for money and items	65,76	6,52	12,23	6,79	5,43	1,36	1,90
Browsing erotic content online	22,83	5,16	16,03	11,41	15,49	19,02	10,05
Offending someone online	33,15	9,51	20,11	10,33	8,97	8,70	9,24

As a consequence, the chart depicting the probability of engaging in problematic behaviours in the HPBss group is the most varied one (Figure 17). "Never" is clearly the most frequent answer for drugs and physical violence. When it comes to cigarettes and verbal abuse, it is the opposite – higher probability is observed for options corresponding to the significant frequency of these behaviours.



Zachowania problemowe:

R1: palenie tytoniu/e-papierosów
R2: picie piwa
R3: picie wina
R4: picie wódki lub innych mocnych alkoholi
R5: upijanie się
R6: zażywanie leków w celu odurzania się
R7: zażywanie dopalaczy
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R13: przeglądanie treści erotycznych w internecie
R14: obrażanie kogoś w internecie

Frequency:

1: never
2: once in a lifetime
3: a few times in a lifetime
4: a few times over the last year
5: a few times over the last month
6: a few times over the last week
7: daily

Figure 17. Probability of engagement in problematic behaviours by secondary school pupils with a high level of engagement in such behaviours (HPBss)

The frequency of engagement in each problematic behaviour differs significantly between the three groups of secondary school pupils (Table 38). However, analysis of effect size measure C-Pearson allows us to determine which behaviours are the most varied and which ones are similar when it comes to the pupils' engagement. The biggest differences concern drinking beer (C = 0.749) and vodka or other strong liquors (C = 0.745). In this regard, pupils from the HPBss group stand out since they drink alcohol the most frequently within a single month. Behaviours for which the effect size is small include: taking medications to become intoxicated, using designer drugs, using other narcotics and gambling. The HPBss group stands out in terms of each of these behaviours; however, the differences between the groups are not as significant as in the case of alcohol.

Table 38. Comparison between groups of pupils (LPBss – MPBss – HPBss) with different levels of engagement in problematic behaviours when it comes to frequency of individual behaviours

Problematic behaviours	Comparison		
	χ^2	p	C-Pearsona
Smoking/vaping	985,635	< 0,001	0,651
Drinking beer	1717,831	< 0,001	0,749
Drinking wine	1107,938	< 0,001	0,672
Drinking vodka or other strong liquors	1671,564	< 0,001	0,745
Getting drunk	930,987	< 0,001	0,640
Taking medications to become intoxicated	119,449	< 0,001	0,286
Using designer drugs	73,197	< 0,001	0,227
Smoking marijuana/hashish	521,305	< 0,001	0,529
Using other drugs	124,530	< 0,001	0,291
Name-calling/using profanities	360,261	< 0,001	0,460
Physical violence/fighting	200,132	< 0,001	0,360
Gambling for money and items	123,676	< 0,001	0,290
Browsing erotic content online	231,846	< 0,001	0,384
Offending someone online	179,400	< 0,001	0,343

Following this characterisation of groups of youth with different specificities of problematic behaviours, the next section will describe prevention education activities that pupils have participated in. The description will be based on the pupils' knowledge of what activities they have participated in, who conducted them and the group size. The pupils have also assessed the quality of the activities they have participated in.

4.2. Pupils' opinion on the prevention education activities

Analogically to the frequency of problematic behaviours, the pupils' experiences with prevention education activities have been described separately for grades 4–8 of primary school and secondary school.

4.2.1. Primary school pupils of grades 4–8

The data presented in the first Table depict the number of hours and themes of prevention education activities which have been organised over the last school year, according to the pupils. Regardless of the level of engagement in problematic behaviours, participation in these activities is similar. There is no statistically significant difference in this regard between the individual groups of pupils, hence the description refers to the total value (Table 39). In many cases, pupils chose "I don't know", which likely indicates uncertainty as to the nature and topic of the organised activities. This option was chosen the most frequently for two topics: navigating difficult situations (a total of 49%) and support of personal development (over 45%). On the other hand, participation in meetings dedicated to online safety was declared with the highest frequency. More than 41% of pupils have had between one and four class hours dedicated to this subject. Dealing with cyberbullying is the second most frequently indicated subject – 37.1% of individuals have participated in one to four hours of such activities. The third one was class integration. At least one hour of integration was indicated by 27.93% of respondents, while approximately 15% of people declared more than five hours of integration. The use of legal drugs – cigarettes and alcohol – was tackled for 40% of surveyed pupils (the percentage of individuals who have chosen answers other than "I don't know" or "there have been no such classes"). The areas mentioned earlier: navigating difficult situations and support of personal development are simultaneously activities with the lowest number of hours. 18.21% of pupils have participated in one to four hours dedicated to the former subject, while 16.48% of them have had up to four hours of activities related to the latter.

Table 39. Number of hours and themes of prevention education activities addressed to primary school pupils of grades 4–8

Theme of prevention education activities		LPBps	MPBps	HPBps	Total
		%	%	%	%
Support of personal development (e.g. self-esteem, values, self-discovery)	I don't know	$46{,}15_a$	$45{,}37_a$	$44{,}93_a$	45,79
	there have been no such activities	$30{,}19_a$	$34{,}80_a$	$32{,}61_a$	31,86
	1–4 class hours	$17{,}02_a$	$15{,}64_a$	$15{,}94_a$	16,48
	5–10 class hours	$4{,}31_a$	$2{,}86_a$	$5{,}07_a$	3,93
	11–30 class hours	$1{,}05_a$	$0{,}44_a$	$1{,}45_a$	0,90
	more than 30 class hours	$1{,}28_a$	$0{,}88_a$	$0{,}00_a$	1,03
χ^2= 8,321, p = 0,598, C = 0,076					
Developing relationships and contacts with peers (e.g. conflict resolution, communication, listening to others)	I don't know	$43{,}47_a$	$41{,}63_a$	$42{,}03_a$	42,76
	there have been no such activities	$23{,}19_a$	$27{,}75_a$	$19{,}57_a$	24,28
	1–4 class hours	$23{,}54_a$	$22{,}91_a$	$28{,}99_a$	23,86
	5–10 class hours	$5{,}83_a$	$5{,}73_a$	$5{,}80_a$	5,79
	11–30 class hours	$1{,}86_a$	$0{,}88_a$	$3{,}62_a$	1,72
	more than 30 class hours	$2{,}10_a$	$1{,}10_a$	$0{,}00_a$	1,59
χ^2 = 15,060, p = 0,130, C = 0,101					
Motivation, drive to learn	I don't know	$40{,}68_a$	$41{,}63_a$	$40{,}58_a$	40,97
	there have been no such activities	$28{,}21_a$	$34{,}14_a$	$28{,}99_a$	30,14
	1–4 class hours	$22{,}49_a$	$18{,}06_a$	$21{,}74_a$	21,03
	5–10 class hours	$5{,}59_a$	$4{,}63_a$	$5{,}80_a$	5,31
	11–30 class hours	$1{,}40_a$	$0{,}88_a$	$1{,}45_a$	1,24
	more than 30 class hours	$1{,}63_a$	$0{,}66_a$	$1{,}45_a$	1,31
χ^2 = 9,864, p = 0,453, C = 0,082					

Online safety	I don't know	32,17$_a$	33,70$_a$	32,61$_a$	32,69
	there have been no such activities	13,64$_a$	13,66$_a$	10,14$_a$	13,31
	1–4 class hours	41,72$_a$	39,65$_a$	44,93$_a$	41,38
	5–10 class hours	9,56$_a$	8,81$_a$	7,97$_a$	9,17
	11–30 class hours	1,63$_a$	2,20$_a$	2,17$_a$	1,86
	more than 30 class hours	1,28$_a$	1,98$_a$	2,17$_a$	1,59
$\chi^2 = 4,405$, $p = 0,927$, $C = 0,055$					
Dealing with cyberbullying	I don't know	36,36$_a$	36,34$_a$	36,23$_a$	36,34
	there have been no such activities	16,43$_a$	16,52$_a$	10,87$_a$	15,93
	1–4 class hours	36,83$_a$	36,34$_a$	41,30$_a$	37,10
	5–10 class hours	7,81$_a$	7,93$_a$	10,14$_a$	8,07
	11–30 class hours	1,28$_a$	1,54$_a$	1,45$_a$	1,38
	more than 30 class hours	1,28$_a$	1,32$_a$	0,00$_a$	1,17
$\chi^2 = 5,962$, $p = 0,818$, $C = 0,064$					
Verbal and physical aggression, bullying	I don't know	40,79$_a$	42,07$_a$	39,86$_a$	41,10
	there have been no such activities	21,10$_a$	22,47$_a$	16,67$_a$	21,10
	1–4 class hours	28,44$_a$	28,41$_a$	31,88$_a$	28,76
	5–10 class hours	6,88$_a$	4,63$_a$	10,14$_a$	6,48
	11–30 class hours	1,40$_a$	1,98$_a$	1,45$_a$	1,59
	more than 30 class hours	1,40$_a$	0,44$_a$	0,00$_a$	0,97
$\chi^2 = 12,808$, $p = 0,235$, $C = 0,094$					

Pupils' behaviours which can lead to an addiction (e.g. excessive internet use)	I don't know	41,49$_a$	40,09$_a$	39,13$_a$	40,83
	there have been no such activities	18,88$_a$	22,47$_a$	13,04$_a$	19,45
	1–4 class hours	28,67$_a$	28,41$_a$	36,96$_a$	29,38
	5–10 class hours	8,04$_a$	7,05$_a$	8,70$_a$	7,79
	11–30 class hours	1,98$_a$	0,88$_a$	0,72$_a$	1,52
	more than 30 class hours	0,93$_a$	1,10$_a$	1,45$_a$	1,03
	$\chi^2 = 12{,}290$, $p = 0{,}266$, $C = 0{,}092$				
Smoking, drinking alcohol	I don't know	38,34$_a$	37,89$_a$	38,41$_a$	38,21
	there have been no such activities	21,45$_a$	23,79$_a$	14,49$_a$	21,52
	1–4 class hours	29,37$_a$	29,52$_a$	35,51$_a$	30,00
	5–10 class hours	7,81$_a$	5,73$_a$	7,25$_a$	7,10
	11–30 class hours	2,21$_a$	1,98$_a$	3,62$_a$	2,28
	more than 30 class hours	0,82$_a$	1,10$_a$	0,72$_a$	0,90
	$\chi^2 = 9{,}240$, $p = 0{,}509$, $C = 0{,}080$				
Coping with mental crisis	I don't know	44,41$_a$	42,73$_a$	44,93$_a$	43,93
	there have been no such activities	27,27$_a$	31,72$_a$	23,19$_a$	28,28
	1–4 class hours	20,16$_a$	18,94$_a$	24,64$_a$	20,21
	5–10 class hours	5,94$_a$	4,85$_a$	5,80$_a$	5,59
	11–30 class hours	0,93$_a$	0,88$_a$	1,45$_a$	0,97
	more than 30 class hours	1,28$_a$	0,88$_a$	0,00$_a$	1,03
	$\chi^2 = 8{,}466$, $p = 0{,}583$, $C = 0{,}076$				

Class integration activities	I don't know	42,31$_a$	41,85$_a$	36,23$_a$	41,59
	there have been no such activities	15,03$_a$	16,96$_a$	13,77$_a$	15,52
	1–4 class hours	27,97$_a$	27,31$_a$	29,71$_a$	27,93
	5–10 class hours	9,67$_a$	10,35$_a$	13,04$_a$	10,21
	11–30 class hours	3,73$_a$	2,42$_a$	4,35$_a$	3,38
	more than 30 class hours	1,28$_a$	1,10$_a$	2,90$_a$	1,38
$\chi^2 = 8{,}178$, $p = 0{,}611$, $C = 0{,}075$					
Activities dedicated to navigating new, difficult situations	I don't know	49,77$_a$	48,46$_a$	46,38$_a$	49,03
	there have been no such activities	23,89$_a$	29,07$_a$	21,74$_a$	25,31
	1–4 class hours	18,53$_a$	16,30$_a$	22,46$_a$	18,21
	5–10 class hours	5,36$_a$	4,41$_a$	5,80$_a$	5,10
	11–30 class hours	1,17$_a$	1,10$_a$	2,90$_a$	1,31
	more than 30 class hours	1,28$_a$	0,66$_a$	0,72$_a$	1,03
$\chi^2 = 11{,}442$, $p = 0{,}324$, $C = 0{,}088$					

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of $p = 0.05$.

Pupils have also assessed the frequency of prevention education activities organised in specific forms – from individual to large group activities organised for the entire school (Table 40). The most frequent form of activities was meetings addressed to the whole class or group (e.g. from the activity room). Such activities were attended by 46% of all pupils of grades 4–8; 18.9% of pupils indicated that they were one-of activities, while 15.66% of respondents stated that they have had from two to four class hours. The second most frequent form of activities was work in small groups. A total of 45.24% of pupils have participated in it at least once. Large group activities have been experienced by 34.07% of all respondents. The rarest form of activity for pupils was individual work – approximately 25% of all pupils have encountered such activities.

Groups of pupils with different levels of engagement in problematic behaviours do not differ significantly in terms of declarations regarding the form of activities they have taken part in.

Tabela 40. Forma zajęć wychowawczo-profilaktycznych skierowanych do uczniów klas 4–8 szkół podstawowych

Form of prevention education activities		LPBps	MPBps	HPBps	Total
		%	%	%	%
Large group activities (entire school or several classes at once)	I don't know or I haven't participated	$47,79_a$	$51,76_a$	$42,75_a$	48,55
	there have been no activities in this form	$16,78_a$	$17,40_a$	$21,01_a$	17,38
	one class hour of activities	$15,62_a$	$11,45_a$	$17,39_a$	14,48
	2–4 class hours of activities	$13,05_a$	$14,32_a$	$16,67_a$	13,79
	more class hours of such activities	$6,76_a$	$5,07_a$	$2,17_a$	5,79
$\chi^2 = 13,869$, $p = 0,085$, $C = 0,097$					
Entire class or group from activity room	I don't know or I haven't participated	$41,49_a$	$44,93_a$	$36,23_a$	42,07
	there have been no activities in this form	$12,70_a$	$9,69_a$	$14,49_a$	11,93
	one class hour of activities	$19,00_a$	$17,84_a$	$21,74_a$	18,90
	2–4 class hours of activities	$15,85_a$	$15,42_a$	$15,22_a$	15,66
	more class hours of such activities	$10,96_a$	$12,11_a$	$12,32_a$	11,45
$\chi^2 = 6,534$, $p = 0,588$, $C = 0,067$					

Activities in a small group (several people)	I don't know or I haven't participated	$38,81_a$	$46,04_a$	$38,41_a$	41,03
	there have been no activities in this form	$13,99_a$	$12,33_a$	$16,67_a$	13,72
	one class hour of activities	$20,51_a$	$18,06_a$	$17,39_a$	19,45
	2–4 class hours of activities	$13,64_a$	$13,44_a$	$16,67_a$	13,86
	more class hours of such activities	$13,05_a$	$10,13_a$	$10,87_a$	11,93
$\chi^2 = 9,976, p = 0,267, C = 0,083$					
Individual activities	I don't know or I haven't participated	$55,01_a$	$56,61_a$	$47,10_a$	54,76
	there have been no activities in this form	$19,11_a$	$20,26_a$	$23,91_a$	19,93
	one class hour of activities	$11,07_a$	$9,03_a$	$13,04_a$	10,62
	2–4 class hours of activities	$6,88_a$	$6,39_a$	$8,70_a$	6,90
	more class hours of such activities	$7,93_a$	$7,71_a$	$7,25_a$	7,79
$\chi^2 = 6,084, p = 0,638, C = 0,065$					

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

Pupils' opinions on the method of conducting prevention education activities as well as their effects are presented in Table 41. No aspects of these activities received explicitly low or high scores from the majority of pupils. Top percentage values do not exceed 35% – the percentage of pupils who gave high and very high scores for the sense of being accepted by the facilitator. Another frequently emphasised feature was a positive atmosphere during prevention education classes. Approximately a third of pupils gave high and very high scores to activities in this case, as well. 30.34% of them, in turn, stated that the activities presented an opportunity to obtain new information. How the activities were conducted was generally adequate for 29.52% of respondents. This general opinion on the activities is also the

only one showing a significant difference between individuals from the three groups. Pupils with a high level of engagement in problematic behaviours were more likely than their peers to deem the activities less useful (chi = 18.714, p = 0.044). The opportunity to be honest when it comes to difficult matters received the lowest aggregate scores – 20% of pupils chose the answer "to a small extent" or "barely, not at all", and for 42% of them, it was hard to say. The opportunity to develop methods of coping with problems was evaluated similarly. For 19.58% of pupils, the activities did not present an opportunity to develop such skills at all or presented such an opportunity to a limited extent, while 43% of respondents found it difficult to answer this question. The same issue was with the sense that the experience gained during the activities would be used in the participants' daily lives – 19.8% of pupils stated that this would not be the case at all or it would be to a limited extent, while more than 44% of them were uncertain as to how to assess this aspect.

Table 41. Opinions of primary school pupils of grades 4–8 on the method of conducting prevention education activities as well as their effects

Opinion on the activities		LPBps	MPBps	HPBps	Total
		%	%	%	%
In general, were you satisfied with the activities?	I haven't participated	12,00$_a$	14,76$_a$	13,04$_a$	12,97
	barely, not at all	11,77$_a$	9,25$_a$	15,94$_a$	11,38
	to a small extent	7,46$_a$	8,15$_a$	11,59$_a$	8,07
	hard to say	40,09$_a$	44,05$_a$	34,06$_a$	40,76
	to a large extent	19,35$_a$	16,74$_a$	18,84$_a$	18,48
	exceedingly, completely	9,32$_a$	7,05$_a$	6,52$_a$	8,34
$\chi^2 = 15{,}083$, $p = 0{,}129$, $C = 0{,}101$					
Did you like the way the activities were conducted?	I haven't participated	10,96$_a$	14,98$_a$	13,04$_a$	12,41
	barely, not at all	10,49$_a$	7,05$_a$	12,32$_a$	9,59
	to a small extent	8,51$_a$	7,27$_a$	13,04$_b$	8,55
	hard to say	40,44$_a$	40,97$_a$	33,33$_a$	39,93
	to a large extent	19,93$_a$	22,69$_a$	18,12$_a$	20,62
	exceedingly, completely	9,67$_a$	7,05$_a$	10,14$_a$	8,90
$\chi^2 = 18{,}714$, $p = 0{,}044$, $C = 0{,}113$					
Did the facilitator seem to take the suggestions of pupils/ participants into account?	I haven't participated	11,89$_a$	15,20$_a$	13,77$_a$	13,10
	barely, not at all	11,19$_a$	7,27$_a$	11,59$_a$	10,00
	to a small extent	7,11$_a$	5,73$_a$	10,87$_a$	7,03
	hard to say	46,50$_a$	44,27$_a$	40,58$_a$	45,24
	to a large extent	15,27$_a$	20,04$_a$	17,39$_a$	16,97
	exceedingly, completely	8,04$_a$	7,49$_a$	5,80$_a$	7,66
$\chi^2 = 17{,}353$, $p = 0{,}067$, $C = 0{,}109$					

Did you feel that you could ask follow-up questions, have a discussion, make comments?	I haven't participated	11,42$_a$	15,64$_a$	13,04$_a$	12,90
	barely, not at all	11,31$_a$	8,59$_a$	11,59$_a$	10,48
	to a small extent	8,04$_a$	7,27$_a$	5,80$_a$	7,59
	hard to say	41,14$_a$	40,97$_a$	39,86$_a$	40,97
	to a large extent	18,18$_a$	18,28$_a$	19,57$_a$	18,34
	exceedingly, completely	9,91$_a$	9,25$_a$	10,14$_a$	9,72
$\chi^2 = 7{,}574$, $p = 0{,}670$, $C = 0{,}072$					
Did you feel that you could express views that are important to you?	I haven't participated	12,12$_a$	15,42$_a$	13,04$_a$	13,24
	barely, not at all	10,72$_a$	8,37$_a$	14,49$_a$	10,34
	to a small extent	7,81$_a$	7,27$_a$	8,70$_a$	7,72
	hard to say	44,29$_a$	44,93$_a$	37,68$_a$	43,86
	to a large extent	16,43$_a$	16,08$_a$	16,67$_a$	16,34
	exceedingly, completely	8,62$_a$	7,93$_a$	9,42$_a$	8,48
$\chi^2 = 8{,}582$, $p = 0{,}572$, $C = 0{,}077$					
Did you feel that you could be honest, especially when it comes to difficult subjects?	I haven't participated	11,19$_a$	15,64$_a$	13,04$_a$	12,76
	barely, not at all	11,19$_a$	11,23$_a$	15,94$_a$	11,66
	to a small extent	7,69$_a$	8,15$_a$	13,04$_a$	8,34
	hard to say	43,47$_a$	40,31$_a$	40,58$_a$	42,21
	to a large extent	17,02$_a$	15,64$_a$	10,14$_a$	15,93
	exceedingly, completely	9,44$_a$	9,03$_a$	7,25$_a$	9,10
$\chi^2 = 16{,}124$, $p = 0{,}096$, $C = 0{,}105$					

Did you feel accepted by the facilitator?	I haven't participated	11,89$_a$	14,76$_a$	14,49$_a$	13,03
	barely, not at all	9,32$_a$	6,39$_a$	12,32$_a$	8,69
	to a small extent	6,41$_a$	6,39$_a$	9,42$_a$	6,69
	hard to say	36,13$_a$	37,89$_a$	35,51$_a$	36,62
	to a large extent	20,40$_a$	22,69$_a$	18,84$_a$	20,97
	exceedingly, completely	15,85$_a$	11,89$_a$	9,42$_a$	14,00
$\chi^2 = 16,060$, $p = 0,098$, $C = 0,105$					
Were you able to obtain information about the issues discussed during the activities?	I haven't participated	11,66$_a$	15,42$_a$	14,49$_a$	13,10
	barely, not at all	9,79$_a$	7,27$_a$	12,32$_a$	9,24
	to a small extent	6,29$_a$	5,07$_a$	7,97$_a$	6,07
	hard to say	42,54$_a$	40,31$_a$	36,23$_a$	41,24
	to a large extent	19,35$_a$	24,45$_a$	20,29$_a$	21,03
	exceedingly, completely	10,37$_a$	7,49$_a$	8,70$_a$	9,31
$\chi^2 = 16,401$, $p = 0,089$, $C = 0,106$					
Were you be able to get to know yourself better?	I haven't participated	11,77$_a$	16,52$_a$	13,77$_a$	13,45
	barely, not at all	11,42$_a$	9,91$_a$	14,49$_a$	11,24
	to a small extent	6,99$_a$	6,39$_a$	6,52$_a$	6,76
	hard to say	42,31$_a$	43,39$_a$	39,86$_a$	42,41
	to a large extent	17,48$_a$	16,52$_a$	14,49$_a$	16,90
	exceedingly, completely	10,02$_a$	7,27$_a$	10,87$_a$	9,24
$\chi^2 = 11,077$, $p = 0,352$, $C = 0,087$					

Were you able to develop methods of coping with difficulties or problems during the activities?	I haven't participated	11,19$_a$	16,74$_a$	15,22$_a$	13,31
	barely, not at all	11,66$_a$	10,35$_a$	16,67$_a$	11,72
	to a small extent	7,23$_a$	8,81$_a$	8,70$_a$	7,86
	hard to say	45,10$_a$	41,41$_a$	39,86$_a$	43,45
	to a large extent	16,20$_a$	16,08$_a$	11,59$_a$	15,72
	exceedingly, completely	8,62$_a$	6,61$_a$	7,97$_a$	7,93
$\chi^2 = 16,547$, p = 0,085, C = 0,106					
Was the atmosphere during the activities positive?	I haven't participated	11,77$_a$	16,52$_a$	15,22$_a$	13,59
	barely, not at all	9,32$_a$	7,71$_a$	12,32$_a$	9,10
	to a small extent	5,24$_a$	5,73$_a$	7,97$_a$	5,66
	hard to say	40,09$_a$	37,22$_a$	36,23$_a$	38,83
	to a large extent	21,21$_a$	22,91$_a$	15,22$_a$	21,17
	exceedingly, completely	12,35$_a$	9,91$_a$	13,04$_a$	11,66
$\chi^2 = 15,000$, p = 0,132, C = 0,101					
Will you use the experience gained during the activities in your daily life?	I haven't participated	11,54$_a$	15,42$_a$	14,49$_a$	13,03
	barely, not at all	11,66$_a$	9,91$_a$	15,94$_a$	11,52
	to a small extent	7,11$_a$	9,91$_a$	10,14$_a$	8,28
	hard to say	44,52$_a$	45,59$_a$	38,41$_a$	44,28
	to a large extent	16,55$_a$	13,22$_a$	13,77$_a$	15,24
	exceedingly, completely	8,62$_a$	5,95$_a$	7,25$_a$	7,66
$\chi^2 = 16,976$, p = 0,075, C = 0,108					

Would you like to continue to participate in such activities?	I haven't participated	11,42$_a$	14,32$_a$	12,32$_a$	12,41
	barely, not at all	11,54$_a$	11,67$_a$	17,39$_a$	12,14
	to a small extent	6,29$_a$	7,05$_a$	8,70$_a$	6,76
	hard to say	43,59$_a$	42,73$_a$	34,78$_a$	42,48
	to a large extent	16,20$_a$	14,54$_a$	18,12$_a$	15,86
	exceedingly, completely	10,96$_a$	9,69$_a$	8,70$_a$	10,34

$\chi^2 = 10{,}621$, $p = 0{,}388$, $C = 0{,}085$

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The last component of evaluation of the prevention education activities concerns benefits gained depending on who the facilitator was (Table 42). The pupils' answers about school teachers and external experts differ significantly between the groups (respectively: chi = 19.045, p = 0.040 and chi = 20.104, p = 0.028). Pupils with a high level of engagement in problematic behaviours less commonly deem the work of school teachers beneficial – the answer "I didn't benefit at all" is chosen by 23.91% of respondents in this group, whereas in the two other groups – approximately by 15–16%. Involvement of external experts is rated similarly – the answer indicating complete lack of benefits was selected by 29.71% of individuals from the group with a high level of engagement in problematic behaviours, 22.03% in the group with a moderate level of engagement in problematic behaviours and 18.53% in the low-level group. The pupils' answers do not exhibit a clear trend in assessment of a single group of facilitators. For teachers acting as facilitators, over 28% of pupils in total declared that it was beneficial. When it comes to school counsellors or psychologists, it is more than 27%, for representatives of services – 25%, for counselling centre experts – 17%, and for external prevention experts – approximately 13%.

Table 42. Opinions of primary school pupils of grades 4–8 on how beneficial prevention education activities were, depending on the facilitators

Facilitator of prevention education activities		LPBps	MPBps	HPBps	Total
		%	%	%	%
School teachers	I haven't participated	$11,42_{a}$	$14,10_{a}$	$13,04_{a}$	12,41
	I didn't benefit from it at all	$15,27_{a}$	$16,08_{a}$	$23,91_{b}$	16,34
	I didn't benefit from it	$6,76_{a}$	$5,95_{a}$	$7,97_{a}$	6,62
	hard to say	$36,83_{a}$	$33,70_{a}$	$39,13_{a}$	36,07
	I benefited from it	$22,03_{a}$	$23,79_{a}$	$13,04_{b}$	21,72
	I benefited from it a lot	$7,69_{a}$	$6,39_{a}$	$2,90_{a}$	6,83
$\chi^2 = 19,045$, $p = 0,040$, $C = 0,114$					
School counsellor or psychologist	I haven't participated	$13,40_{a}$	$13,66_{a}$	$12,32_{a}$	13,38
	I didn't benefit from it at all	$16,67_{a}$	$17,62_{a}$	$23,19_{a}$	17,59
	I didn't benefit from it	$9,44_{a}$	$8,37_{a}$	$14,49_{a}$	9,59
	hard to say	$31,93_{a}$	$33,92_{a}$	$30,43_{a}$	32,41
	I benefited from it	$21,79_{a}$	$19,38_{a}$	$14,49_{a}$	20,34
	I benefited from it a lot	$6,76_{a}$	$7,05_{a}$	$5,07_{a}$	6,69
$\chi^2 = 11,798$, $p = 0,299$, $C = 0,090$					
Psychological and pedagogical counselling centre experts, as part of school supervision	I haven't participated	$16,20_{a}$	$16,08_{a}$	$18,12_{a}$	16,34
	I didn't benefit from it at all	$18,76_{a}$	$20,48_{a}$	$28,99_{a}$	20,28
	I didn't benefit from it	$10,02_{a}$	$9,91_{a}$	$10,14_{a}$	10,00
	hard to say	$36,83_{a}$	$35,46_{a}$	$34,06_{a}$	36,14
	I benefited from it	$12,70_{a}$	$11,89_{a}$	$5,80_{a}$	11,79
	I benefited from it a lot	$5,48_{a}$	$6,17_{a}$	$2,90_{a}$	5,45
$\chi^2 = 13,671$, $p = 0,189$, $C = 0,097$					

Representatives of local services (e.g. police, city guard)	I haven't participated	12,70$_a$	12,78$_a$	13,04$_a$	12,76
	I didn't benefit from it at all	17,72$_a$	19,16$_a$	23,91$_a$	18,76
	I didn't benefit from it	8,28$_a$	7,93$_a$	10,14$_a$	8,34
	hard to say	35,90$_a$	32,38$_a$	36,23$_a$	34,83
	I benefited from it	20,05$_a$	22,25$_a$	13,77$_a$	20,14
	I benefited from it a lot	5,36$_a$	5,51$_a$	2,90$_a$	5,17
$\chi^2 = 9{,}602$, $p = 0{,}476$, $C = 0{,}081$					
External prevention experts from NGOs and companies (foundations, associations, experts, training centres)	I haven't participated	16,78$_a$	20,26$_a$	20,29$_a$	18,21
	I didn't benefit from it at all	18,53$_a$	22,03$_a$	29,71$_b$	20,69
	I didn't benefit from it	9,91$_a$	7,27$_a$	7,25$_a$	8,83
	hard to say	40,91$_a$	36,56$_a$	36,23$_a$	39,10
	I benefited from it	9,32$_a$	9,91$_a$	4,35$_a$	9,03
	I benefited from it a lot	4,55$_a$	3,96$_a$	2,17$_a$	4,14
$\chi^2 = 20{,}104$, $p = 0{,}028$, $C = 0{,}117$					

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The same aspects, assessed by secondary school pupils with various levels of engagement in problematic behaviours, are described below.

4.2.2. Secondary school pupils

The responses of secondary school pupils indicate that the most frequent theme of prevention education activities was online safety (Table 43). Approximately 44% of respondents had one or more class hours dedicated to this subject. The number of hours varied depending on the level of engagement in problematic behaviours (chi = 26.403, p = 0.003), although the effect size is small (C = 0.139). Pupils with a moderate

(2.95%) and high level of engagement in problematic behaviours (4.35%) declared that they had more than 10 hours of activities slightly more often.

Another activity organised with similar frequency was class integration. 43.44% of youth had one or more hours of integration activities. Engagement in problem problematic behaviours is not a source of differences in this case. Two other frequently occurring subjects are legal drug use (smoking, drinking alcohol) – 41.43% of pupils indicated that such activities have been organised, and dealing with cyberbullying – 39.64%. For both subjects, there are differences between the groups of pupils (legal drug use: chi = 21.223, p = 0.020, cyberbullying: chi = 18.321, p = 0.049). These differences boil down to the fact that pupils with a moderate level of engagement in problematic behaviours more commonly declare that there have been no activities dedicated to legal drugs (28.64% of individuals from the group), while individuals from the group with a high level of engagement in problematic behaviours more often declare that coping with stress was discussed during more than 11 class hours (3.26%).

The least frequent meetings, in the pupils' opinion, were dedicated to coping with mental crisis (in total, 24.97% of respondents indicated that such activities have been organised) and navigating new, difficult situations (20.13% in total).

Aside from the aforementioned subjects, there were also statistically significant differences between the groups in terms of two other issues: support of personal development (chi = 19.092, p = 0.039) and behaviours which may lead to an addiction (chi = 18.821, p = 0.043). For former issue, youth with a high level of problems more frequently indicated over 11 hours of meetings. For the latter issue, the same group of pupils chose 5–10 hours more often than their peers.

Table 43. Number of hours and themes of prevention education activities addressed to secondary school pupils

Theme of prevention education activities		NZPpp	UZPpp	WZPpp	Total
		%	%	%	%
Support of personal development (e.g. self-esteem, values, self-discovery)	I don't know	$40,64_{a}$	$33,86_{a}$	$38,32_{a}$	37,78
	there have been no such activities	$33,15_{a}$	$39,32_{a}$	$35,33_{a}$	35,77
	1–4 class hours	$20,97_{a}$	$19,77_{a}$	$17,66_{a}$	19,67
	5–10 class hours	$3,37_{a}$	$5,45_{a}$	$4,35_{a}$	4,32
	11–30 class hours	$0,75_{a}$	$1,36_{a,b}$	$2,45_{b}$	1,42
	more than 30 class hours	$1,12_{a}$	$0,23_{a}$	$1,90_{b}$	1,04
$\chi^2 = 19,092$, $p = 0,039$, $C = 0,118$					
Developing relationships and contacts with peers (e.g. conflict resolution, communication, listening to others)	I don't know	$38,39_{a}$	$33,41_{a}$	$36,96_{a}$	36,36
	there have been no such activities	$31,46_{a}$	$36,82_{a}$	$33,97_{a}$	33,90
	1–4 class hours	$23,97_{a}$	$22,73_{a}$	$19,29_{a}$	22,28
	5–10 class hours	$3,37_{a}$	$4,77_{a}$	$5,71_{a}$	4,47
	11–30 class hours	$1,69_{a}$	$1,59_{a}$	$2,72_{a}$	1,94
	more than 30 class hours	$1,12_{a}$	$0,68_{a}$	$1,36_{a}$	1,04
$\chi^2 = 11,265$, $p = 0,337$, $C = 0,091$					
Motivation, drive to learn	I don't know	$37,64_{a}$	$33,18_{a}$	$35,33_{a}$	35,54
	there have been no such activities	$35,58_{a}$	$39,32_{a}$	$36,68_{a}$	37,11
	1–4 class hours	$20,04_{a}$	$20,45_{a}$	$17,93_{a}$	19,60
	5–10 class hours	$4,12_{a}$	$5,23_{a}$	$5,98_{a}$	4,99
	11–30 class hours	$1,50_{a}$	$0,68_{a}$	$2,45_{a}$	1,49
	more than 30 class hours	$1,12_{a}$	$1,14_{a}$	$1,63_{a}$	1,27
$\chi^2 = 9,318$, $p = 0,502$, $C = 0,083$					

Online safety	I don't know	34,83$_a$	32,05$_a$	34,24$_a$	33,76
	there have been no such activities	20,41$_a$	26,59$_a$	19,84$_a$	22,28
	1–4 class hours	38,20$_a$	32,95$_a$	32,34$_a$	34,87
	5–10 class hours	5,24$_a$	4,77$_a$	8,15$_a$	5,89
	11–30 class hours	0,75$_b$	2,95$_a$	4,35$_a$	2,46
	more than 30 class hours	0,56$_a$	0,68$_a$	1,09$_a$	0,75
$\chi^2 = 26,403$, $p = 0,003$, $C = 0,139$					
Dealing with cyberbullying	I don't know	36,89a	32,73a	34,51a	34,87
	there have been no such activities	23,41$_a$	28,41$_a$	25,00$_a$	25,48
	1–4 class hours	33,90$_a$	33,18$_a$	29,62$_a$	32,49
	5–10 class hours	4,12$_a$	4,32$_a$	6,52$_a$	4,84
	11–30 class hours	0,94$_a$	0,91$_{a'b}$	3,26$_b$	1,56
	more than 30 class hours	0,75$_a$	0,45$_a$	1,09$_a$	0,75
$\chi^2 = 18,321$, $p = 0,049$, $C = 0,116$					
Verbal and physical aggression, bullying	I don't know	40,07$_a$	35,23$_a$	36,96$_a$	37,63
	there have been no such activities	29,03$_a$	34,32$_a$	29,89$_a$	31,00
	1–4 class hours	25,28$_a$	24,55$_a$	22,83$_a$	24,37
	5–10 class hours	4,31$_a$	3,86$_a$	6,52$_a$	4,77
	11–30 class hours	0,56$_a$	1,36$_a$	2,72$_a$	1,42
	more than 30 class hours	0,75$_a$	0,68$_a$	1,09$_a$	0,82
$\chi^2 = 15,479$, $p = 0,116$, $C = 0,107$					

Pupils' behaviours which can lead to an addiction (e.g. excessive internet use)	I don't know	$39,14_{a}$	$36,59_{a}$	$36,68_{a}$	37,63
	there have been no such activities	$27,53_{a}$	$33,41_{a}$	$31,25_{a}$	30,48
	1–4 class hours	$27,72_{a}$	$24,32_{a}$	$21,47_{a}$	24,89
	5–10 class hours	$3,37_{a}$	$4,32_{a,b}$	$7,34_{b}$	4,77
	11–30 class hours	$1,50_{a}$	$0,91_{a}$	$2,72_{a}$	1,64
	more than 30 class hours	$0,75_{a}$	$0,45_{a}$	$0,54_{a}$	0,60
$\chi^2 = 18,821, p = 0,043, C = 0,118$					
Smoking, drinking alcohol	I don't know	$37,45_{a}$	$31,59_{a}$	$34,78_{a}$	34,80
	there have been no such activities	$20,04_{b}$	$28,64_{a}$	$23,37_{a,b}$	23,77
	1–4 class hours	$33,33_{a}$	$32,50_{a}$	$29,35_{a}$	31,97
	5–10 class hours	$6,37_{a}$	$5,23_{a}$	$8,15_{a}$	6,48
	11–30 class hours	$1,69_{a}$	$1,36_{a}$	$3,80_{a}$	2,16
	more than 30 class hours	$1,12_{a}$	$0,68_{a}$	$0,54_{a}$	0,82
$\chi^2 = 21,223, p = 0,020, C = 0,125$					
Coping with mental crisis	I don't know	$41,57_{a}$	$34,32_{a}$	$37,50_{a}$	38,08
	there have been no such activities	$33,90_{a}$	$40,00_{a}$	$37,77_{a}$	36,96
	1–4 class hours	$19,66_{a}$	$19,09_{a}$	$14,95_{a}$	18,18
	5–10 class hours	$3,37_{a}$	$4,09_{a}$	$6,25_{a}$	4,40
	11–30 class hours	$1,12_{a}$	$1,59_{a}$	$2,45_{a}$	1,64
	more than 30 class hours	$0,37_{a}$	$0,91_{a}$	$1,09_{a}$	0,75
$\chi^2 = 17,165, p = 0,071, C = 0,112$					

Class integration activities	I don't know	$35,58_a$	$32,50_a$	$33,15_a$	33,90
	there have been no such activities	$18,16_a$	$27,73_a$	$23,10_a$	22,65
	1–4 class hours	$30,71_a$	$25,45_a$	$27,17_a$	28,02
	5–10 class hours	$11,42_a$	$11,14_a$	$10,60_a$	11,10
	11–30 class hours	$3,18_a$	$1,82_a$	$4,08_a$	2,98
	more than 30 class hours	$0,94_a$	$1,36_a$	$1,90_a$	1,34
$\chi^2 = 18,252$, p = 0,051, C = 0,116					
Activities dedicated to navigating new, difficult situations	I don't know	$43,63_a$	$39,77_a$	$39,40_a$	41,21
	there have been no such activities	$36,70_a$	$42,27_a$	$37,23_a$	38,67
	1–4 class hours	$13,48_a$	$13,64_a$	$13,32_a$	13,49
	5–10 class hours	$4,49_a$	$3,18_a$	$6,25_a$	4,55
	11–30 class hours	$0,94_a$	$0,91_a$	$2,17_a$	1,27
	more than 30 class hours	$0,75_a$	$0,23_a$	$1,63_a$	0,82
$\chi^2 = 15,815$, p = 0,105, C = 0,108					

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

Information about the form of organised activities does not differ materially between the groups of pupils (Table 44). In general, the most common experience is participation of the whole class or group from activity room. In total, 43.97% of pupils have had at least one activity organised in this form. A total of 39.49% of young people have participated in large group activities one or more times. The least frequent form was individual activity – 16.77% of pupils have taken part in at least one such meeting.

Table 44. Form of prevention education activities addressed to secondary school pupils

Form of prevention education activities		LPBss	MPBss	HPBss	Total
		%	%	%	%
Large group activities (entire school or several classes at once)	I don't know or I haven't participated	46,63$_a$	40,68$_a$	45,38$_a$	44,34
	there have been no activities in this form	17,04$_a$	15,91$_a$	15,22$_a$	16,17
	one class hour of activities	20,41$_a$	20,68$_a$	17,93$_a$	19,82
	2–4 class hours of activities	13,48$_a$	16,59$_a$	16,03$_a$	15,20
	more class hours of such activities	2,43$_a$	6,14$_a$	5,43$_a$	4,47
$\chi^2 = 13{,}655$, $p = 0{,}091$, $C = 0{,}100$					
Entire class or group from activity room	I don't know or I haven't participated	44,38$_a$	41,36$_a$	42,93$_a$	43,00
	there have been no activities in this form	10,30$_a$	13,64$_a$	16,30$_a$	13,04
	one class hour of activities	19,85$_a$	18,18$_a$	15,49$_a$	18,11
	2–4 class hours of activities	17,04$_a$	18,64$_a$	16,03$_a$	17,29
	more class hours of such activities	8,43$_a$	8,18$_a$	9,24$_a$	8,57
$\chi^2 = 10{,}104$, $p = 0{,}258$, $C = 0{,}086$					
Activities in a small group (several people)	I don't know or I haven't participated	50,00$_a$	46,14$_a$	46,74$_a$	47,84
	there have been no activities in this form	22,66$_a$	21,14$_a$	22,55$_a$	22,13
	one class hour of activities	15,17$_a$	15,00$_a$	15,49$_a$	15,20
	2–4 class hours of activities	6,74$_a$	10,91$_a$	9,51$_a$	8,87
	more class hours of such activities	5,43$_a$	6,82$_a$	5,71$_a$	5,96
$\chi^2 = 7{,}003$, $p = 0{,}536$, $C = 0{,}072$					

	I don't know or I haven't participated	$59{,}36_a$	$55{,}91_a$	$54{,}62_a$	56,93
	there have been no activities in this form	$26{,}22_a$	$27{,}05_a$	$25{,}54_a$	26,30
Individual activities	one class hour of activities	$6{,}55_a$	$7{,}50_a$	$10{,}33_a$	7,90
	2–4 class hours of activities	$3{,}37_a$	$4{,}55_a$	$5{,}16_a$	4,25
	more class hours of such activities	$4{,}49_a$	$5{,}00_a$	$4{,}35_a$	4,62
	$\chi^2 = 7{,}210$, $p = 0{,}514$, $C = 0{,}073$				

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05..

The feature of prevention education activities indicated by the highest percentage of pupils as present to a large extent or exceedingly was a sense that they could ask follow-up questions, have a discussion or comment on the presented content. In total, 26.23% of pupils appreciated this aspect of activities (Table 45). Its assessment differed between the groups and the difference boils down to the option "hard to say", which was significantly more often selected by pupils with a moderate level of engagement in problematic behaviours (chi = 19.081, p = 0.039). The ability to obtain information on the subject-matter of the activities was appreciated by 24.07% of youth (total percentage value for the options "to a large extent", "exceedingly, completely"). This aspect was more likely to be noticed by individuals with a high level of engagement in problematic behaviours (chi = 32.245, p < 0.001).

Additionally, more than 20% of pupils agreed to a large extent or exceedingly with the statement about being accepted by the facilitator (23.77% of all pupils) and facilitators taking the participants' suggestions into account (21.16% of all pupils). The latter one of these aspects was more frequently perceived as less present by youth with a high risk index (chi = 21.877, p = 0.016).

The answers: "barely, not at all" or "to a small extent" were chosen the most frequently for willingness to continue the activities (23.17% of all pupils), being ready to use the experience gained in daily lives (22.73%) and ha-

ving a sense that pupils can be honest during the activities, in particular when it comes to difficult subjects (22.05%). None of these three categories varied significantly between the three groups of pupils. However, there were significant differences when it comes to three other opinions. The first one is the ability to express views which are personally important during the activities. Both positive and negative rating of this feature was assigned by 19% of individuals. Pupils with a low problem index found it the most difficult to assess this aspect (41.01% of individuals in this group, chi = 20.542, p = 0.025). The second element with a varied rating is the ability to get to know oneself better during the activities. This opportunity was noticed to a large extent primarily by individuals from the HPB group – 6.52% compared with 2.81% in the LPB group and 3.18% in the MPB group (chi = 20.974, p = 0.021). The last difference concerns a positive atmosphere during the activities. Pupils who rarely behave in a problematic way indicated much more often that there was a lot of such positivity (20.6%, compared with 14.22% in the MPB group and 15.22% in the HPB group, chi = 22.770, p = 0.012).

Table 45. Opinions of secondary school pupils on the method of conducting prevention education activities as well as their effects

Opinion on the activities		LPBss	MPBss	HPBss	Total
		%	%	%	%
In general, were you satisfied with the activities?	I haven't participated	$23,03_{a}$	$19,77_{a}$	$18,48_{a}$	20,72
	barely, not at all	$11,05_{a}$	$12,50_{a}$	$14,13_{a}$	12,37
	to a small extent	$8,05_{a}$	$10,00_{a}$	$10,87_{a}$	9,46
	hard to say	$42,70_{a}$	$45,45_{a}$	$41,85_{a}$	43,37
	to a large extent	$11,80_{a}$	$9,77_{a}$	$10,87_{a}$	10,88
	exceedingly, completely	$3,37_{a}$	$2,50_{a}$	$3,80_{a}$	3,20
$\chi^2 = 8,915$, p = 0,540, C = 0,081					
Did you like the way the activities were conducted?	I haven't participated	$23,03_{a}$	$19,55_{a}$	$17,39_{a}$	20,34
	barely, not at all	$9,55_{a}$	$11,59_{a}$	$13,86_{a}$	11,40
	to a small extent	$9,93_{a}$	$8,41_{a}$	$10,33_{a}$	9,54
	hard to say	$36,70_{a}$	$44,77_{a}$	$39,13_{a}$	40,01
	to a large extent	$16,29_{a}$	$12,27_{a}$	$14,95_{a}$	14,61
	exceedingly, completely	$4,49_{a}$	$3,41_{a}$	$4,35_{a}$	4,10
$\chi^2 = 15,596$, p = 0,112, C = 0,107					
Did the facilitator seem to take the suggestions of pupils/ participants into account?	I haven't participated	$23,41_{a}$	$20,00_{a}$	$17,12_{a}$	20,57
	barely, not at all	$9,18_{a}$	$12,05_{a}$	$12,77_{a}$	11,10
	to a small extent	$5,62_{a}$	$5,91_{a}$	$11,41_{b}$	7,30
	hard to say	$39,33_{a}$	$41,82_{a}$	$38,32_{a}$	39,87
	to a large extent	$16,10_{a}$	$15,45_{a}$	$16,03_{a}$	15,87
	exceedingly, completely	$6,37_{a}$	$4,77_{a}$	$4,35_{a}$	5,29
$\chi^2 = 21,877$, p = 0,016, C = 0,127					

Did you feel that you could ask follow-up questions, have a discussion, make comments?	I haven't participated	$23,60_{a}$	$19,77_{a}$	$17,39_{a}$	20,64
	barely, not at all	$8,43_{a}$	$11,14_{a}$	$12,50_{a}$	10,43
	to a small extent	$6,74_{a}$	$6,14_{a}$	$7,88_{a}$	6,86
	hard to say	$32,21_{b}$	$40,23_{a}$	$35,87_{a,b}$	35,84
	to a large extent	$21,91_{a}$	$17,27_{a}$	$17,93_{a}$	19,30
	exceedingly, completely	$7,12_{a}$	$5,45_{a}$	$8,42_{a}$	6,93
$\chi^2 = 19,081$, p = 0,039, C = 0,118					
Did you feel that you could express views that are important to you?	I haven't participated	$23,22_{a}$	$20,68_{a}$	$18,75_{a}$	21,16
	barely, not at all	$8,43_{a}$	$11,14_{a}$	$11,96_{a}$	10,28
	to a small extent	$8,99_{a}$	$7,50_{a}$	$11,14_{a}$	9,09
	hard to say	$41,01_{a,b}$	$44,09_{a}$	$34,78_{b}$	40,31
	to a large extent	$15,17_{a}$	$12,27_{a}$	$17,12_{a}$	14,75
	exceedingly, completely	$3,18_{a}$	$4,32_{a}$	$6,25_{a}$	4,40
$\chi^2 = 20,542$, p = 0,025, C = 0,123					
Did you feel that you could be honest, especially when it comes to difficult subjects?	I haven't participated	$23,97_{a}$	$20,45_{a}$	$18,75_{a}$	21,39
	barely, not at all	$10,86_{a}$	$12,95_{a}$	$14,13_{a}$	12,44
	to a small extent	$8,61_{a}$	$9,09_{a}$	$11,68_{a}$	9,61
	hard to say	$41,20_{a}$	$42,50_{a}$	$39,67_{a}$	41,21
	to a large extent	$13,30_{a}$	$10,91_{a}$	$11,68_{a}$	12,07
	exceedingly, completely	$2,06_{a}$	$4,09_{a}$	$4,08_{a}$	3,28
$\chi^2 = 12,979$, p = 0,225, C = 0,098					

Did you feel accepted by the facilitator?	I haven't participated	23,97$_{a}$	20,00$_{a}$	18,21$_{a}$	21,09
	barely, not at all	8,05$_{a}$	9,32$_{a}$	10,60$_{a}$	9,17
	to a small extent	4,12$_{a}$	3,18$_{a}$	7,34$_{a}$	4,69
	hard to say	38,76$_{a}$	45,45$_{a}$	39,95$_{a}$	41,28
	to a large extent	17,42$_{a}$	14,77$_{a}$	16,30$_{a}$	16,24
	exceedingly, completely	7,68$_{a}$	7,27$_{a}$	7,61$_{a}$	7,53
$\chi^2 = 17,281$, $p = 0,068$, $C = 0,113$					
Were you able to obtain information about the issues discussed during the activities?	I haven't participated	24,34$_{a}$	20,00$_{a,b}$	17,66$_{b}$	21,09
	barely, not at all	7,49$_{a}$	9,77$_{a}$	12,23$_{a}$	9,54
	to a small extent	5,62$_{a,b}$	4,55$_{a}$	8,70$_{b}$	6,11
	hard to say	37,27$_{a}$	45,00$_{a}$	35,05$_{a}$	39,20
	to a large extent	21,91$_{b}$	15,68$_{a}$	19,57$_{a,b}$	19,23
	exceedingly, completely	3,37$_{a}$	5,00$_{a}$	6,79$_{a}$	4,84
$\chi^2 = 32,245$, $p < 0,001$, $C = 0,153$					
Were you be able to get to know yourself better?	I haven't participated	23,97$_{a}$	20,45$_{a}$	19,29$_{a}$	21,54
	barely, not at all	11,80$_{a}$	13,18$_{a}$	11,68$_{a}$	12,22
	to a small extent	8,05$_{a}$	9,32$_{a}$	12,50$_{a}$	9,69
	hard to say	42,70$_{a}$	45,68$_{a}$	38,59$_{a}$	42,55
	to a large extent	10,67$_{a}$	8,18$_{a}$	11,41$_{a}$	10,06
	exceedingly, completely	2,81$_{a}$	3,18$_{a,b}$	6,52$_{b}$	3,95
$\chi^2 = 20,974$, $p = 0,021$, $C = 0,124$					

Were you able to develop methods of coping with difficulties or problems during the activities?	I haven't participated	$23,97_{a}$	$20,45_{a}$	$19,29_{a}$	21,54
	barely, not at all	$11,61_{a}$	$12,95_{a}$	$13,59_{a}$	12,59
	to a small extent	$7,87_{a}$	$7,50_{a}$	$10,33_{a}$	8,42
	hard to say	$42,70_{a}$	$44,09_{a}$	$39,13_{a}$	42,18
	to a large extent	$11,42_{a}$	$12,27_{a}$	$11,96_{a}$	11,85
	exceedingly, completely	$2,43_{a}$	$2,73_{a}$	$5,71_{a}$	3,43
$\chi^2 = 14,657$, p = 0,145, C = 0,104					
Was the atmosphere during the activities positive?	I haven't participated	$24,16_{a}$	$20,00_{a}$	$19,29_{a}$	21,46
	barely, not at all	$7,49_{a}$	$10,45_{a}$	$11,96_{a}$	9,69
	to a small extent	$5,99_{a}$	$5,45_{a}$	$7,34_{a}$	6,18
	hard to say	$38,01_{a}$	$43,86_{a}$	$39,13_{a}$	40,24
	to a large extent	$20,60_{b}$	$14,32_{a}$	$15,22_{a,b}$	17,06
	exceedingly, completely	$3,75_{a}$	$5,91_{a}$	$7,07_{a}$	5,37
$\chi^2 = 22,770$, p = 0,012, C = 0,129					
Will you use the experience gained during the activities in your daily life?	I haven't participated	$23,97_{a}$	$20,00_{a}$	$19,57_{a}$	21,46
	barely, not at all	$12,73_{a}$	$13,41_{a}$	$14,13_{a}$	13,34
	to a small extent	$8,24_{a}$	$9,32_{a}$	$11,14_{a}$	9,39
	hard to say	$45,51_{a}$	$45,68_{a}$	$41,30_{a}$	44,41
	to a large extent	$7,68_{a}$	$7,73_{a}$	$10,87_{a}$	8,57
	exceedingly, completely	$1,87_{a}$	$3,86_{a}$	$2,99_{a}$	2,83
$\chi^2 = 12,555$, p = 0,250, C = 0,096					

Would you like to continue to participate in such activities?	I haven't participated	$24{,}34_a$	$20{,}68_a$	$19{,}02_a$	21,68
	barely, not at all	$13{,}30_a$	$14{,}77_a$	$16{,}03_a$	14,53
	to a small extent	$6{,}74_a$	$8{,}64_a$	$11{,}41_a$	8,64
	hard to say	$42{,}32_a$	$43{,}86_a$	$37{,}77_a$	41,58
	to a large extent	$10{,}67_a$	$8{,}18_a$	$10{,}87_a$	9,91
	exceedingly, completely	$2{,}62_a$	$3{,}86_a$	$4{,}89_a$	3,65
$\chi^2 = 16{,}843$, $p = 0{,}078$, $C = 0{,}111$					

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The last evaluated area – benefits derived from the activities depending on who the facilitator was – does not differ significantly between groups with different levels of engagement in problematic behaviours (Table 46). The answers: "I benefited from it" and "I benefited from it a lot" were selected the most frequently in the case of a school counsellor or psychologist, by 20.27% of respondents in total. At the same time, 28.24% of pupils indicated that they didn't benefit or didn't benefit at all from the activities. The highest percentage of answers indicating the lack of benefits was for counselling centre experts (30.63%) and representatives of local services (29.36%). School teachers were rated positively by 18.33% and negatively by 26.61% of youth.

Table 46. Opinions of secondary school pupils on how beneficial prevention education activities were, depending on the facilitators

Facilitator of prevention education activities		LPBss	MPBss	HPBss	Total
		%	%	%	%
School teachers	I haven't participated	25,66$_a$	21,36$_a$	17,93$_a$	22,13
	I didn't benefit from it at all	14,61$_a$	18,64$_a$	20,11$_a$	17,44
	I didn't benefit from it	8,05$_a$	10,00$_a$	9,78$_a$	9,17
	hard to say	33,33$_a$	31,59$_a$	33,97$_a$	32,94
	I benefited from it	15,73$_a$	15,45$_a$	15,76$_a$	15,65
	I benefited from it a lot	2,62$_a$	2,95$_a$	2,45$_a$	2,68
$\chi^2 = 12,182$, $p = 0,273$, $C = 0,095$					
School counsellor or psychologist	I haven't participated	24,91$_a$	19,77$_a$	18,75$_a$	21,54
	I didn't benefit from it at all	16,29$_a$	18,86$_a$	16,03$_a$	17,06
	I didn't benefit from it	11,42$_a$	10,68$_a$	11,41$_a$	11,18
	hard to say	28,28$_a$	29,55$_a$	32,88$_a$	29,96
	I benefited from it	16,10$_a$	17,95$_a$	17,66$_a$	17,14
	I benefited from it a lot	3,00$_a$	3,18$_a$	3,26$_a$	3,13
$\chi^2 = 8,368$, $p = 0,593$, $C = 0,079$					

Psychological and pedagogical counselling centre experts, as part of school supervision	I haven't participated	$27,90_a$	$22,73_a$	$20,38_a$	24,14
	I didn't benefit from it at all	$18,16_a$	$21,59_a$	$17,39_a$	19,08
	I didn't benefit from it	$11,24_a$	$11,82_a$	$11,68_a$	11,55
	hard to say	$30,52_a$	$30,00_a$	$35,05_a$	31,59
	I benefited from it	$9,55_a$	$10,45_a$	$11,68_a$	10,43
	I benefited from it a lot	$2,62_a$	$3,41_a$	$3,80_a$	3,20
$\chi^2 = 11,897$, p = 0,292, C = 0,094					
Representatives of local services (e.g. police, city guard)	I haven't participated	$25,84_a$	$22,27_a$	$18,21_a$	22,58
	I didn't benefit from it at all	$17,23_a$	$21,36_a$	$16,30_a$	18,33
	I didn't benefit from it	$11,24_a$	$9,32_a$	$12,77_a$	11,03
	hard to say	$29,03_a$	$29,55_a$	$33,97_a$	30,55
	I benefited from it	$13,67_a$	$14,09_a$	$15,22_a$	14,23
	I benefited from it a lot	$3,00_a$	$3,41_a$	$3,53_a$	3,28
$\chi^2 = 13,800$, p = 0,182, C = 0,101					
External prevention experts from NGOs and companies (foundations, associations, experts, training centres)	I haven't participated	$27,53_a$	$25,68_a$	$19,84_a$	24,81
	I didn't benefit from it at all	$18,73_a$	$22,50_a$	$16,85_a$	19,45
	I didn't benefit from it	$10,11_a$	$9,55_a$	$10,05_a$	9,91
	hard to say	$31,65_a$	$31,14_a$	$36,68_a$	32,86
	I benefited from it	$9,74_a$	$8,18_a$	$13,04_a$	10,13
	I benefited from it a lot	$2,25_a$	$2,95_a$	$3,53_a$	2,83
$\chi^2 = 17,403$, p = 0,066, C = 0,113					

Note. Values in the same row and sub-table without the same subscript ($_a$ or $_b$) differ significantly at the level of p = 0.05.

The foregoing information indicates that pupils have varied opinions regarding the subject-matter, efficiency and usefulness of prevention education activities. At the same time, according to these data, 20% of pupils on average declare that they didn't benefit from the forms of support listed here. Regardless of these opinions, prevention education activities are among the compulsory tasks carried out in schools. In view of the above, the next chapter presents differences in protective factors, risk factors and problematic behaviours recorded during one school year among pupils with various levels of engagement in problematic behaviours.

4.3. Changes in protective factors, risk factors and problematic behaviours of pupils and their participation in prevention education activities

Protective factors, risk factors and problematic behaviours described in this chapter were presented using standardized T-scores. This type of standardisation allowed for the variables to be compared and, as a result, for leading results to be indicated in each group of pupils. Raw values were used to estimate tests of significance. On the other hand, the regression analysis was based on the values of differences between measurements. This way, the change in problematic factors and behaviours was estimated, and then their correlation with participation in prevention education activities was verified. The appendix contains information on the definitions of individual scales – protective factors, risk factors, problematic behaviours – and the number of items measuring them.

4.3.1. Primary school pupils of grades 4–8

The description begins with characterisation of the pupils' environment and their behaviour at the time of the first measurement (autumn 2022) and second measurement (autumn 2023). The data were described, and then compiled, using tests that indicate significant differences. The scale of values on the following charts was purposefully narrowed down to enhance data readability. This was due to the typical tendency of group results to oscillate around the mean.

4.3.1.1. Pupils with a low level of engagement in problematic behaviours (LPBps)

At the beginning of the research, young people from grades 4–8 of primary school with a low level of engagement in problematic behaviours assigned the highest scores to two protective factors: the school environment (T-scores: M = 52.60, SD = 9.36) and supportive role of teachers (M = 52.97, SD = 9.64) – Table 47, Figure 18. This is associated with the pupils' generally positive attitude towards school, learning, teachers and peers. It was also important for teachers to focus not only on grades, but also on the pupils' effort and work, andto show the pupils support during classes. The third protective factor that stood out was the young people's belief that problematic behaviours are not permitted (M = 52.16, SD = 8.46) and engaging in them is not condoned. On the other hand, the lowest values were recorded for peer support (M = 50.61, SD = 9.80) and parental control (M = 50.86, SD = 9.49) of how children spend their free time and what actions they take.

In the group of risk factors, the highest values were observed for: experience of cyberbullying (M = 48.84, SD = 6.83), skipping school without a justification (M = 48.41, SD = 6.93) and exclusion from the peer group, understood primarily as a sense of being outside the mainstream peer life (M = 49.58, SD = 9.31). Based on the pupils' responses, these three areas could contribute the most to the risk of engagement in problematic behaviours. On the other hand, the lowest risk was associated with observing negative examples in the environment. This includes negative examples on the part of peers (M = 46.01, SD = 7.65), peer approval of problematic behaviours (M = 46.21, SD = 7.77), as well as observing unconstructive behaviours at home (M = 46.43, SD = 8.15). These environmental factors potentially had the lowest negative impact.

Problematic behaviours in primary school pupils were, in general, at a low level. The overall index, which includes use of legal drugs and violence, had the lowest value (M = 46.43, SD = 8.15). More frequent problems concerned internet use (M = 46.43, SD = 8.15) and risky online behaviour (M = 46.43, SD = 8.15).

Table 47. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a low level of engagement in problematic behaviours – LPBps (T-scores)

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2	
		M	SD	M	SD
Protective factors	School environment	52,60	9,36	49,77	9,52
	Peer support	50,61	9,80	50,66	9,51
	Support of educators	51,29	9,38	50,63	9,19
	Supportive attitude of teachers	52,97	9,64	51,03	10,67
	Parental control	50,86	9,49	51,89	9,79
	Common activities with parents	51,70	9,56	50,59	9,46
	Belief that risky behaviours are not permitted	52,16	8,46	49,53	9,17
	Cognitive curiosity	51,10	10,02	51,00	9,98
	Engagement in extracurricular activity	51,10	10,31	51,74	10,26
	Social and emotional intelligence	51,74	10,02	51,74	9,46
Risk factors	Examples of risky behaviours among peers	46,01	7,65	50,56	8,98
	Approval of peers' risky behaviours	46,21	7,77	49,51	8,36
	Family model of risky behaviours	46,43	8,15	49,34	8,90
	Access to psychoactive substances	47,14	6,91	49,13	8,13
	Experience of violence	47,65	7,69	49,94	8,95
	Experience of cyberbullying	48,84	6,83	50,38	7,80
	Low self-esteem	47,62	9,21	48,98	9,23
	Unconstructive methods of coping with stress	47,69	8,98	48,87	9,66
	Skipping school without a justification	48,41	6,93	50,50	8,34
	Peer exclusion	49,58	9,31	49,81	9,02

Problematic behaviours	Overall risky behaviour index	44,12	5,10	49,66	9,34
	Problematic internet use	47,83	8,27	49,57	9,20
	Risky online behaviour	47,93	7,36	49,78	8,20

The same data are presented on the next chart, where a generally higher level of protective factors can be observed during the first measurement, along with lower values of risk factors (Figure 18). One year later – during the second measurement – the pupils' environment had changed, primarily in terms of risk factors, whose level had increased. The protective factors that stood out during the second measurement are: parental control (M = 51.89, SD = 9.79), engagement extracurricular activity developing the pupils' interests (M = 51.74, SD = 10.26) and overall social and emotional intelligence (M = 51.74, SD = 9.46). The risk factors with the highest values are: examples of problematic behaviour among peers (M = 50.56, SD = 8.98), the tendency to skip classes (M = 50.50, SD = 8.34) and the experience of cyberbullying (M = 50.38, SD = 7.80). Therefore, changes over one year are not only quantitative, but also qualitative, among others when it comes to bigger negative influence of peers.

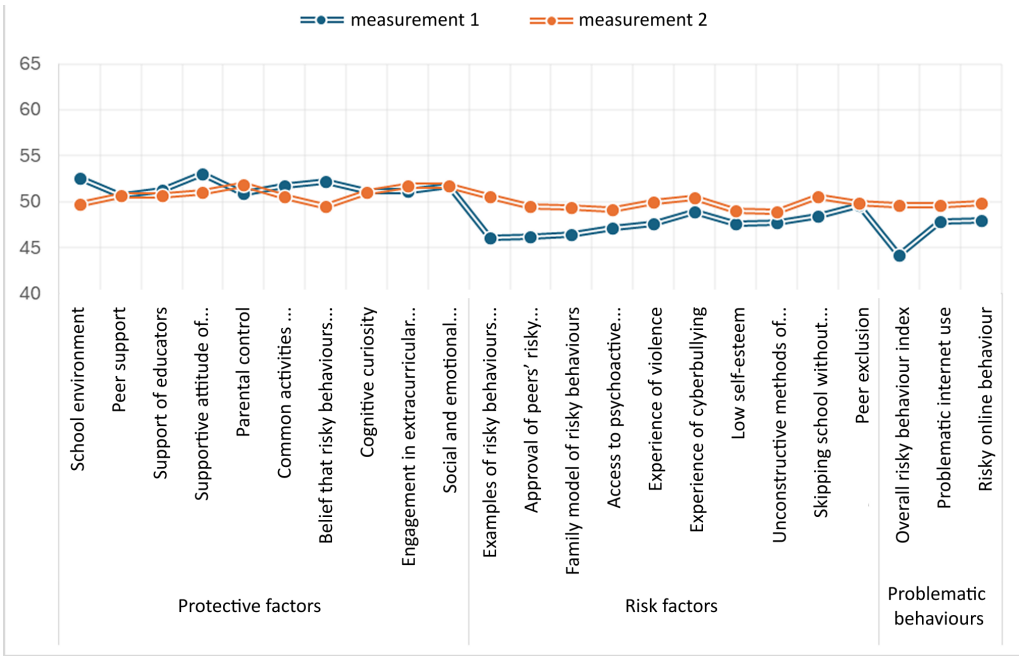

Figure 18. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a low level of engagement in problematic behaviours – LPBps (T-scores)

The quantitative changes are presented in Table 48, which indicates the variables with statistically significant differences. The Cohen's d effect size values also contain important information. It shows the most significant changes between the first and the second measurement.

Pupils with a low level of engagement in problematic behaviours experienced the biggest change in the aforementioned example of unconstructive behaviours among peers (d = 0.425) and when it comes to overall index of risky behaviours (d = 0.530). In both cases, these variables have increased. Similarly, the negative influence on the part of family members (d = 0.300) and the respondents' acceptance of their peers' problematic behaviours have increased (d = 0.273). For other statistically significant differences, which can be seen in the Table, the size effect is smaller and does not exceed Cohen's d value of 0.25. The four mentioned above can be considered the most significant.

Table 48. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a low level of engagement in problematic behaviours (LPBps) – comparison between the first and the second measurement

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2		Comparison		
		M	SD	M	SD	t	p	d
Protective factors	School environment	11.35	2,70	10,54	2,81	7,258	< 0,001	0,248
	Peer support	12,14	4,18	12,21	4,11	-0,423	0,336	-0,014
	Support of educators	21,76	5,39	21,41	5,42	1,549	0,061	0,053
	Supportive attitude of teachers	32,97	6,30	31,64	7,02	5,037	< 0,001	0,172
	Parental control	12,76	4,76	13,24	4,83	-2,624	0,004	-0,090
	Common activities with parents	27,37	4,49	26,85	4,54	2,989	0,001	0,102
	Belief that risky behaviours are not permitted	27,99	5,38	27,09	5,73	3,482	< 0,001	0,119
	Cognitive curiosity	59,10	8,15	59,06	8,39	0,116	0,454	0,004
	Engagement in extracurricular activity	17,39	6,90	17,83	6,94	-1,771	0,038	-0,061
	Social and emotional intelligence	123,00	29,11	123,59	26,87	-0,519	0,302	-0,018

Risk factors	Examples of risky behaviours among peers	7,98	2,77	9,58	3,76	-12,449	< 0,001	-0,425
	Approval of peers' risky behaviours	8,88	4,01	10,42	4,74	-7,993	< 0,001	-0,273
	Family model of risky behaviours	8,68	8,41	11,72	9,69	-8,781	< 0,001	-0,300
	Access to psychoactive substances	5,17	2,22	5,87	2,92	-6,577	< 0,001	-0,225
	Experience of violence	2,17	4,03	3,38	5,34	-6,194	< 0,001	-0,211
	Experience of cyberbullying	7,19	2,85	7,75	3,29	-4,401	< 0,001	-0,150
	Low self-esteem	23,25	7,34	24,23	7,35	-3,548	< 0,001	-0,121
	Unconstructive methods of coping with stress	14,70	2,89	15,10	3,15	-3,552	< 0,001	-0,121
	Skipping school without a justification	0,71	2,25	1,28	2,87	-4,968	< 0,001	-0,170
	Peer exclusion	8,07	3,72	8,14	3,55	-0,471	0,319	-0,016
Problematic behaviours	Overall risky behaviour index	4,33	3,57	7,13	6,60	-15,455	< 0,001	-0,530
	Problematic internet use	4,08	3,98	5,07	4,96	-5,238	< 0,001	-0,18
	Risky online behaviour	0,90	1,90	1,28	2,24	-4,160	< 0,001	-0,142

The following section describes changes observed in pupils whose level of engagement in problematic behaviour was moderate when the research commenced.

4.3.1.2. Pupils with a moderate level of engagement in problematic behaviours (MPBps)

Pupils who engage in problematic behaviours to a moderate extent primarily noticed two protective factors at the beginning of the research (Table 49). These factors were: support of educators (M = 50.22, SD = 8.54) and their social and emotional intelligence (M = 50.13, SD = 7.91). In these pupils' case, it was important for educators to show care, support, listen to them and help them with difficulties. Their skills, on the other hand, concerned coping with emotions, understanding their own and other people's experiences as well as having interpersonal skills. The protective factor with the lowest value was the belief about problematic behaviours. Pupils tended to question prohibitions regarding use of legal drugs and violence (M = 46.67, SD = 8.19).

Risk factors with the highest values were related to family and peer environment. First and foremost, pupils sporadically observed problematic behavioural patterns in their families (M = 54.57, SD = 7.94). This influence was amplified by analogous behaviours of the pupils' peers (M = 53.37, SD = 6.82). Another factor associated with the peer group was its tendency to use violence (experience of violence: M = 53.59, SD = 8.04). Risk factors with the lowest values in the described group are mainly approval of problematic behaviour of peers (M = 51.36, SD = 7.09), as well as access to psychoactive substances (M = 51.16, SD = 7.69).

Among the three indicators of problematic behaviours, the one with the highest value was overall problematic behaviour, i.e. the pupils' tendency to use psychoactive substances and violence against others (M = 56.71, SD = 5.45). The least frequent one was pupils' engagement in risky behaviours online (M = 52.52, SD = 8.81).

Table 49. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a moderate level of engagement in problematic behaviours – MPBps (T-scores)

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2	
		M	SD	M	SD
Protective factors	School environment	48,34	8,95	47,53	9,07
	Peer support	49,77	8,43	50,67	9,40
	Support of educators	50,22	8,54	49,59	9,37
	Supportive attitude of teachers	49,12	9,16	47,63	10,71
	Parental control	49,70	8,60	50,27	8,95
	Common activities with parents	48,04	8,71	48,97	8,85
	Belief that risky behaviours are not permitted	46,67	8,19	46,94	8,06
	Cognitive curiosity	49,28	10,61	50,19	10,06
	Engagement in extracurricular activity	48,46	9,35	50,74	10,28
	Social and emotional intelligence	50,13	7,91	50,15	8,95

Risk factors	Examples of risky behaviours among peers	53,37	6,82	54,52	8,80
	Approval of peers' risky behaviours	51,36	7,09	51,85	8,35
	Family model of risky behaviours	54,57	7,94	53,34	8,99
	Access to psychoactive substances	51,16	7,69	51,76	8,77
	Experience of violence	53,59	8,04	53,46	9,37
	Experience of cyberbullying	52,38	8,18	52,73	8,75
	Low self-esteem	52,04	8,71	52,41	9,39
	Unconstructive methods of coping with stress	51,90	8,08	51,14	9,67
	Skipping school without a justification	50,33	7,76	52,18	8,92
	Peer exclusion	50,48	9,07	50,42	9,21
Problematic behaviours	Overall risky behaviour index	56,71	5,45	55,46	9,03
	Problematic internet use	53,15	8,18	53,45	8,92
	Risky online behaviour	52,52	8,81	53,11	9,23

Analysis of data from the Table above, presented in the form of a chart, demonstrates minor differences between the first and the second measurement when it comes to factors and pupils' behaviours (Figure 19). Moreover, unlike in the case of pupils with a low level of engagement in problematic behaviours, risk factors generally have higher values than protective factors. During the second measurement, the three main protective factors were peer support (M = 50.67, SD = 9.40), parental control of pupils' behaviour (M = 50.27, SD = 8.95) and young people's engagement in extracurricular sports or educational activity (M = 50.74, SD = 10.28). The risk factors with the highest values did not change during the second measurement and still pertained to behavioural models in the family and peer environment as well as experience of violence. Similarly, the configuration of problematic behavio-

urs did not change. Table 50 shows quantitative changes recorded between the first and the second measurement.

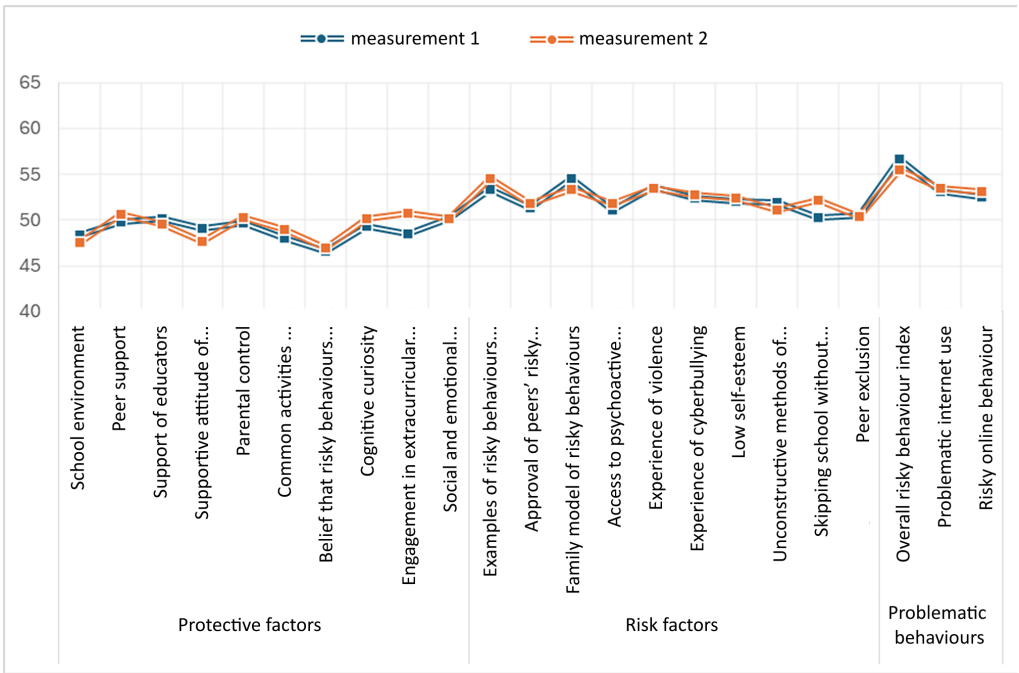

Figure 19. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a moderate level of engagement in problematic behaviours – MPBps (T-scores)

Quantitative depiction of the differences confirms the information from the above chart. The environment of pupils with a moderate level of engagement in problematic behaviours changed to a small extent and only in several areas (Table 50). The biggest change (for which the effect size was approximately 0.2) concerns engagement in extracurricular activity ($t = 4.702$, $p < 0.001$). Pupils choose extracurricular activities dedicated to their interests more often than during the first year. At the same time, it is one of the two protective factors which changed significantly during the school year. The second one is a decrease in teachers' support perceived by the pupils ($t = 3.018$, $p = 0.003$). More changes were recorded when it

comes to risk factors. The most significant ones include examples of risky behaviours among peers ($t = 3.928$, $p < 0.001$) and skipping school without a justification ($t = -4.439$, $p < 0.001$). Both these factors are higher at the end of the analysed year.

The level of engagement in problematic behaviours – their overall index and behaviours associated with the internet – did not change in a statistically significant way.

Table 50. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a moderate level of engagement in problematic behaviours (MPBps) – comparison between the first and the second measurement

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2		Comparison		
		M	SD	M	SD	t	p	d
Protective factors	School environment	10,04	2,73	9,80	2,74	1,799	0,073	0,084
	Peer support	11,83	3,75	12,15	4,09	-1,585	0,114	-0,074
	Support of educators	21,05	5,13	20,64	5,66	1,413	0,158	0,066
	Supportive attitude of teachers	30,24	6,47	29,13	7,43	3,018	0,003	0,142
	Parental control	12,25	4,37	12,51	4,49	-1,108	0,268	-0,052
	Common activities with parents	25,56	4,38	25,97	4,43	-1,880	0,061	-0,088
	Belief that risky behaviours are not permitted	26,35	4,95	26,34	5,23	,046	0,963	0,002
	Cognitive curiosity	57,58	8,52	58,38	8,17	-1,740	0,083	-0,082
	Engagement in extracurricular activity	15,53	5,98	17,11	7,00	-4,702	<0,001	-0,221
	Social and emotional intelligence	120,54	21,83	120,10	25,29	0,322	0,747	0,015

Risk factors	Examples of risky behaviours among peers	10,44	2,80	11,20	3,87	-3,928	<0,001	-0,184
	Approval of peers' risky behaviours	11,28	3,84	11,89	5,06	-2,361	0,019	-0,111
	Family model of risky behaviours	17,68	9,36	16,47	10,27	2,279	0,023	0,107
	Access to psychoactive substances	6,55	2,81	6,91	3,34	-2,166	0,031	-0,102
	Experience of violence	4,90	4,99	5,29	6,44	-1,232	0,219	-0,058
	Experience of cyberbullying	8,33	3,31	8,66	4,08	-1,520	0,129	-0,071
	Low self-esteem	26,81	7,62	27,32	8,57	-1,288	0,198	-0,06
	Unconstructive methods of coping with stress	16,05	2,74	15,88	3,31	1,044	0,297	0,049
	Skipping school without a justification	1,15	2,27	1,80	3,26	-4,439	<0,001	-0,208
	Peer exclusion	8,45	3,67	8,41	3,72	,175	0,862	0,008
Problematic behaviours	Overall risky behaviour index	10,81	5,40	10,79	7,44	-,175	0,861	-0,008
	Problematic internet use	6,85	5,11	7,17	5,57	-1,214	0,225	-0,058
	Risky online behaviour	1,96	2,63	2,19	2,87	-1,533	0,126	-0,072

The following section contains changes observed among primary school pupils with a high level of engagement in problematic behaviours.

4.3.1.3. Pupils with a high level of engagement in problematic behaviours (HPBps)

In the group of pupils with a high level of engagement in problematic behaviours, protective factors with the highest value during the first measurement (Table 51) were: support of educators (M = 49.30, SD = 9.57) and engagement in extracurricular activity (M = 50.83, SD = 10.86). Educators who showed care and provided assistance reduced the risk of problematic behaviours. Pupils' participation in activities which let them develop their interests served a similar function. The protective factor with the lowest value, on the other hand, was the pupils' belief that problematic behaviours are not permitted (M = 44.43, SD = 9.04).

The biggest risk factor at the time of the first measurement was access to psychoactive substances (M = 56.01, SD = 9.02). Pupils were convinced that it was easy to obtain alcohol. Additional adverse influence was primarily associated with negative behavioural patterns in the family environment (M = 55.59, SD = 8.75) and experience of violence (M = 55.62, SD = 11.14). Risk factors with the lowest values were skipping school without a justification (M = 52.78, SD = 8.51) and the sense of exclusion from the peer group (M = 51.64, SD = 9.07). The pupils' problematic behaviours mainly included substance use and violence (general index of M = 61.06, SD = 8.97).

Table 51. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a high level of engagement in problematic behaviours – HPBps (T-scores)

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2	
		M	SD	M	SD
Protective factors	School environment	47,67	9,71	46,76	9,21
	Peer support	48,89	8,97	50,93	8,90
	Support of educators	49,30	9,57	49,64	10,64
	Supportive attitude of teachers	47,58	9,66	47,27	10,35
	Parental control	48,47	9,45	49,83	9,79
	Common activities with parents	48,75	8,72	49,88	9,08
	Belief that risky behaviours are not permitted	44,43	9,04	45,56	9,69
	Cognitive curiosity	47,26	9,71	50,31	10,76
	Engagement in extracurricular activity	50,83	10,86	51,39	9,43
	Social and emotional intelligence	47,65	8,89	47,95	10,12
Risk factors	Examples of risky behaviours among peers	55,44	9,78	55,17	9,71
	Approval of peers' risky behaviours	55,28	9,60	52,31	9,45
	Family model of risky behaviours	55,59	8,75	52,74	9,88
	Access to psychoactive substances	56,01	9,02	52,61	9,16
	Experience of violence	55,62	11,14	53,11	9,67
	Experience of cyberbullying	55,20	9,46	52,03	7,54
	Low self-esteem	53,72	9,15	52,22	8,89
	Unconstructive methods of coping with stress	54,05	9,82	52,42	9,99
	Skipping school without a justification	52,78	8,51	53,02	9,56
	Peer exclusion	51,64	9,07	51,65	9,19

Problematic behaviours	Overall risky behaviour index	61,06	8,97	56,62	10,84
	Problematic internet use	54,49	9,14	52,92	9,67
	Risky online behaviour	54,39	9,67	53,01	9,26

The following chart depicts the level of factors and behaviours during the first measurement as well as changes that took place within one year (Figure 20). Among others, the level of risk factors is overall higher compared with protective factors during both measurements. The configuration of factors has changed after one year. Although pupils' engagement in extracurricular activity retained one of the top values (M = 51.39, SD = 9.43), peer support became the second most important protective factor (M = 50.93, SD = 8.90). On the other hand, when it comes to risk factors, negative examples of risky behaviours among peers had the highest values at the time of the second measurement (M = 55.17, SD = 9.71).

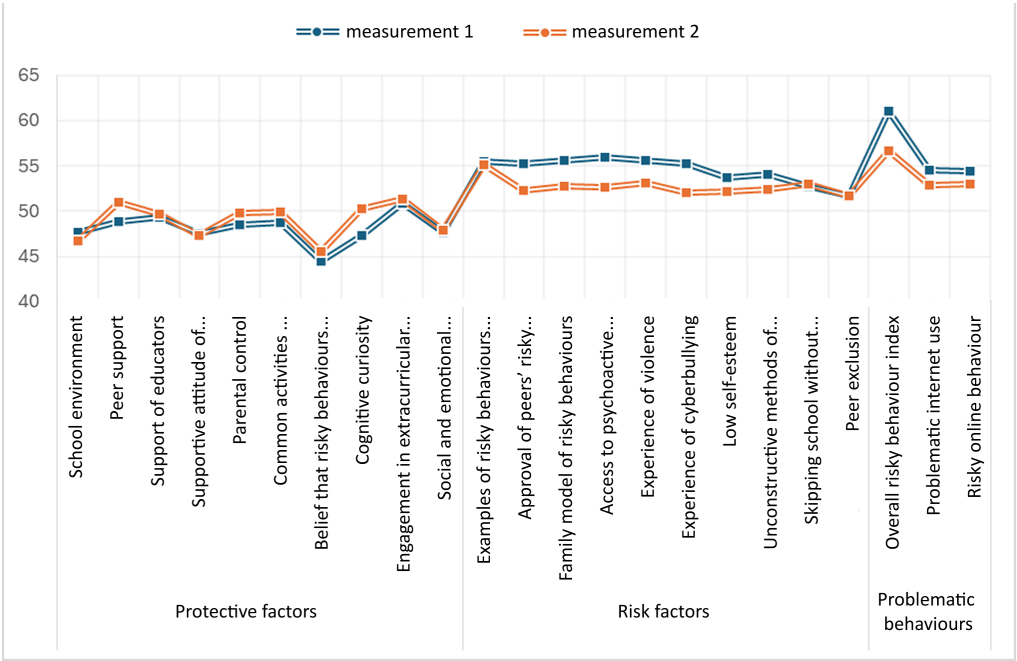

Figure 20. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a high level of engagement in problematic behaviours – HPBps (T-scores)

The results of the test of significance of differences (Table 52) supplement the data on changes observed in pupils with a high level of engagement in problematic behaviours. Analysis of Cohen's d effect size allows us to determine the factors which underwent the most prominent changes (although it should be noted that the effect size values remain low). When it comes to protective factors, these are peer support ($t = -2.362$, $p = 0.020$, $d = -0.201$) and cognitive curiosity ($t = -2.766$, $p = 0.006$, $d = -0.235$). Pupils benefited more from the supportive presence of their peers. Their tendency to take up activities that satisfy their natural curiosity and pursuit of knowledge also became more prominent. There were constructive changes in the risk factors, as well. The biggest differences concern the experience of cyberbullying ($t = 3.671$, $p < 0.001$, $d = 0.313$) and approval of risky behaviours of their peers ($t = 3.327$, $p = 0.001$, $d = 0.283$). Young people were less likely to approve of negative behaviours and felt less threatened by attacks via digital me-

dia. Similarly, the pupils' belief that it was easy to obtain psychoactive substances decreased (t = 2.928, p = 0.004, d = 0.249). The young people's engagement in risky behaviours was also significantly reduced (t = 2.912, p = 0.004, d = 0.258).

Table 52. Protective factors, risk factors and problematic behaviours in primary school pupils of grades 4–8 – group with a high level of engagement in problematic behaviours (HPBps) – comparison between the first and the second measurement

Protective factors, risk factors and problematic behaviours		Measurement 1		Measurement 2		Comparison		
		M	SD	M	SD	t	p	d
Protective factors	School environment	9,47	2,78	9,25	2,77	0,794	0,429	0,068
	Peer support	11,21	3,96	12,11	3,97	-2,362	0,020	-0,201
	Support of educators	19,99	5,56	20,12	6,33	-0,226	0,822	-0,019
	Supportive attitude of teachers	28,35	6,38	28,11	7,08	0,344	0,731	0,029
	Parental control	11,51	4,68	12,12	4,70	-1,303	0,195	-0,111
	Common activities with parents	25,41	4,18	25,95	4,30	-1,354	0,178	-0,115
	Belief that risky behaviours are not permitted	23,89	5,99	24,15	6,79	-0,371	0,711	-0,032
	Cognitive curiosity	56,00	7,35	58,14	8,39	-2,766	0,006	-0,235
	Engagement in extracurricular activity	17,04	7,53	17,17	6,15	-0,176	0,860	-0,015
	Social and emotional intelligence	113,00	26,81	112,93	31,77	0,021	0,983	0,002

Risk factors	Examples of risky behaviours among peers	12,44	4,77	12,46	4,93	-0,044	0,965	-0,004
	Approval of peers' risky behaviours	15,18	5,92	13,17	5,89	3,327	0,001	0,283
	Family model of risky behaviours	20,11	10,33	17,07	11,25	2,630	0,010	0,224
	Access to psychoactive substances	9,28	3,70	8,14	3,95	2,928	0,004	0,249
	Experience of violence	7,62	8,71	5,61	6,36	2,696	0,008	0,229
	Experience of cyberbullying	9,87	4,92	8,28	3,33	3,671	< 0,001	0,313
	Low self-esteem	29,28	8,25	27,93	7,12	1,827	0,070	0,156
	Unconstructive methods of coping with stress	17,06	3,53	16,54	3,62	1,577	0,117	0,134
	Skipping school without a justification	2,06	2,62	2,54	3,67	-1,480	0,141	-0,126
	Peer exclusion	9,13	3,60	9,09	3,78	0,097	0,922	0,008
Problematic behaviours	Overall risky behaviour index	18,02	6,98	15,27	9,87	2,912	0,004	0,258
	Problematic internet use	8,20	5,87	7,39	5,49	1,635	0,104	0,14
	Risky online behaviour	2,83	2,94	2,44	2,81	1,314	0,191	0,112

The description of the primary school pupils' environment is supplemented with a comparison between the three groups, prepared at the beginning and at the end of the research. This analysis broadens the description of specific characteristics of pupils with various levels of engagement in problematic behaviours.

4.3.1.4. Comparison of primary school pupils with different levels of engagement in problematic behaviours

Differences between the groups at the time of the first and the second measurement are presented in Tables 53 and 54 and the following charts (Figures 21 and 22). The Tables do not include mean and standard deviation values as these values are already included in the Tables above (48, 50 and 52).

The first measurement of each protective factor, risk factor and problematic behaviour differs significantly between the groups of pupils, referencing the significance of the general test of differences (Table 53). The values of variables presented on the chart lead to the following observations:

- Pupils with a low level of engagement in problematic behaviours generally assign higher scores to protective factors than to risk factors.
- Pupils with a moderate and high level of engagement in problematic behaviours give higher scores to risk factors than to protective factors and this trend is more prominent in the group with the highest problematic behaviour index.
- Analogous differences concern problematic behaviours – their highest level is observed in pupils from the HPBps group and the lowest — from the LPBps group.

Table 53. Comparison of pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the first measurement

	Protective factors, risk factors and problematic behaviours	Comparison		Pairwise comparisons (p values)		
		H	p	HPBps-MPBps	HPBps-LPBps	MPBps-LPBps
Protective factors	School environment	104,204	< 0,001	0,045	< 0,001	< 0,001
	Peer support	9,148	0,010	0,109	0,005	0,083
	Support of educators	14,816	< 0,001	0,072	< 0,001	0,015
	Supportive attitude of teachers	93,213	< 0,001	0,003	< 0,001	< 0,001
	Parental control	12,372	0,002	0,124	0,002	0,021
	Common activities with parents	63,731	< 0,001	0,557	< 0,001	< 0,001
	Belief that risky behaviours are not permitted	295,163	< 0,001	< 0,001	< 0,001	< 0,001
	Cognitive curiosity	22,368	< 0,001	0,019	< 0,001	0,004
	Engagement in extracurricular activity	22,387	< 0,001	0,052	< 0,001	0,349
	Social and emotional intelligence	34,345	< 0,001	0,004	< 0,001	< 0,001

Risk factors	Examples of risky behaviours among peers	376,622	< 0,001	< 0,001	< 0,001	0,009
	Approval of peers' risky behaviours	268,113	< 0,001	< 0,001	< 0,001	< 0,001
	Family model of risky behaviours	338,378	< 0,001	< 0,001	< 0,001	0,071
	Access to psychoactive substances	264,043	< 0,001	< 0,001	< 0,001	< 0,001
	Experience of violence	217,393	< 0,001	< 0,001	< 0,001	0,176
	Experience of cyberbullying	126,225	< 0,001	< 0,001	< 0,001	< 0,001
	Low self-esteem	123,666	< 0,001	< 0,001	< 0,001	0,004
	Unconstructive methods of coping with stress	115,689	< 0,001	< 0,001	< 0,001	0,020
	Skipping school without a justification	98,842	< 0,001	< 0,001	< 0,001	< 0,001
	Peer exclusion	14,665	< 0,001	0,029	< 0,001	0,040
Problematic behaviours	Overall risky behaviour index	684,400	< 0,001	< 0,001	< 0,001	< 0,001
	Problematic internet use	165,151	< 0,001	< 0,001	< 0,001	0,027
	Risky online behaviour	166,401	< 0,001	< 0,001	< 0,001	0,002

Note. The *H* symbol refers to the Kruskal–Wallis *H* test. The pairwise comparisons include the Bonferroni correction.

Similar assessment of risk factors and protective factors in groups with a moderate and high level of engagement in problematic behaviours means that a number of factors between the groups does not differ in a statistically significant way (as indicated by the significance values for inter-group comparisons). However, there are several instances where all pupils, depending on the group, perceive their environment differently. This is the case for support on the part of teachers – pupils with a low level of engagement in problematic behaviours benefit from it the most, while pupils from the HPBps group gave this factor the lowest scores. Analogically, groups differ in terms of the belief that risky behaviours are not permitted. Young people who exhibit problematic behaviours are the least likely ones to have this attitude. Another difference between the groups is emotional and social intelligence, which is the highest in pupils with a low level of engagement in problematic behaviours.

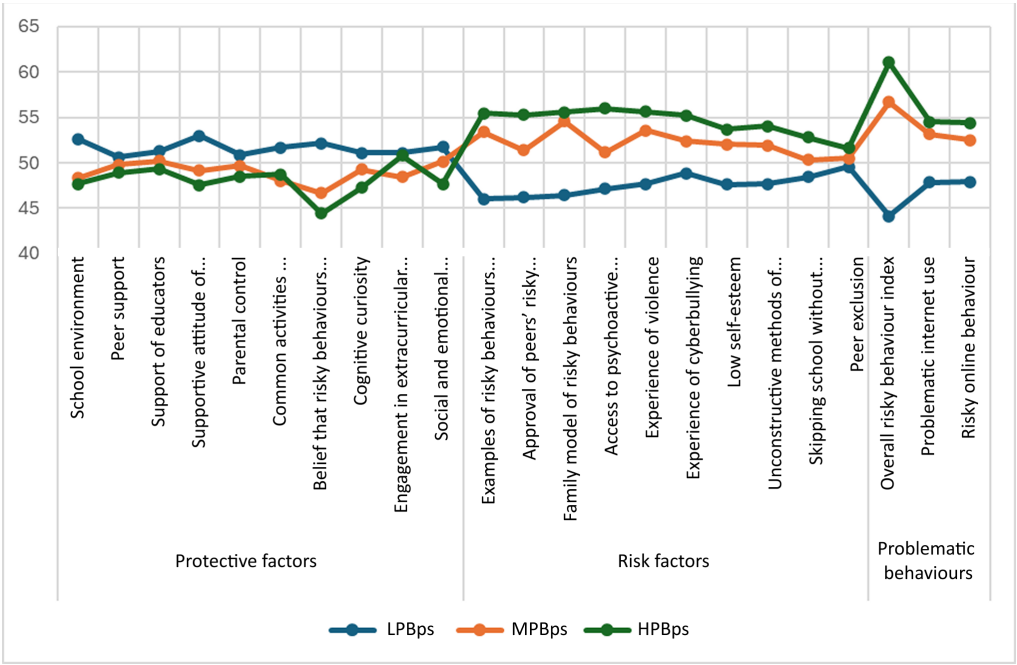

Figure 21. Comparison of pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the first measurement (T-scores)

The differences are opposite when it comes to risk factors – the risk is significantly higher in the HPBps group. Risk factors with significant differences observed between the three groups include: examples of risky behaviours among peers, approval of such behaviours, access to psychoactive substances, experience of cyberbullying, low self-esteem as well as tendency to skip classes.

Table 54. Comparison of pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the second measurement

Protective factors, risk factors and problematic behaviours		Comparison		Pairwise comparisons (p values)		
		H	p	HPBps-MPBps	HPBps-LPBps	MPBps-LPBps
Protective factors	School environment	42,452	< 0,001	0,110	< 0,001	< 0,001
	Peer support	0,166	0,920	0,875	0,728	0,776
	Support of educators	8,721	0,013	0,540	0,088	0,046
	Supportive attitude of teachers	53,198	< 0,001	0,204	< 0,001	< 0,001
	Parental control	15,721	< 0,001	0,404	0,010	0,004
	Common activities with parents	15,427	< 0,001	0,803	0,039	< 0,001
	Belief that risky behaviours are not permitted	86,189	< 0,001	0,025	< 0,001	< 0,001
	Cognitive curiosity	1,690	0,430	0,874	0,634	0,534
	Engagement in extracurricular activity	4,140	0,126	0,702	0,140	0,393
	Social and emotional intelligence	24,568	< 0,001	0,099	< 0,001	0,003

Risk factors	Examples of risky behaviours among peers	103,913	< 0,001	< 0,001	< 0,001	0,148
	Approval of peers' risky behaviours	53,514	< 0,001	< 0,001	< 0,001	0,181
	Family model of risky behaviours	82,973	< 0,001	< 0,001	< 0,001	0,837
	Access to psychoactive substances	75,164	< 0,001	< 0,001	< 0,001	0,009
	Experience of violence	62,373	< 0,001	< 0,001	< 0,001	0,875
	Experience of cyberbullying	33,827	< 0,001	< 0,001	< 0,001	0,788
	Low self-esteem	63,613	< 0,001	< 0,001	< 0,001	0,190
	Unconstructive methods of coping with stress	31,864	< 0,001	< 0,001	< 0,001	0,204
	Skipping school without a justification	35,080	< 0,001	< 0,001	< 0,001	0,064
	Peer exclusion	8,463	0,015	0,681	0,013	0,148
Problematic behaviours	Overall risky behaviour index	182,196	< 0,001	< 0,001	< 0,001	< 0,001
	Problematic internet use	76,338	< 0,001	< 0,001	< 0,001	0,611
	Risky online behaviour	70,800	< 0,001	< 0,001	< 0,001	0,753

Note. The *H* symbol refers to the Kruskal–Wallis *H* test. The pairwise comparisons include the Bonferroni correction.

Differences between the groups during the second measurement are depicted in the chart below (Figure 22). It shows that for pupils with a low level of engagement in problematic behaviours, the level of protective factors has decreased, while the risk factors have increased compared with the beginning of the research. On the other hand, the most desirable changes from the point of view of prevention could be observed in the HPBps group. Pupils from this group began to notice more protective factors, while the level of risk factors receded. As a result of these changes, the differences between the groups are less frequently significant than they were during the first measurement (Table 54). The level of protective factors still tends to be higher in the LPBps group, while the level of risk factors remains lower, but there are several areas where groups do not differ significantly. This includes the protective factor of peer support, which is rated the same by all pupils (Figure 22), as well as the areas of cognitive curiosity and extracurricular activities, where pupils give similar ratings. Risk factors differ between the groups in such a way that pupils with a low level of engagement in problematic behaviours still rate them lower compared with other peers.

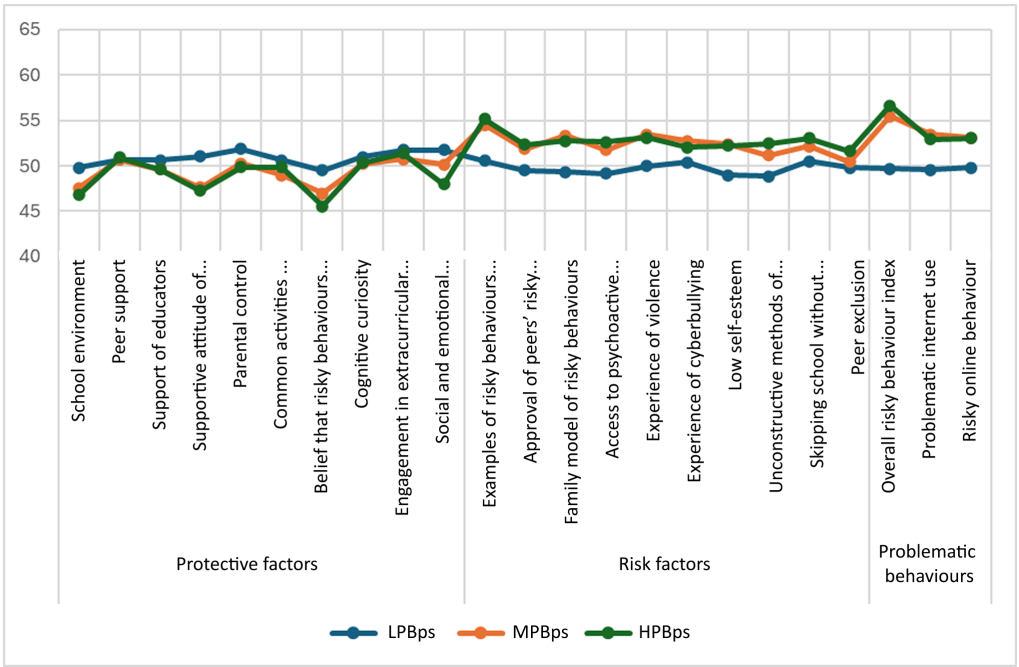

Figure 22. Comparison of pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the second measurement (T-scores)

The changes the differences between the groups described above appear to be non-specific in terms of the level of engagement in problematic behaviours in pupils – positive changes took place in the group of pupils with the highest problem index, while negative changes were observed in pupils with the lowest level of engagement in problematic behaviours. Analyses presented in the following section may prove helpful in explaining these trends. The following section is dedicated to correlations between changes in protective factors, risk factors and problematic behaviours and participation in prevention education activities.

4.3.1.5. Correlation between changes in protective factors, risk factors and problematic behaviours and participation in prevention education activities in primary schools

The purpose of the following analyses was to verify the model presented in Figure 23. The correlations it shows demonstrate the role of protective factors in reducing the impact of risk factors and the probability of occurrence of problematic behaviours. Risk factors, on the other hand, affect the behaviours, increasing the probability of their occurrence. The more protective factors increased within a year (between the first and second measurement), the more risk factors, and thus also problematic behaviours, should have decreased.

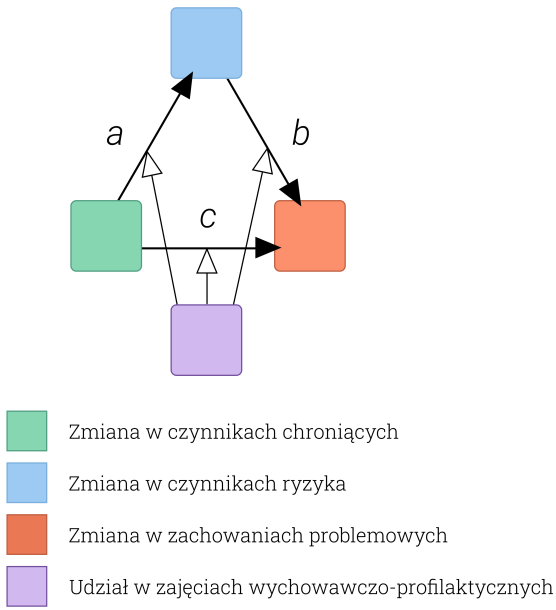

Figure 23. Model of correlations between changes in protective factors, risk factors and problematic behaviours, taking into account participation of primary school pupils of grades 4–8 in prevention education activities

At the same time, the model includes the role of prevention education activities that the pupils participated in. It acts as the moderating variable. Small number of prevention activities should weaken the effect of protective factors, whereas their large number should reduce the threats arising from risk factors.

The verified model appears to be adequate with respect to the results presented in the previous sub-chapters. The changes described there differ depending on the group's level of engagement in problematic behaviours at the beginning of the research. In one of the groups, a given type of factors is reduced, while in others – it is amplified. Regression analysis provides information on correlations between these variables. Moreover, the presented model allows us to determine whether young people's participation in prevention education activities plays a role in the changes (and if so, what that role is). Like before, the results are divided into three groups of pupils, which is additionally justified by the varied nature of the aforementioned changes in individual groups.

Pupils with a low level of engagement in problematic behaviours (LPBps) – results of regression analysis

At the first stage, the correlation between protective factors and risk factors was estimated (path a in Figure 23). Pupils' participation in prevention education activities does not modify the correlation between the factors. Whenever protective factors increased by one unit, risk factors decreased by a T-score of 0.48 (the values of factors and behaviours entered into the model are converted to the T-score scale). Activities are not significantly correlated with this change (Table 55).

Table 55. Coefficients of the regression equation with a moderation effect with moderation (protective factors x prevention education activities) for risk factors as the explained variable – the LPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	13,599	3,936	3,465	< 0,001	5,874	21,325
Protective factors	-0,482	0,064	-7,542	< 0,001	-0,608	-0,357
Prevention education activities	0,176	0,155	1,136	0,256	-0,128	0,480
Protective factors x prevention education activities	0,003	0,002	1,162	0,245	-0,002	0,008

Note. N = 856 (LPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

The next step was to estimate the coefficients for the direct correlation between protective factors and problematic behaviours as well as for risk factors and behaviours – paths *b* and *c* (Figure 23, Table 56). The latter correlation is an important one – whenever risk factors increased, so did the pupils' engagement in problematic behaviours ($\beta = 0.077$, $p < 0.001$). Activities for pupils are not correlated with changes in their behaviours; neither do they modify the role of the factors.

Table 56. Regression equation coefficients with moderation (protective factors x prevention education activities) for problematic behaviours as the explained variable – the LPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	3,098	0,711	4,359	0	1,703	4,493
Protective factors	-0,003	0,012	-0,265	0,791	-0,027	0,02
Risk factors	0,077	0,014	5,559	< 0,001	0,05	0,104
Prevention education activities	0,018	0,028	0,641	0,522	-0,037	0,074
Protective factors x prevention education activities	0,000	0,000	0,063	0,950	-0,001	0,001
Risk factors x prevention education activities	0,001	0,001	1,117	0,264	-0,001	0,002

Note. N = 856 (LPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

Since the analyses confirmed ineffectiveness of prevention education activities among pupils from the LPBps group, and since there was a visible correlation between the factors, a decision was made to additionally estimate the model without using the moderator. This is depicted in Figure 24.

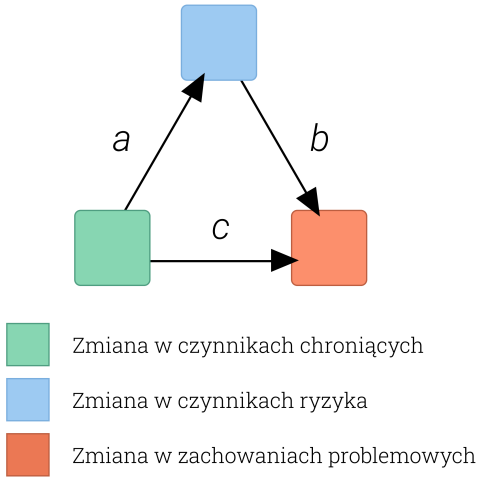

Figure 24. Model of correlations between changes in protective factors, risk factors and problematic behaviours for primary school pupils of grades 4–8

This model confirms the above findings concerning lack of direct correlation between changes in protective factors and behaviours of pupils and, at the same time, concerning the role of risk factors in strengthening these behaviours (Table 57). There is also a significant regularity when it comes to the mediation effect. It indicates an indirect role of protective factors, which reduce the risk of engaging in problematic behaviours by affecting the risk factors [β = -0.038, 95% CI (-0.046; -0.030)].

Table 57. Regression equation coefficients for mediation between protective factors and risk factors with problematic behaviours as the explained variable – the LPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	3,525	0,29	12,15	< 0,001	2,955	4,094
Protective factors	-0,002	0,005	-0,299	0,765	-0,012	0,009
Risk factors	0,091	0,006	15,708	< 0,001	0,080	0,103
Mediation effect of risk factors in the correlation between protective factors and problematic behaviours	-0,038	0,004*			-0,046*	-0,030*

Note. N = 856 (LPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β. * - the values marked with an asterisk were estimated using the bootstrapping method; if the confidence interval does not contain a zero, the coefficient is deemed statistically significant.

To sum up, both areas – protective factors as well as risk factors – are significant when it comes to pupils' engagement in problematic behaviours. Protective factors have an indirect effect by reducing the negative impact of the risk factors.

Pupils with a moderate level of engagement in problematic behaviours (MPBps) – results of regression analysis

Similarly to the LPBps group, in pupils with a moderate level of engagement in problematic behaviours, protective factors affect the risks by reducing their level (β = -0.239, p = 0.027) – Table 58. However, this correlation does not change as a result of prevention education activities at school (β = -0.006, p = 0.166). Nevertheless, there is a correlation between the number of activities and intensity of risk factors (β = 0.779, p = 0.002). Activities for pupils appear to be a response to a higher risk level in this group of pupils.

Table 58. Regression equation coefficients with moderation (protective factors x prevention education activities) for risk factors as the explained variable – the MPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-13,882	6,023	-2,305	0,022	-25,719	-2,046
Protective factors	-0,239	0,108	-2,22	0,027	-0,45	-0,027
Prevention education activities	0,779	0,25	3,116	0,002	0,288	1,27
Protective factors x Prevention education activities	-0,006	0,005	-1,388	0,166	-0,016	0,003

Note. N = 453 (MPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

The effect of moderation is also not significant for the model explaining problematic behaviours (Table 59). The frequency of prevention education activities is not significantly correlated with problematic engagement and does not modify the role played by protective or risk factors. However, when the latter type of factors is intensified, it increases the probability of engagement in problematic behaviours ($\beta = 0.112$, $p < 0.001$).

Table 59. Regression equation coefficients with moderation (protective factors x prevention education activities) for problematic behaviours as the explained variable – the MPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-1,995	0,912	-2,188	0,029	-3,787	-0,203
Protective factors	0,008	0,017	0,462	0,644	-0,026	0,042
Risk factors	0,112	0,018	6,227	< 0,001	0,077	0,147
Prevention education activities	0,025	0,038	0,648	0,517	-0,050	0,100
Protective factors x Prevention education activities	-0,001	0,001	-0,664	0,507	-0,002	0,001
Risk factors x Prevention education activities	-0,001	0,001	-1,024	0,307	-0,002	0,001

Note. N = 453 (MPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

Due to the lack of moderating role of activities addressed to pupils, only the model including correlations between factors and problematic behaviours was estimated (Table 60). Analogically to the first group, the protective factors have an indirect influence on problematic behaviours – by diminishing the function of the risk factors [β = -0.035, 95% CI (-0.045; -0.025)].

Table 60. Regression equation coefficients for mediation between protective factors and risk factors with problematic behaviours as the explained variable – the MPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-1,507	0,348	-4,328	< 0,001	-2,192	-0,823
Protective factors	-0,002	0,007	-0,273	0,785	-0,016	0,012
Risk factors	0,096	0,007	13,666	< 0,001	0,082	0,11
Mediation effect of risk factors in the correlation between protective factors and problematic behaviours	-0,035	0,005*			-0,045*	-0,025*

Note. N = 453 (MPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β. * - the values marked with an asterisk were estimated using the bootstrapping method; if the confidence interval does not contain a zero, the coefficient is deemed statistically significant.

The last regression analysis for the data collected in primary schools concerns pupils with the highest level of engagement in problematic behaviours.

Pupils with a high level of engagement in problematic behaviours (HPBps) – results of regression analysis

The regularities described in relation to the two groups of pupils with a lower level of engagement in problematic behaviours also apply, in most cases, to the HPBps group. Prevention education activities are not correlated with the level of risk factors and protective factors. Neither do they moderate the correlation between the factors (β = -0.012, p = 0.158) (Table 61).

Table 61. Regression equation coefficients with moderation (protective factors x prevention education activities) for risk factors as the explained variable – the HPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-23,941	12,690	-1,887	0,061	-49,039	1,158
Protective factors	-0,122	0,220	-0,555	0,580	-0,556	0,312
Prevention education activities	0,388	0,490	0,79	0,431	-0,582	1,357
Protective factors x Prevention education activities	-0,012	0,009	-1,42	0,158	-0,029	0,005

Note. N = 138 (HPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

Evaluation of the full model of correlations shows that whenever risk factors increase, so does the pupils' problematic behaviour (β = 0.071, p = 0.017) – Table 62. The second important correlation in the model is the one between the frequency of prevention education activities and problematic behaviours (β = 0.172, p = 0.027). Increased frequency of the activities correlates with an increased level of engagement in problematic behaviours.

Table 62. Regression equation coefficients with moderation (protective factors x prevention education activities) for problematic behaviours as the explained variable – the HPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-6,666	2,008	-3,32	0,001	-10,638	-2,694
Protective factors	0,03	0,033	0,905	0,367	-0,036	0,096
Risk factors	0,071	0,029	2,425	0,017	0,013	0,129
Prevention education activities	0,172	0,077	2,23	0,027	0,019	0,324
Protective factors x Prevention education activities	-0,001	0,001	-0,716	0,475	-0,004	0,002
Risk factors x Prevention education activities	0,001	0,001	1,246	0,215	-0,001	0,004

Note. N = 138 (HPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

Given the lack of evidence for the moderating role of activities addressed to the pupils, an analysis for a less complex model was performed similarly to the previous sections (Table 63). In the HPBps group, protective factors also have an indirect effect on problematic behaviours. Their function consists in decreasing the level of risk factors, and thus reducing problematic behaviours [β = -0.044, 95% CI (-0.071; -0.020)].

Table 63. Regression equation coefficients for mediation between protective factors and risk factors with problematic behaviours as the explained variable – the HPBps group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-2,522	0,792	-3,184	0,002	-4,088	-0,956
Protective factors	0,007	0,014	0,514	0,608	-0,02	0,035
Risk factors	0,107	0,013	8,302	< 0,001	0,082	0,133
Mediation effect of risk factors in the correlation between protective factors and problematic behaviours	-0,044	0,013*			-0,071*	-0,020*

Note. N = 138 (HPBps group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β. * - the values marked with an asterisk were estimated using the bootstrapping method; if the confidence interval does not contain a zero, the coefficient is deemed statistically significant.

When primary school pupils participate in prevention education activities, such activities are a response to an increased risk level – risk factors or problematic behaviours. It has not been demonstrated, however, that the activities fulfil the function of introducing protective factors or reducing the negative role of risk factors.

4.3.2. Secondary school pupils

The description of changes in protective factors, risk factors and problematic behaviours in secondary school pupils was prepared using the same model as for the young people form primary school. The first part contains comparisons between measurements in each group of pupils, followed by looking into differences between the groups, and finally – a description of correlations between the change dynamics in factors and participation in preventive activities. The description of groups uses T-scores, which allowed for the factors to be compared with one another. Comparisons using tests of significance of the differences were based on unconverted values.

4.3.2.1. Pupils with a low level of engagement in problematic behaviours (LPBss)

At the time of the first measurement, the biggest protective factor among pupils with a low level of engagement in problematic behaviours was the belief that risky behaviours were not permitted (M = 55.87, SD = 7.93) – Table 64. Thanks to having this standard, they can correctly assess behaviours that are disadvantageous to them personally. Other sources of assistance included a friendly, supportive school environment (M = 53.46, SD = 9.38) and a positive attitude towards learning and obligations (M = 53.58, SD = 9.61) – the next two highest-scoring protective factors. Despite the overall high level of the school environment, one of its components – peer support – received the lowest scores (M = 49.08, SD = 9.57). Compared with other features of the environment, taking up additional extracurricular activity is less frequent among teenagers in this group (M = 50.10, SD = 9.82).

The highest risk in the environment of young people with a low level of engagement in problematic behaviours was connected with the experience of peer exclusion, a sense of being left out of the key events among peers (M = 49.34, SD = 9.23). Other factors which had an adverse effect were the pupils' tendency to have a lowered self-esteem and poor opinion on important aspects of their lives (M = 50.10, SD = 9.82) and experience of cyberbullying (M = 48.77, SD = 7.66). The risk factor with the lowest impact on the pupils' actions was the tendency to disapprove of their peers' problematic behaviours (M = 44.69, SD = 44.98). This is consistent with the aforementioned protective factor – the belief that problematic behaviours are unacceptable. One of the lowest scores was also assigned to access to psychoactive substances (M = 44.98, SD = 8.32). Pupils are not under the impression that it is easy to obtain them.

The predominant problematic behaviour among pupils from the LPBss group is problematic use of the internet (M = 48.71, SD = 9.67). Pupils tend to spend more time online than planned and to experience the resulting issues.

Table 64. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a low level of engagement in problematic behaviours – LPBss (T-scores)

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2	
		M	SD	M	SD
Protective factors	School environment	53,46	9,38	50,22	9,65
	Peer support	49,08	9,57	49,00	9,65
	Support of educators	52,14	9,54	50,76	9,87
	Supportive attitude of teachers	52,49	9,57	50,04	9,19
	Parental control	51,45	9,84	51,83	9,75
	Common activities with parents	51,78	8,87	51,81	9,03
	Attitude towards learning and school obligations	53,58	9,61	50,86	9,21
	Belief that risky behaviours are not permitted	55,87	7,93	52,41	8,80
	Cognitive curiosity	50,96	10,30	50,93	9,88
	Engagement in extracurricular activity	50,10	9,82	51,80	9,87
Risk factors	Examples of risky behaviours among peers	45,01	8,51	50,16	10,04
	Approval of peers' risky behaviours	44,69	8,37	46,65	9,13
	Family model of risky behaviours	47,26	8,64	48,35	9,21
	Access to psychoactive substances	44,98	8,32	48,46	9,08
	Experience of violence	47,77	8,18	48,51	8,98
	Experience of cyberbullying	48,77	7,66	49,58	8,24
	Symptoms of mental crisis	47,46	9,33	48,37	9,75
	Low self-esteem	48,40	9,58	49,10	9,46
	Unconstructive methods of coping with stress	46,40	8,19	48,38	9,27
	Skipping school without a justification	45,22	7,81	49,38	9,27
	Peer exclusion	49,34	9,23	50,26	9,67

Problematic behaviours	Overall risky behaviour index	41,96	5,38	46,25	8,72
	Problematic internet use	48,71	9,67	49,44	10,57
	Risky online behaviour	48,36	9,21	49,41	9,50

Changes in the group of pupils with a low level of engagement in problematic behaviours within one year are negative from the point of view of prevention education measures (Figure 25). There has been an increase in risk factors and reduction in protective factors, accompanied by increased overall engagement in problematic behaviours. There is also a small change in configuration of major protective factors and risk factors. The belief that problematic behaviours are not permissible still dominates (M = 52.41, SD = 8.80), along with peer exclusion (M = 50.26, SD = 9.67) being the top risk. However, examples of risky behaviours among peers have also become more important (M = 50.16, SD = 10.04).

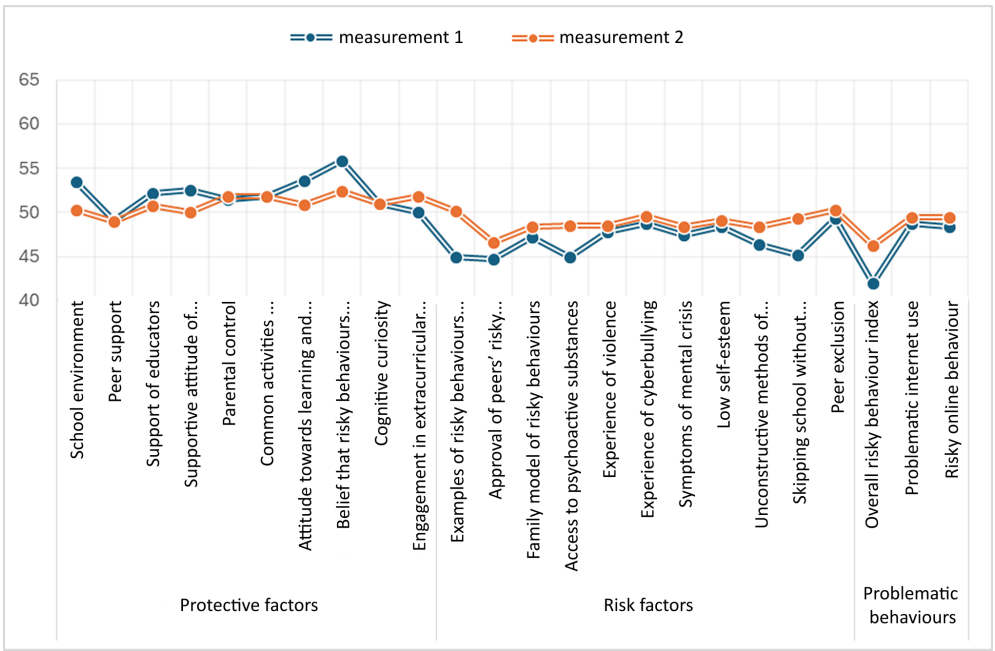

Figure 25. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a low level of engagement in problematic behaviours – LPBss (T-scores)

The nature of these changes is confirmed by the results of the test of significance of the differences (Table 65). In the group of protective factors, the biggest changes (d) concern decreases in: assessment of the school environment ($t = 7.068$, $p < 0.001$, $d = 0.306$), belief about problematic behaviours ($t = 7.224$, $p < 0.001$, $d = 0.313$), attitude towards learning and obligations ($t = 6.051$, $p < 0.001$, $d = 0.262$) as well as support on the part of teachers ($t = 5.221$, $p < 0.001$, $d = 0.226$). The changes therefore concern the key protective factors identified during the first measurement.

There is also a significant increase in the value of risk factors. Pupils have started to notice more risky behaviours among peers ($t = -10.654$, $p < 0.001$, $d = -0.461$), skip school more often ($t = -9.940$, $p < 0.001$, $d = 0.460$) and think that it was easier to access psychoactive substances ($t = -8.428$, $p < 0.001$, $d = -0.365$). These changes were accompanied by more frequent engagement in problematic behaviours, observed in the overall index of such behaviours ($t = -11.167$, $p < 0.001$, $d = -0.483$).

Table 65. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a low level of engagement in problematic behaviours (LPBss) – comparison between the first and the second measurement

	Protective factors, risk factors and prob-lematic behaviours	Measurement 1		Measurement 2		Comparison		
		M	SD	M	SD	t	p	d
Protective factors	School environment	11,01	2,49	10,16	2,63	7,068	< 0,001	0,306
	Peer support	11,13	4,29	11,09	4,30	0,221	0,825	0,010
	Support of educators	20,69	5,62	19,85	5,86	3,049	0,002	0,132
	Supportive attitude of teachers	29,61	6,08	28,07	5,94	5,221	< 0,001	0,226
	Parental control	12,38	4,55	12,56	4,50	-0,865	0,388	-0,037
	Common activities with parents	24,32	4,40	24,34	4,47	-0,064	0,949	-0,003
	Attitude towards learning and school obligations	13,33	3,68	12,29	3,53	6,051	< 0,001	0,262
	Belief that risky behaviours are not permitted	57,36	9,33	53,39	11,28	7,224	< 0,001	0,313
	Cognitive curiosity	60,25	8,88	60,18	8,53	0,160	0,873	0,007
	Engagement in extracurricular activity	14,21	5,71	15,22	6,02	-3,394	< 0,001	-0,147

Risk factors	Examples of risky behaviours among peers	20,38	6,94	24,89	8,92	-10,654	< 0,001	-0,461
	Approval of peers' risky behav-iours	28,42	9,14	30,76	10,40	-4,676	< 0,001	-0,202
	Family model of risky behav-iours	16,26	9,34	17,50	9,89	-2,749	0,006	-0,119
	Access to psychoactive sub-stances	15,88	5,90	18,42	6,38	-8,428	< 0,001	-0,365
	Experience of violence	2,75	3,99	3,25	5,16	-2,098	0,036	-0,091
	Experience of cyberbullying	7,39	3,15	7,72	3,67	-1,922	0,055	-0,083
	Symptoms of mental crisis	71,05	23,91	73,60	25,02	-2,438	0,015	-0,106
	Low self-esteem	28,12	8,34	28,74	8,24	-1,699	0,090	-0,074
	Unconstructive methods of coping with stress	15,53	3,06	16,32	3,53	-5,200	< 0,001	-0,225
	Skipping school without a justi-fication	3,12	3,74	5,24	4,85	-9,940	< 0,001	-0,430
	Peer exclusion	8,26	3,25	8,61	3,45	-2,150	0,032	-0,093
Problematic behaviours	Overall risky behaviour index	21,27	4,89	27,08	12,00	-11,167	< 0,001	-0,483
	Problematic internet use	6,39	5,36	6,96	6,03	-2,029	0,043	-0,088
	Risky online behaviour	2,11	2,63	2,40	2,82	-2,036	0,042	-0,088

Pupils with a low problematic behaviour index had a constructive assessment of the environment at the beginning of the research. This assessment has changed in favour of increased risk. Changes in the next group over a period of one year were smaller.

4.3.2.2. Pupils with a moderate level of engagement in problematic behaviours (MPBss)

Young people with a moderate level of engagement in problematic behaviours mainly tended to notice the effects of the following protective factors (Table 66): school environment (M = 50.58, SD = 9.48), which was aided by supportive attitude of teachers (M = 50.30, SD = 9.74), and parental control of the pupils' activities and behaviours (M = 50.05, SD = 9.55), as well as cognitive curiosity (M = 50.07, SD = 10.84). The lowest scores were given for care, support and interest on the part of peers (M = 48.57, SD = 9.09). The risk of engaging in problematic behaviours in the discussed group of pupils was increased by such behavioural models being observed among family members (M = 52.03, SD = 8.90). Other most prominent risk factors included the experience of violence (M = 52.00, SD = 9.70) and low self-esteem (M = 52.15, SD = 10.11). The lowest score during the first measurement was assigned to approval of risky behaviours undertaken by peers (M = 49.89, SD = 8.11).

None of the problematic behaviours stood out in terms of how frequently pupils engaged in it. The overall index of problematic behaviour and problematic, risky use of the internet exhibited similar levels of engagement.

Table 66. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a moderate level of engagement in problematic behaviours – MPBss (T-scores)

	Protective factors, Risk factors i zachowania problemowe	Pomiar 1		Pomiar 2	
		M	SD	M	SD
Protective factors	School environment	50,58	9,48	47,84	9,84
	Peer support	48,57	9,09	49,82	9,65
	Support of educators	49,73	9,41	48,72	10,16
	Supportive attitude of teachers	50,30	9,74	48,04	9,45
	Parental control	50,05	9,55	50,35	9,89
	Common activities with parents	49,05	9,49	49,59	9,65
	Attitude towards learning and school obligations	49,80	9,11	48,63	9,82
	Belief that risky behaviours are not permitted	49,19	7,49	47,67	9,16
	Cognitive curiosity	50,07	10,84	50,58	9,79
	Engagement in extracurricular activity	49,10	9,40	50,89	10,55
Risk factors	Examples of risky behaviours among peers	50,72	7,38	53,51	10,06
	Approval of peers' risky behaviours	49,89	8,11	50,25	9,10
	Family model of risky behaviours	52,03	8,90	50,86	9,31
	Access to psychoactive substances	50,57	7,20	51,99	8,58
	Experience of violence	52,00	9,70	51,55	9,73
	Experience of cyberbullying	51,43	8,65	51,68	9,03
	Symptoms of mental crisis	50,76	9,28	51,55	9,93
	Low self-esteem	52,15	10,11	51,73	10,14
	Unconstructive methods of coping with stress	50,22	8,62	51,47	10,02
	Skipping school without a justification	50,43	8,61	53,58	10,55
	Peer exclusion	50,99	9,29	50,94	9,54

Problematic behaviours	Overall risky behaviour index	51,42	4,15	51,98	9,38
	Problematic internet use	51,95	9,21	51,77	10,50
	Risky online behaviour	50,94	9,26	51,41	10,03

The following chart shows that there have not been many changes in protective factors, risk factors and problematic behaviours between the first measurement and the second measurement (Figure 26). The scores the pupils gave to individual areas are also similar. However, the dominant factors have changed. During the second measurement, engagement in extracurricular activities developing pupils' interests gained one of the highest protective values (M = 49.89, SD = 8.11). Apart from that, parental control (M = 50.35, SD = 9.89) and cognitive curiosity (M = 50.58, SD = 9.79) remained on a relatively high level. Among risk factors, two variables were at the top level: approval of peers' problematic behaviours (M = 53.51, SD = 10.06) and skipping school without a justification (M = 53.58, SD = 10.55).

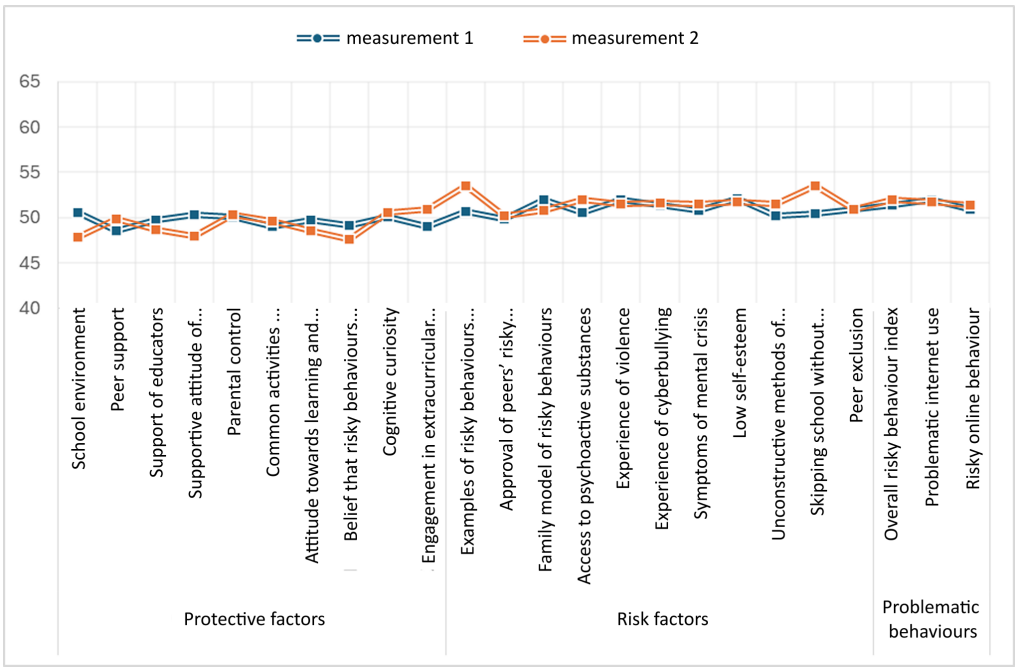

Figure 26. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a moderate level of engagement in problematic behaviours – MPBss (T-scores)

The biggest differences between the first and the second measurement were observed in the four variables for which the d effect size has the highest values (Table 67). These variables include school environment, which started gaining lower scores after one year ($t = 5.511$, $p < 0.001$, $d = 0.263$). This change can also be observed on the chart, where another visible difference is the decrease in support received from teachers ($t = 4.237$, $p < 0.001$, $d = 0.202$). One of the adverse changes among risk factors is a higher number of negative examples among peers ($t = -10.654$, $p < 0.001$, $d = -0.461$) and increased tendency to skip school without a justification ($t = -10.654$, $p < 0.001$, $d = -0.461$).

Table 67. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a moderate level of engagement in problematic behaviours (MPBss) – comparison between the first and the second measurement

	Protective factors, risk factors and prob-lematic behaviours	Measurement 1		Measurement 2		Comparison		
		M	SD	M	SD	t	p	d
Protective factors	School environment	10,25	2,58	9,50	2,76	5,511	< 0,001	0,263
	Peer support	10,92	4,06	11,44	4,23	-2,371	0,018	-0,113
	Support of educators	19,24	5,70	18,57	6,16	2,068	0,039	0,099
	Supportive attitude of teachers	28,19	6,29	26,76	6,15	4,237	< 0,001	0,202
	Parental control	11,75	4,47	11,88	4,64	-0,573	0,567	-0,027
	Common activities with parents	22,95	4,76	23,21	4,86	-1,049	0,295	-0,05
	Attitude towards learning and school obligations	11,87	3,52	11,43	3,76	2,330	0,020	0,111
	Belief that risky behaviours are not permitted	49,91	10,50	47,30	12,99	3,954	< 0,001	0,189
	Cognitive curiosity	59,60	9,26	59,89	8,34	-0,634	0,526	-0,03
	Engagement in extracurricular activity	13,62	5,32	14,82	6,58	-3,562	< 0,001	-0,17

Risk factors	Examples of risky behaviours among peers	24,90	6,71	27,84	9,42	-5,896	< 0,001	-0,281
	Approval of peers' risky behav-iours	34,29	9,43	34,83	10,61	-0,943	0,346	-0,045
	Family model of risky behav-iours	21,43	9,53	20,21	9,98	2,291	0,022	0,109
	Access to psychoactive sub-stances	19,93	5,14	20,92	6,05	-2,999	0,003	-0,143
	Experience of violence	4,91	6,01	4,89	6,54	0,054	0,957	0,003
	Experience of cyberbullying	8,26	3,96	8,42	4,09	-0,698	0,485	-0,033
	Symptoms of mental crisis	79,70	24,80	82,05	25,89	-1,916	0,056	-0,091
	Low self-esteem	31,49	9,25	31,15	9,31	0,777	0,438	0,037
	Unconstructive methods of coping with stress	17,00	3,30	17,53	3,94	-2,780	0,006	-0,133
	Skipping school without a justi-fication	5,64	4,66	7,55	5,92	-6,684	< 0,001	-0,319
	Peer exclusion	8,82	3,39	8,84	3,41	-0,080	0,936	-0,004
Problematic behaviours	Overall risky behaviour index	32,69	6,64	35,03	14,82	-3,273	0,001	-0,156
	Problematic internet use	8,07	5,67	8,26	6,25	-,679	0,498	-0,033
	Risky online behaviour	2,73	2,92	3,05	3,47	-1,754	0,080	-0,084

In the LPBss and MPBss groups, pupils experienced primarily an increased probability of engagement in problematic behaviours. Different changes were noted in the group of pupils with a high level of engagement in problematic behaviours, which is discussed in the following sub-chapter.

4.3.2.3. Pupils with a high level of engagement in problematic behaviours (HPBss)

Young people from the HPBss group exhibit the highest level of engagement in problematic behaviours compared with their peers from the two other groups. For this reason, among problematic behaviours shown in Table 68, the overall index has the highest value (M = 60.34, SD = 5.31). The accompanying protective factors primarily included peer support (M = 51.83, SD = 8.80) and involvement in extracurricular development of interests (M = 51.29, SD = 9.81). These two factors had the highest values during the first measurement. On the other hand, the lowest protective impact was observed for: attitude towards learning and school obligations (M = 47.74, SD = 9.02) and the belief that risky behaviours are not permitted (M = 43.56, SD = 7.23). Young people tended to accept problematic behaviours and treat them as permissible as well as to neglect school obligations. This type of attitude is consistent with the highest-scoring risk factors, both of which pertain to dysfunctional behaviour of peers. Pupils from the HPBss group noticed examples of risky behaviours among peers in their environment (M = 56.80, SD = 7.90) and expressed approval of such behaviours (M = 57.01, SD = 7.55). Low self-esteem (M = 51.14, SD = 9.74) and peer exclusion (M = 49.60, SD = 8.96) had the lowest values among risk factors.

Table 68. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a high level of engagement in problematic behaviours – HPBss (T-scores)

	Protective factors, risk factors and problematic behaviours	Measurement 1		Measurement 2	
		M	SD	M	SD
Protective factors	School environment	48,45	9,06	48,55	9,99
	Peer support	51,83	8,80	52,04	10,25
	Support of educators	49,67	9,20	49,17	10,38
	Supportive attitude of teachers	48,23	10,16	48,02	10,58
	Parental control	49,75	8,68	50,12	9,66
	Common activities with parents	48,05	9,10	50,64	9,52
	Attitude towards learning and school obligations	47,74	9,02	49,25	10,13
	Belief that risky behaviours are not permitted	43,56	7,23	46,70	9,44
	Cognitive curiosity	50,76	10,76	50,58	10,06
	Engagement in extracurricular activity	51,29	9,81	52,11	11,48
Risk factors	Examples of risky behaviours among peers	56,80	7,90	55,44	10,93
	Approval of peers' risky behaviours	57,01	7,55	52,42	9,62
	Family model of risky behaviours	53,30	8,88	51,33	10,08
	Access to psychoactive substances	55,51	7,08	53,06	9,90
	Experience of violence	53,98	10,19	51,90	10,67
	Experience of cyberbullying	53,23	9,40	51,83	9,49
	Symptoms of mental crisis	52,27	9,44	49,72	10,17
	Low self-esteem	51,14	9,74	48,96	10,44
	Unconstructive methods of coping with stress	54,15	9,87	51,07	10,68
	Skipping school without a justification	55,13	9,20	55,25	10,32
	Peer exclusion	49,60	8,96	50,37	10,03

Problematic behaviours	Overall risky behaviour index	60,34	5,31	54,44	10,63
	Problematic internet use	51,85	9,97	51,58	10,50
	Risky online behaviour	52,85	9,61	51,25	10,63

The following chart shows that both during the first measurement and the second measurement, pupils with a high level of engagement in risky behaviours assigned higher scores to risk factors than to protective factors (Figure 27). Despite that, the changes between the measurements are constructive – some protective factors achieved higher values, while the level of risk factors decreased.

During the second measurement, peer support (M = 52.04, SD = 10.25) and involvement in extracurricular activity (M = 52.11, SD = 11.48) still had the leading values. The most prominent risk factors, on the other hand, included peer examples of risky behaviours (M = 55.44, SD = 10.93) and tendency to skip classes (M = 55.25, SD = 10.32).

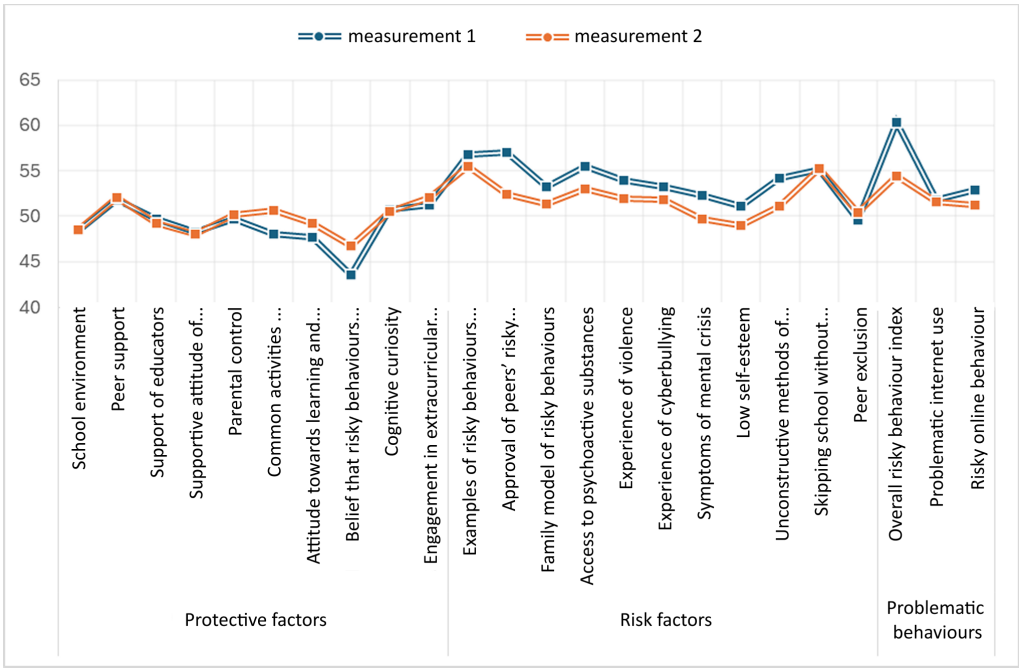

Figure 27. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a high level of engagement in problematic behaviours – HPBss (T-scores)

In the HPBss group, the biggest change between the measurements, confirmed by the test of significance of the differences (Table 69), was reduction in the overall problematic behaviour index ($t = 8.712$, $p < 0.001$, $d = 0.454$). This is the most significant change, accompanied by an increase in the protective effect of common activities with parents ($t = -4.683$, $p < 0.001$, $d = -0.244$) and belief that problematic behaviours are not permitted ($t = -4.562$, $p < 0.001$, $d = -0.238$). The majority of risk factors have also been reduced, with the biggest decrease being observed in pupils' approval of risky behaviours of their peers ($t = 7.375$, $p < 0.001$, $d = 0.384$). The belief that psychoactive substances are easy to obtain has also decreased ($t = 4.523$, $p < 0.001$, $d = 0.236$). Changes were also observed in how pupils navigated crisis and stressful situations – symptoms of mental crisis have decreased ($t = 4.503$, $p < 0.001$, $d = 0.235$) and so did unconstructive methods of coping with stress ($t = 4.946$, $p = 0.001$, $d = 0.258$).

Table 69. Protective factors, risk factors and problematic behaviours in secondary school pupils – group with a high level of engagement in problematic behaviours (HPBss) – comparison between the first and the second measurement

	Protective factors, risk factors and prob-lematic behaviours	Measurement 1		Measurement 2		Comparison		
		M	SD	M	SD	t	p	d
Protective factors	School environment	9,69	2,50	9,70	2,76	-0,049	0,961	-0,003
	Peer support	12,37	3,79	12,36	4,40	0,062	0,951	0,003
	Support of educators	19,22	5,58	18,88	6,22	0,891	0,373	0,046
	Supportive attitude of teachers	26,85	6,66	26,68	6,93	0,392	0,695	0,02
	Parental control	11,64	4,17	11,78	4,58	-0,543	0,588	-0,028
	Common activities with parents	22,44	4,62	23,74	4,77	-4,683	< 0,001	-0,244
	Attitude towards learning and school obligations	11,08	3,49	11,66	3,88	-2,488	0,013	-0,13
	Belief that risky behaviours are not permitted	42,01	10,73	45,74	12,76	-4,562	< 0,001	-0,238
	Cognitive curiosity	60,09	9,26	59,86	8,77	0,433	0,665	0,023
	Engagement in extracurricular activity	14,90	5,68	15,61	7,16	-1,606	0,109	-0,084

Risk factors	Examples of risky behaviours among peers	30,69	7,81	29,84	10,41	1,380	0,168	0,072
	Approval of peers' risky behav-iours	42,43	9,50	37,25	11,48	7,375	< 0,001	0,384
	Family model of risky behav-iours	22,78	9,50	20,73	10,72	3,162	0,002	0,165
	Access to psychoactive sub-stances	23,48	4,95	21,68	6,88	4,523	< 0,001	0,236
	Experience of violence	6,13	6,68	5,23	7,17	2,017	0,044	0,105
	Experience of cyberbullying	8,98	4,27	8,70	4,83	0,941	0,348	0,049
	Symptoms of mental crisis	83,81	25,49	77,26	25,97	4,503	< 0,001	0,235
	Low self-esteem	30,58	8,87	28,71	9,26	3,425	< 0,001	0,179
	Unconstructive methods of coping with stress	18,57	3,93	17,40	4,17	4,946	< 0,001	0,258
	Skipping school without a justi-fication	8,36	5,24	8,53	5,82	-0,494	0,622	-0,026
	Peer exclusion	8,33	3,20	8,66	3,64	-1,510	0,132	-0,079
Problematic behaviours	Overall risky behaviour index	47,48	8,87	39,33	16,05	8,712	< 0,001	0,454
	Problematic internet use	8,18	5,91	8,06	6,40	0,386	0,700	0,021
	Risky online behaviour	3,32	3,12	3,10	3,73	0,963	0,336	0,05

The next part of this chapter presents the differences between groups of youth at the time of the first and second measurement.

4.3.2.4. Comparison of secondary school pupils with different levels of engagement in problematic behaviours

The following Tables present the results of tests of significance of the differences, carried out on data from the first measurement (Table 70) and data from the second measurement (Table 71). This information is supplemented by the charts below (Figures 28 and 29). The Tables do not contain mean values as those are included in previous sub-chapters.

The results of the first measurement allow for further specification of the environment of pupils from different groups and how they operate. Pupils with a low level of engagement in problematic behaviours generally assign higher scores to protective factors than to risk factors. Pupils with a high level of engagement in problematic behaviours tended to make the opposite assessment. On the other hand, pupils with a moderate level of engagement in such behaviours had a similar opinion about both types of factors. Each of the measured traits differed significantly between the three groups of pupils (Table 70), although these differences did not apply each time to all groups at once. The exception was cognitive curiosity.

Table 70. Comparison of secondary school pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the first measurement

	Protective factors, risk factors and problematic behaviours	Comparison		Pairwise comparisons (p val-ues)		
		H	p	HPBss-MPBss	HPBss-LPBss	MPBss-LPBss
Protective factors	School environment	67,924	< 0,001	0,002	< 0,001	< 0,001
	Peer support	26,804	< 0,001	0,669	< 0,001	< 0,001
	Support of educators	20,975	< 0,001	0,871	< 0,001	< 0,001
	Supportive attitude of teachers	40,318	< 0,001	0,012	< 0,001	< 0,001
	Parental control	9,556	0,008	0,617	0,005	0,017
	Common activities with parents	40,423	< 0,001	0,448	< 0,001	< 0,001
	Attitude towards learning and school obligations	94,265	< 0,001	0,002	< 0,001	< 0,001
	Belief that risky behaviours are not permitted	449,598	< 0,001	< 0,001	< 0,001	< 0,001
	Cognitive curiosity	1,705	0,426	0,386	0,603	0,756
	Engagement in extracurricular activity	12,284	0,002	0,178	0,001	0,190

Risk factors	Examples of risky behaviours among peers	382,190	< 0,001	< 0,001	< 0,001	< 0,001
	Approval of peers' risky behaviours	381,147	< 0,001	< 0,001	< 0,001	< 0,001
	Family model of risky behaviours	111,711	< 0,001	< 0,001	< 0,001	0,147
	Access to psychoactive substances	341,643	< 0,001	< 0,001	< 0,001	< 0,001
	Experience of violence	97,868	< 0,001	< 0,001	< 0,001	0,017
	Experience of cyberbullying	64,824	< 0,001	< 0,001	< 0,001	0,016
	Symptoms of mental crisis	60,666	< 0,001	< 0,001	< 0,001	0,082
	Low self-esteem	34,054	< 0,001	< 0,001	< 0,001	0,669
	Unconstructive methods of coping with stress	142,358	< 0,001	< 0,001	< 0,001	< 0,001
	Skipping school without a justification	255,373	< 0,001	< 0,001	< 0,001	< 0,001
	Peer exclusion	7,017	0,030	0,722	0,035	0,151
Problematic behaviours	Overall risky behaviour index	991,849	< 0,001	< 0,001	< 0,001	< 0,001
	Problematic internet use	33,651	< 0,001	< 0,001	< 0,001	0,877
	Risky online behaviour	53,132	< 0,001	< 0,001	< 0,001	0,003

Note. The *H* symbol refers to the Kruskal–Wallis *H* test. The pairwise comparisons include the Bonferroni correction.

The variables which differed the most significantly between the groups include:

1) highest scores given by pupils with a low level of engagement in problematic behaviours to:
   - school environment,
   - support of teachers,
   - attitude towards learning and school obligations,
   - lack of tolerance for risky behaviours;
2) highest scores given by pupils with a high level of engagement in problematic behaviours to:
   - examples of risky behaviours among peers,
   - approval of peers' risky behaviours,
   - access to psychoactive substances,
   - experience of violence and cyberbullying,
   - unconstructive methods of coping with stress,
   - tendency to skip classes.

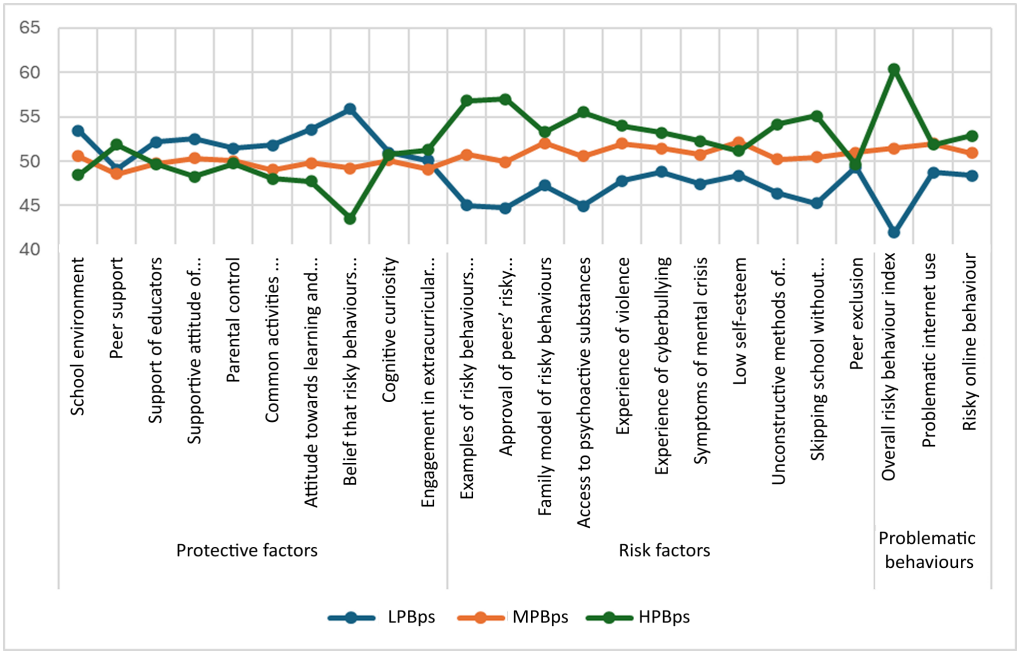

Figure 28. Comparison of secondary school pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the first measurement (T-scores)

During the second measurement, the groups were more alike in terms of protective factors, risk factors and problematic behaviours. At the same time, the tendency observed during the first measurement – to assign varied scores to protective factors compared with risk factors observed – was maintained. As similarity of pupils from individual groups increased, the number of significant differences decreased (Table 71).

Table 71. Comparison of secondary school pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the second measurement

	Protective factors, risk factors and problematic behaviours	Comparison		Pairwise comparisons (p val-ues)		
		H	p	HPBss-MPBss	HPBss-LPBss	MPBss-LPBss
Protective factors	School environment	14,212	< 0,001	0,387	0,001	0,034
	Peer support	20,779	< 0,001	0,688	< 0,001	0,004
	Support of educators	11,785	0,003	0,537	0,004	0,045
	Supportive attitude of teachers	16,284	< 0,001	0,954	0,001	0,003
	Parental control	8,322	0,016	0,769	0,034	0,058
	Common activities with parents	11,464	0,003	0,343	0,002	0,349
	Attitude towards learning and school obligations	13,374	0,001	0,337	0,001	0,055
	Belief that risky behaviours are not permitted	117,318	< 0,001	0,138	< 0,001	< 0,001
	Cognitive curiosity	0,906	0,636	0,881	0,374	0,491
	Engagement in extracurricular activity	4,202	0,122	0,484	0,138	0,453

Risk factors	Examples of risky behaviours among peers	63,128	< 0,001	< 0,001	< 0,001	0,022
	Approval of peers' risky behaviours	87,127	< 0,001	< 0,001	< 0,001	0,002
	Family model of risky behaviours	26,936	< 0,001	< 0,001	< 0,001	0,440
	Access to psychoactive substances	66,447	< 0,001	< 0,001	< 0,001	0,202
	Experience of violence	34,569	< 0,001	< 0,001	< 0,001	0,957
	Experience of cyberbullying	20,289	< 0,001	0,001	< 0,001	0,957
	Symptoms of mental crisis	27,296	< 0,001	0,112	< 0,001	0,017
	Low self-esteem	20,985	< 0,001	0,537	< 0,001	<0,001
	Unconstructive methods of coping with stress	24,536	< 0,001	0,001	< 0,001	0,526
	Skipping school without a justification	80,775	< 0,001	< 0,001	< 0,001	0,025
	Peer exclusion	1,857	0,395	0,936	0,731	0,697
Problematic behaviours	Overall risky behaviour index	196,565	< 0,001	< 0,001	< 0,001	< 0,001
	Problematic internet use	14,963	< 0,001	0,017	0,001	0,521
	Risky online behaviour	10,300	0,006	0,069	0,008	0,565

Note. The *H* symbol refers to the Kruskal–Wallis *H* test. The pairwise comparisons include the Bonferroni correction.

During the second measurement, all three groups differed significantly in terms of examples of problematic behaviours among peers, which was still the most prominent factor in the group of pupils with a high level of engagement in problematic behaviours. Similarly, approval of risky behaviours was clearly the highest in this group of pupils and stood out significantly compared with the remaining groups. The third differentiating factor between the groups was the tendency to skip school without a justification. All other differences between the variables only appeared in comparisons between the HPBss group and the LPBss group.

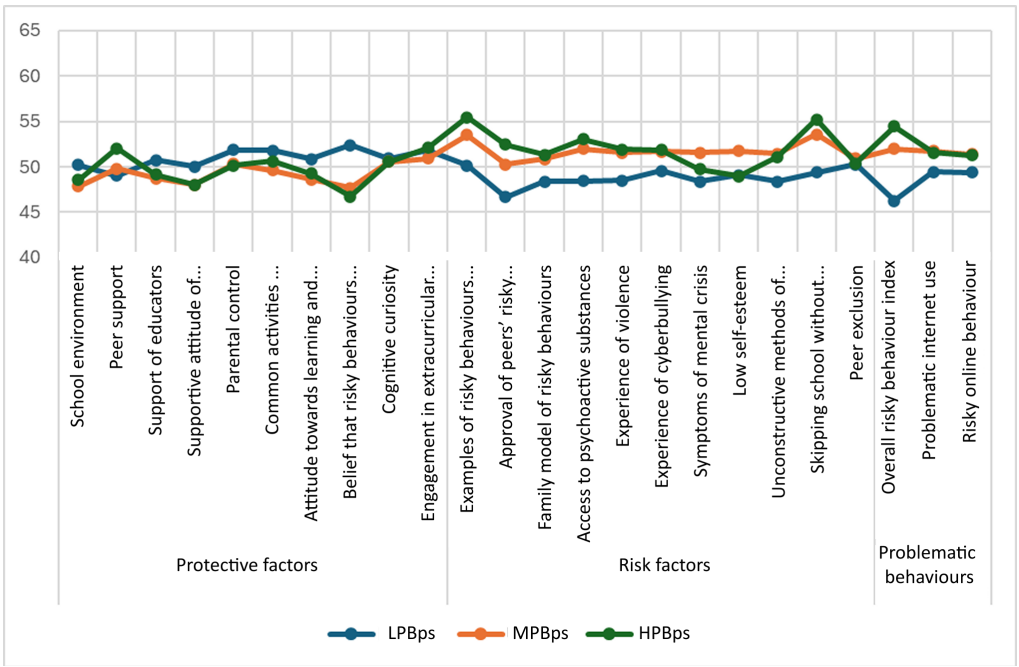

Figure 29. Comparison of secondary school pupils with different levels of engagement in problematic behaviours in terms of protective factors, risk factors and problematic behaviours analysed during the second measurement (T-scores)

The next sub-chapter defines correlations between changes in protective factors, risk factors and problematic behaviours and young people's participation in prevention education activities.

4.3.2.5. Correlation between changes in protective factors, risk factors and problematic behaviours and participation in prevention education activities in secondary schools

For secondary school pupils, regression analyses were performed analogically to those for the youth from primary schools. The correlation between protective factors and problematic behaviours was verified with the mediating role of risk factors and moderating role of prevention education activities. Where the model with moderation did not show any statistical significance, a less complex model with mediation between factors and problematic behaviours was verified.

Pupils with a low level of engagement in problematic behaviours (LPBss) – results of regression analysis

The first stage of verification of the model presented in Figure 23 is determining the correlation between the explanatory variable and the mediator (Table 72). When it comes to pupils with a low level of engagement in problematic behaviours, the more protective factors they perceive, the lower the intensity of risk factors ($\beta = -0.580$, $p < 0.001$). The former type of variables reduces the latter one. Activities for young people do not impact the dynamics of this correlation (for the interaction: $\beta = 0.005$, $p = 0.346$).

Table 72. Regression equation coefficients with moderation (protective factors x prevention education activities) for risk factors as the explained variable – the LPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	6,790	5,92	1,147	0,252	-4,839	18,419
Protective factors	-0,580	0,120	-4,841	< 0,001	-0,815	-0,345
Prevention education activities	0,428	0,240	1,782	0,075	-0,044	0,901
Protective factors x Prevention education activities	0,005	0,005	0,943	0,346	-0,005	0,014

Note. N = 534 (LPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

In the full model, where the problematic behaviours are the explained variable, only changes in risk factors are of significance to that variable ($\beta = -0.081$, $p < 0.001$) (Table 73). When their level increases, so does the risk that pupils will engage in more problematic behaviours. Since the model lacks evidence for direct correlation between protective factors and the number of prevention education activities, mediation analysis was carried out.

Table 73. Regression equation coefficients with moderation (protective factors x prevention education activities) for problematic behaviours as the explained variable – the LPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	1,681	0,98	1,716	0,087	-0,244	3,607
Protective factors	-0,015	0,02	-0,719	0,472	-0,054	0,025
Risk factors	0,081	0,016	4,956	< 0,001	0,049	0,113
Prevention education activities	0,047	0,041	1,154	0,249	-0,033	0,127
Protective factors x Prevention education activities	0,002	0,001	1,922	0,055	0,000	0,003
Risk factors x Prevention education activities	0,000	0,001	-0,076	0,94	-0,001	0,001

Note. N = 534 (LPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

Mediation analysis indicates that protective factors play a twofold role (Table 74). On one hand, when the level of protection increases, it is directly accompanied by higher frequency of problematic behaviours (β = 0.022, p = 0.005). The correct – from theoretical perspective – function of protective factors is only revealed in their correlation with risk factors. Protective factors reduce risk factors, thus reducing the level of engagement in problematic behaviour [β = 0.022, 95% CI (-0.051; -0.026)]. Therefore, the impact of protective factors is indirect.

Tabela 74. Regression equation coefficients dla mediacji między czynnikami chroniącymi i czynnikami ryzyka z zachowaniami problemowymi jako zmienną objaśnianą – grupa NZPpp

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	2,775	0,378	7,342	< 0,001	2,032	3,517
Protective factors	0,022	0,008	2,792	0,005	0,007	0,038
Risk factors	0,080	0,007	11,709	< 0,001	0,067	0,094
Mediation effect of risk factors in the correlation between protective factors and problematic behaviours	-0,038	0,006*			-0,051*	-0,026*

Note. N = 534 (LPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β. * - the values marked with an asterisk were estimated using the bootstrapping method; if the confidence interval does not contain a zero, the coefficient is deemed statistically significant.

Pupils with a moderate level of engagement in problematic behaviours (MPBss) – results of regression analysis

Prevention education activities offered to pupils with a moderate level of engagement in problematic behaviours are connected with the level of risk factors in their environment (Table 75). More activities of this type are organised when the level of risk factors increases ($\beta = 1.446$, $p < 0.001$). An increase in protective factors, in turn, results in fewer risk factors being observed among the young people ($\beta = -0.703$, $p < 0.001$). Activities for pupils do not change this function of the protective factors.

Table 75. Regression equation coefficients with moderation (protective factors x prevention education activities) for risk factors as the explained variable – the MPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-27,844	7,408	-3,759	< 0,001	-42,403	-13,285
Protective factors	-0,703	0,143	-4,901	< 0,001	-0,985	-0,421
Prevention education activities	1,446	0,300	4,817	< 0,001	0,856	2,035
Protective factors x prevention education activities	0,005	0,006	0,829	0,408	-0,007	0,017

Note. N = 440 (MPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

When it comes to changes in problematic behaviours of pupils from the MPBss group, both risk factors (β = 0.101, p < 0.001) and protective factors (β = -0.042, p = 0.033) are of direct importance. However, the impact of protective factors is moderated by prevention education activities (β = -0.002, p = 0.028). When they are taken into account, a higher level of protective factors corresponds to a decrease in problematic behaviours (Table 76).

Table 76. Regression equation coefficients with moderation (protective factors x prevention education activities) for problematic behaviours as the explained variable – the MPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-1,120	0,975	-1,149	0,251	-3,037	0,796
Protective factors	0,042	0,02	2,137	0,033	0,003	0,081
Risk factors	0,101	0,013	8,105	< 0,001	0,077	0,126
Prevention education activities	0,046	0,041	1,128	0,260	-0,034	0,126
Protective factors x prevention educa-tion activities	-0,002	0,001	-2,207	0,028	-0,003	-0,000
Risk factors x prevention education activities	0,000	0,000	-0,703	0,483	-0,001	0,001

Note. N = 440 (HPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

However, protective factors only affect problematic behaviours starting from a high level of the variable measuring the presence of activities for pupils in the school environment. It is above the 90th percentile of this variable's value. This means that protective factors fulfil their role in environments that operate across multiple aspects, where activities for pupils cover a broad spectrum of subjects (listed in previous chapters, where the pupils' opinion on schools' prevention education measures was described).

Due to the presence of the moderating function only in terms of direct impact of protective factors, the mediation effect between the two types of factors was additionally verified (Table 77).

Table 77. Regression equation coefficients for mediation between protective factors and risk factors with problematic behaviours as the explained variable – the MPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-0,177	0,35	-0,505	0,614	-0,866	0,512
Protective factors	0,003	0,007	0,455	0,649	-0,011	0,018
Risk factors	0,095	0,006	15,962	< 0,001	0,083	0,106
Mediation effect of risk factors in the correlation between protective factors and problematic behaviours	-0,054	0,007*			-0,069*	-0,040*

Note. N = 534 (LPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β. * - the values marked with an asterisk were estimated using the bootstrapping method; if the confidence interval does not contain a zero, the coefficient is deemed statistically significant.

The collected data confirm the mediation [β = -0.054, 95% CI (-0.069; -0.040)]. Protective factors also indirectly impact problematic behaviours in secondary school pupils with a moderate level of engagement in problematic behaviours. At the same time, it is the first described group in which prevention education activities modify the direct correlation between protective factors and behaviours of the youth.

Pupils with a high level of engagement in problematic behaviours (HPBss) – results of regression analysis

Among pupils with a high level of engagement in problematic behaviours, protective factors reduce the level of risk factors (β = -0.699, p < 0.001) – Table 78. Prevention education activities, in turn, are more frequent when risk factors increase (β = 1.166, p < 0.001).

Table 78. Regression equation coefficients with moderation (protective factors x prevention education activities) for risk factors as the explained variable – the HPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-44,147	8,289	-5,326	< 0,001	-60,447	-27,848
Protective factors	-0,699	0,138	-5,05	< 0,001	-0,972	-0,427
Prevention education activities	1,166	0,329	3,549	< 0,001	0,520	1,813
Protective factors x prevention education activities	0,005	0,005	0,966	0,335	-0,005	0,016

Note. N = 368 (HPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

Risk factors affect problematic behaviours in conjunction with the number of prevention education activities (Table 79). What is important is the interaction between the factors and the activities (β = -0.002, p = 0.005). As a result of the activities being organised, risk factors do not increase the probability of pupils engaging in problematic behaviours.

Table 79. Regression equation coefficients with moderation (protective factors x prevention education activities) for problematic behaviours as the explained variable – the HPBss group

Model components	Regression equation coefficients					
	β	se	t	p	LLCI	ULCI
Constant	-4,778	1,201	-3,977	< 0,001	-7,14	-2,416
Protective factors	0,013	0,021	0,618	0,537	-0,028	0,054
Risk factors	0,146	0,016	9,345	< 0,001	0,115	0,177
Prevention education activities	0,053	0,046	1,134	0,257	-0,039	0,144
Protective factors x prevention education activities	0,000	0,001	-0,553	0,581	-0,002	0,001
Risk factors x prevention education activities	-0,002	0,001	-2,853	0,005	-0,003	-0,001

Note. N = 368 (HPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β.

The estimated model also provides evidence for an indirect role of protective factors, dependent on the frequency of activities organised in schools (Table 80).

Table 80. Coefficients for mediation between the level of protective factors → risk factors → problematic behaviours moderated by prevention education activities in the school environment of pupils from the HPBss group

Levels of the moderator: prevention education activities	Coefficients for the moderated mediation			
	β	se*	LLCI*	ULCI*
12,816 (M – 1SD)	-0,078	0,014	-0,107	-0,051
23,546 (M)	-0,060	0,009	-0,077	-0,043
34,277 (M + 1SD)	-0,045	0,010	-0,066	-0,025

Note. N = 368 (HPBss group). LLCI, UPLCI – upper and lower limit of the 95% confidence interval for a non-standardised coefficient β. * - the values marked with an asterisk were estimated using the bootstrapping method; if the confidence interval does not contain a zero, the coefficient is deemed statistically significant.

Protective factors reduce the risk associated with problematic behaviours by affecting the risk present in the environment. This effect occurs when the number of activities organised is average, low and high (these statements correspond to the mean value and +/- one standard deviation). However, the biggest impact is observed in the case of low or average participation in activities. This is due to the nature of the calculations made. The aforementioned effect is the product of two effects: 1) the impact of protective factors on risk factors; 2) the effect of risk factors influencing problematic behaviours. Only the latter one depends on the number of preventive activities. Hence, the more preventive activities, the lower the impact of the risk factors. On the other hand, as lower and lower values of one of the factors are introduced into the product, it appears to weaken the impact of the former factor – the protective factor. For this reason, one can claim that the effect of protective factors is constant – independent of the number of activities offered to pupils. However, a larger number of such activities reduces the effect of the risk factors. As a consequence, the product of these two effects is also lower.

Chapter 5
Research conclusions

This chapter presents research conclusions in order corresponding to the analyses described in the previous chapter. They pertain to the pervasiveness of problematic behaviours, pupils' opinions on prevention education activities and the correlation between these activities and protective factors, risk factors and problematic behaviours.

5.1. Problematic behaviours in pupils

In the population of primary school pupils, the percentages of pupils with different levels of engagement in problematic behaviours are as follows: low level – 59.2% of respondents, moderate level – 31.3%, high level – 9.5%. The overall problematic behaviour index, based on which the pupils were divided into groups, covers psychoactive substance use (smoking or vaping, drinking beer, wine, stronger liquors, getting drunk) and violence (non-verbal and verbal abuse, including offending others online). In the first group, any occurrences of these behaviours have typically taken place once or several times in a lifetime. The group with a moderate level of engagement in problematic behaviours comprises pupils who use violence, usually non-verbal abuse and mainly with a frequency of up to "several times a week". Similarly to the pupils from the first group, they practically refrain from using legal drugs. Pupils with a high level of engagement in problematic behaviours – in addition to using violence – drink beer and smoke. They typically consume alcohol several times a year and smoke up to several times a week. In general, boys and pupils attending final grades of primary school are more likely to engage in problematic behaviours.

In the population of secondary school pupils, the percentages of individual at-risk groups are less diversified. The differences between the groups are also of another nature. In primary schools, the differences between the groups consisted not only in the frequency of engagement in problematic behaviours, but also in the type of behaviours (pupils from the moderate

group were mainly involved in violence). On the other hand, in older pupils, the differences are limited to the frequency of the same behaviours. Pupils with a low level of engagement in problematic behaviours make up 39.8% of the population. Moderate level of engagement is observed in 32.8% of all pupils, while high level – in 27.4%. The most frequently occurring problematic behaviours are verbal abuse, browsing erotic websites, smoking or vaping and drinking beer.

The above indicates that the most frequent problematic behaviours in pupils include: verbal abuse, offending others online, using cigarettes and beer. A relatively small percentage of individuals engaged in these behaviours attends primary schools, which suggests that universal prevention and health promotion programmes are mainly needed at this stage of education. In secondary schools, due to a larger number of pupils exhibiting problematic behaviours, it is important to implement selective and indicated prevention measures, preceded by a diagnosis of the type of problems in a given local environment.

5.2. The pupils' opinion on prevention education activities

This section of conclusions answers the first research question: "What type of prevention education activities have pupils with different levels of engagement in problematic behaviours participated in and what is the pupils' opinion about these activities?".

In primary schools, the most frequently indicated subject of prevention education activities was handling online abuse and online safety (approximately 50% of pupils declared that they have participated in at least one to four class hours dedicated to this subject). Meetings dedicated to the issue of smoking and drinking alcohol were also frequently organised (approximately 40% of pupils), along with class integration events (more than 30%). At the same time, it indicates that the majority of pupils have not participated in prevention education activities at all or – if such meetings have been organised – they were uncertain about the subject of those meetings. However, the themes indicated by the participants are consistent with the most common

risks at this stage of education, i.e. problems related to violence and smoking, as mentioned in the previous section.

Prevention education measures were primarily carried out in small groups or classes. The most appreciated aspect of these activities for pupils who described them was a friendly atmosphere and acceptance on the part of facilitators. The least frequently mentioned benefits were usefulness of the discussed subject matter in the pupils' daily lives and development of the skill of coping with difficulties. Similarly low ratings were given to the opportunity to be honest when talking about difficult matters. How much pupils benefited from the activities was independent of the facilitator. Regardless of whether it was a teacher, external expert or school expert, the young people deemed the activities moderately useful. Pupils with a high level of engagement in problematic behaviours tended to give slightly lower scores. Apart from this single difference, primary school pupils' opinions on prevention education activities were similar between groups with various levels of engagement in problematic behaviours.

Among secondary school pupils, the most frequently indicated subject of prevention education activities was online safety (approximately 44% of young people have participated in at least one to four class hours on the subject), class integration (approximately 43%), psychoactive substance prevention (approximately 41%) and handling online abuse (39%). Pupils with a high level of engagement in problematic behaviours indicated participation in such activities more frequently.

The predominant form of activities was work in small groups or classes. Secondary school pupils gave the highest scores to the following aspects of school activities: the opportunity to ask follow-up questions and comment on the discussed content. It was also important for the facilitator to show acceptance and take the pupils' suggestions into account. The least frequently indicated benefits were the opportunity for pupils to honestly discuss difficult subjects and usefulness of the subject-matter in pupils' daily lives. Pupils with a high level of engagement in problematic behaviours were less likely to think that the atmosphere during the activities was positive. Compared with their peers, they

also less frequently saw an opportunity to suggest their own topics to the facilitators. However, this group of pupils was more appreciative of the opportunity to get to know themselves better and gain knowledge about the issues discussed during prevention education activities.

In primary school environments, the pupils' level of engagement in problematic behaviours does not result in different opinions about prevention education measures. Approximately a half of pupils have identified the subjects of these activities and their presence in schools. The most appreciated aspect was a sense of acceptance by the facilitators. The situation is similar in secondary school environments, with one difference: pupils with a high level of engagement in problematic behaviours are more likely to declare participation in those activities and their importance for getting to know themselves better and developing knowledge. A recommended change would be to highlight the practical aspects of subjects discussed during the prevention education measures. Since pupils are rarely aware of the utility of those measures in their daily lives, it is important to adapt the subject matter and content to the pupils' actual needs and problems. This is also true at the level of universal prevention and health promotion – the effectiveness of such activities will increase if they correspond to the pupils' needs.

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5.3. Trends in problematic behaviours, protective factors and risk factors in groups of pupils with different levels of engagement in problematic behaviours

The following summary of research results answers the third research question: "Are there differences in protective factors, risk factors and problematic behaviours in groups of pupils with various levels of engagement in problematic behaviour between the first and second measurement?".

5.3.1. Primary school pupils

Quantitative and qualitative changes in primary school pupils' problematic behaviours as well as in protective factors and risk factors describing their environments depend on the level of young people's engagement in problematic behaviours.
The group of pupils with a low level of engagement in problematic behaviours predominantly indicated the following responses at the first stage of the study:

- among protective factors: school environment, support of teachers, lack of approval of problematic behaviours;
- among risk factors: experience of cyberbullying, skipping school without a justification, exclusion from the peer group;
- among problematic behaviours: risky and problematic internet use.

One year later, the main change in this group was an increase in risk factors. The key differences included a larger number of examples of problematic behaviours among peers, higher approval of such behaviours, increased negative examples in the family and a higher level of engagement in problematic behaviours.
The main aspects of the group of pupils with a moderate level of problematic behaviours were:

- among protective factors: supportive attitude of class educators, pupils' social and emotional competences;
- among risk factors: adverse examples of problematic behaviours in the family and peer group;
- among problematic behaviours: the overall problematic behaviour index (aggregate index of legal drug use and violence).

In general, the level of risk factors was higher than that of protective factors. During the second measurement, there were few changes in factors and behaviour in this group. The biggest ones concerned intensified risk factors, especially the tendency to skip school without a justification and examples of problematic behaviours among peers.

During the first measurement, pupils with a high level of engagement in problematic behaviours exhibited mainly:

- among protective factors: support of educators, engagement in extracurricular educational or sport activity;
- among risk factors: the belief about availability of psychoactive substances, experience of violence and negative behaviour model from the family;
- among problematic behaviours: substance use and violence.

In this group of pupils, risk factors were also more prominent than protective factors, although the changes observed after one year were generally constructive. They included increased peer support and cognitive curiosity, as well as reduced personal approval of risky behaviours and belief about the availability of psychoactive substances. After one year, young people in the discussed group also reported fewer experiences associated with cyberbullying and decreased overall index of problematic behaviours.

Additional information about primary school pupils was provided by the results of inter-group comparisons, which were carried out twice – at the first and second stage of the study (one year later). The patterns observed are presented below.

- Only pupils with a low level of engagement in problematic behaviours generally rated protective factors higher than risk factors during the first measurement. In other groups, the opposite trend was observed and risk factors had the highest values in particular in the group with a high level of engagement in problematic behaviours.
- Certain factors showed significant differences between the groups during the first measurement. Pupils with a high level of en-

gagement in problematic behaviours reported considerably less support on the part of teachers, had weaker social and emotional competences, were more accepting of problematic behaviours and had better access to psychoactive substances, were more likely to experience cyberbullying, skip classes and have lower self-esteem than pupils from other groups. Moreover, these traits exhibit a trend – higher level of engagement in problematic behaviours corresponds to higher risk and lower protection in the listed areas.

- During the second measurement, the differences between the groups became less prominent, primarily due to changes in the group with a low level of engagement in problematic behaviours and the group with a high level of engagement. In the former group, the changes are detrimental from the point of view of objectives of prevention. Protective factors have receded, while risk factors have intensified. An opposite trend – in line with the objective of prevention – was observed in the group of primary school pupils with a high risk level.

5.3.2. Secondary school pupils

For secondary school pupils with a low level of engagement in problematic behaviours, the most prominent aspects during the first measurement were:

- among protective factors: school environment, positive attitude towards learning and obligations, as well as the belief that risky behaviours are not permitted;
- among risk factors: experience of cyberbullying, low self-esteem and risk of peer exclusion;
- among problematic behaviours: problematic internet use.

This group generally gave higher scores to protective factors than to risk factors. Changes observed after one year were adverse – a decrease in protective factors and an increase in risk factors and problematic behaviours. This trend can be explained by a smaller number of prevention activities reported by the pupils (compared with other groups), accompanied by the impact of negative behaviour models among peers. This factor intensified after one year, so it could potentially be connected with other adverse chan-

ges. Factors which pupils indicated as the most important ones during the first measurement – the belief that certain behaviours are not permitted, attitude towards learning and the school environment – have decreased. The negative changes in examples of problematic behaviours among peers were accompanied by the pupils having an increased sense of availability of substances, skipping classes more frequently and exhibiting more engagement in problematic behaviours.
The key protective factors, risk factors and problematic behaviours in the group of secondary school pupils with a moderate level of problematic behaviours are:

- among protective factors: positive school environment, support of teachers, parental control and cognitive curiosity;
- among risk factors: risky behaviour models in the family, experience of violence and low self-esteem;
- among problematic behaviours: the overall problematic behaviour index.

There were few changes in this group after one year's time. All of them were adverse – the ratings of the school environment and support of teachers have dropped, while the tendency to skip classes and negative behaviour patterns among peers have increased.
A high level of engagement in problematic behaviours was primarily accompanied by:

- among protective factors: peer support, engagement in extracurricular activities that develop the pupils' interests;
- among risk factors: problematic behaviours among peers and approval of such behaviours;
- among problematic behaviours: the overall problematic behaviour index.

Young people with a high level of problematic behaviours participated in the largest number of prevention education activities during the analysed year. The changes recorded at the end of the year were constructive in nature. First and foremost, the pupils were less likely to engage in risky behaviours. At the same time, the role of parents has increased thanks to joint activities of young people and their caregivers. There was also a change in norms, as a result of which young people were less likely to approve of

risky behaviours and accept them as permissible. Their ability to cope with crises and stressful situations has also improved. These changes are consistent with the topics of the activities listed by pupils from this group, i.e. legal drugs and coping with problems.

A comparison between the groups of young people with varied levels of engagement in problematic behaviours demonstrates that:

- during the first measurement, pupils with a low level of engagement in problematic behaviours generally assigned higher scores to protective factors than to risk factors. The opposite was true for the group with a high risk index, in which the high risk was accompanied by higher ratings of availability of psychoactive substances, approval of risky behaviours, experience of violence, ineffective methods of coping with stress and negative models of behaviour in the pupils' immediate environment;
- during the second measurement, the groups became more similar in terms of the levels of protective factors, risk factors and problematic behaviours. As in the younger pupils' case, this was due to negative changes in the group which initially presented a low level of engagement in problematic behaviours and constructive changes in the group with a high problem index. Despite this fact, the trend of higher levels of engagement in problematic behaviours being accompanied by higher approval of such behaviours, modelling of such behaviours and lower problem handling skills remained.

Contrary to the assumptions made, constructive changes were exhibited mainly by the group of pupils with a high level of engagement in problematic behaviours, while the negative ones – by young people with a low level of engagement in such behaviours. This effect can be explained by insufficient quantity or low effectiveness of universal prevention and health promotion measures. The shortcomings of these measures may result in the pupils being affected by typical mechanisms explaining the occurrence of dysfunctions, especially increased number of negative messages from peers and pupils' approval of problematic behaviours. Absence of countermeasures in the form of prevention activities leads to intensified problematic behaviours. The changes observed in high-risk groups seem to confirm this pattern.

At the level of secondary school, pupils with a high risk level typically participate in prevention activities, which is connected with risk factors in their environment diminishing and protective factors being strengthened. It can be assumed that prevention activities are, in particular, addressed to the high-risk group and have the anticipated effects. On the other hand, universal and health promotion measures in groups of pupils who rarely engage in problematic behaviours require improvement.

5.4. Correlation between changes in protective factors, risk factors and problematic behaviours and pupils' participation in prevention education activities

The last analyses concerned the following research question: "What is the correlation between changes in protective factors, risk factors and problematic behaviours of pupils and their participation in prevention education activities?".

The "changes" referred to in this question were estimated as the difference between the first and second measurement, obtained by deducting the values of individual variables.

5.4.1. Primary school pupils

- In the group of pupils with a low level of engagement in problematic behaviours, prevention activities do not have a major impact on risk factors, problematic behaviours or protective factors. Their effectiveness in these areas cannot be determined based on the analysis results. At the same time, this group exhibits a pattern which consists in protective factors decreasing the pupils' engagement in problematic behaviours by reducing the impact of risk factors. On the other hand, smaller role of protection was correlated with stronger influence of risk factors. Increasing the number of universal prevention measures in this group would strengthen the function of protective factors described above. Prevention education measures can become more effective by focusing on development or introduction of protective factors.

- In the group of primary school pupils with a moderate level of engagement in problematic behaviours, the correlations are analogous to those determined for the group with a low risk level. The only difference is the correlation between the frequency of prevention education activities and intensity of risk factors. Higher intensity was accompanied by more frequent activities – seemingly organised in response to the risk perceived in the environment. Protective factors influence problematic behaviours indirectly by reducing the impact of risk factors. The same conclusions apply to the group of pupils with a high problematic behaviour index.

5.4.2. Secondary school pupils

- In the group of young people with a low level of engagement in problematic behaviours, the effectiveness of prevention education activities is insignificant. They are independent from the correlation between protective factors, risk factors and problematic behaviours. The role of risk factors is based on the rule that a higher level of those factors means a higher level of engagement in problematic behaviours. Protective factors, in turn, act indirectly – they reduce the level of risk factors and therefore also of problematic behaviours.
- Among pupils with a moderate level of problematic behaviours, there are two important types of correlation between problematic behaviours, risk factors and protective factors. The first one is direct and concerns risk factors and problematic behaviours. Higher intensity of these factors correlates with a higher the risk of engagement in such behaviours. The second correlation, on the other hand, concerns protective factors and depends on the pupils' participation in prevention education activities. When pupils participate in such activities, protective factors have two effects. The direct effect is reduced level of problematic behaviours; while the indirect one – mitigated impact of risk factors. The effectiveness of prevention education is only clearly visible when schools simultaneously organise activities dedicated to multiple aspects of pupils' lives. This conclusion applies to pupils with a moderate level of engagement in problematic behaviours, whose risk level is not high yet.

- In the group of pupils with a high level of engagement in problematic behaviours, organising prevention education activities is also important for the quality of prevention. If the pupils take part in the activities, the impact of risk factors is reduced. The more of such activities are organised, the lower is the risk of problematic behaviours persisting. Protective factors, which mitigate the effect of risk factors, also depend on organisation of prevention education activities. It can be concluded that such activities are the most effective when they correspond to the pupils' problems. Thus, in the case of pupils with a high level of engagement in problematic behaviours, multiple facets of prevention measures are less important than ensuring that they match the young people's needs. It would be recommended to focus on this aspect in subsequent studies and analyses dedicated to the effectiveness of prevention education measures

Prevention education activities are becoming an important component of measures targeting protective factors, risk factors and thus also problematic behaviours in groups of pupils engaging in such behaviours. It can be concluded that if young people behave in a problematic manner, it creates the need to implement remedial measures at school. Such measures reinforce protective factors, which simultaneously mitigate the impact of risk factors. In the case of pupils with a lower level of engagement in problematic behaviours, it should be crucial to introduce universal prevention education activities. Their absence triggers the tendency to increase the frequency of problematic behaviours among pupils, primarily as a result of negative behaviour examples among peers. In older grades, this is accompanied by inability to handle stressful situations and tendency to have a lowered self-esteem. In the case of pupils with a low or moderate risk level, it is therefore important to introduce activities dedicated not only to reduction of problematic behaviours, but also to strengthening the pupils' competences in terms of dealing with difficulties, building and maintaining constructive peer relationships. In prevention, it is also crucial to focus on the pupils' overall development instead of isolated measures. Only activities that take multiple aspects into account and touch upon a wide range of subjects reduce the risk of engagement in new problematic behaviours.

The situation is different in the group of pupils with a high level of engagement in problematic behaviours, for whom activities mitigate the risk factors, both directly and by activating protective factors. What is more, those activities are the most effective if they correspond to the pupils' problems.

Conclusion

The book presented to you is the second of two publications dedicated to prevention education at school (the first one was by Poleszak and Kata, 2023). These publications can be treated as a whole. The first one was focused around the dynamics of problematic behaviours and their dependence on protective factors and risk factors. Its objective was to help school experts diagnose the demand for educational and psycho-prevention measures, as well as prepare and implement content as part of the prevention education programme at school. The second publication, in turn, focuses on the effectiveness of those measures. Theoretical assumptions are dedicated to presenting standards aimed at improving the quality of psycho-prevention in children's and young people's environment. In the research part, an attempt was made to demonstrate the effectiveness of school psycho-prevention activities.

The emphasis on the effectiveness of school psycho-prevention is not accidental. It reflects the will to contribute to the debate among Polish psycho-prevention experts on which prevention model should be implemented. As a reminder, one of the models leans towards a broad set of recommended programmes (collected in the bank of recommended programmes) and their implementation at school – as decided by the principal and/or in line with the municipal funding. An argument that supports this approach is undoubtedly the necessity to meet the recommendation requirements, i.e. to verify whether the programmes meet the selected standards of effective prevention. It should be noted that this approach also has certain limitations. The bank only contains approximately 30 prevention programmes, which do not cover all of children's and young people's problems and lack proposals for certain age groups. Although the bank of recommended programmes is undoubtedly a step in the right direction, its resources provide an insufficient response to the school environment's demand.

The second model is implementation of the provisions of the Act – Educational Law, which assumes making a diagnosis and using it to develop a prevention education programme for a school and institution. The latter model does not rule out inclusion of recommended prevention programmes in measures applied in schools. When psycho-prevention is handled correctly, i.e. in line with previously described standards, the advantage of this approach is adaptation of measures to the demands and specificity of a given school environment. On the other hand, the said approach has a few drawbacks, the most important being the quality of diagnoses and school programmes as well as the effectiveness of the educational and psycho-prevention measures themselves. Another issue is the place of prevention education at school and what it means for the school's operations. Finally, supervision over the quality of prevention education activities is, according to the Act, exercised by the school principal and the education inspectorate.

The aforementioned discussion mainly concerns the postulated weaknesses of the prevention at school in Poland. We have decided to take part in this debate in two ways. Firstly, together with the Ministry of National Education, we prepared a platform for diagnosing the demand for education prevention content in the school environment. The platform was developed within the framework of the same project that both publications also are a part of. The platform contains psychometrically verified tools for analysing children and young people (adapted to the age group and stage of development), measuring protective factors, risk factors and problematic behaviours. It also allows for conducting remote studies, which are presented in the form of collective reports with recommended prevention measures, depending on the results obtained.

Secondly, we prepared publications which, on one hand, demonstrate the problems faced by children and young people, and on the other hand – verify the effectiveness of prevention measures. It follows from the conducted analyses that prevention education measures in a given environment are effective so long as they are adequate to the pupils' needs and are organised with sufficient frequency. An important conclusion drawn from the research is the fact that the analysed schools respond to problems too late. They only intervene once the problems have materialised – and although

the measures are effective, a considerable group of young people (deprived of universal prevention) engages in problematic behaviours. This points to the problem of schools not applying enough (or any) measures in advance, i.e. universal prevention measures. As a result, schools reinforce protective factors to a small extent (even though logic suggests that there should be more such measures since they fit within the framework of the pupils' education process). It can lead to situations in which pupils are more exposed to the effects of risk factors and can be described as a sin of negligence. If problematic behaviours occur in the environment, schools undertake effective prevention measures at the level of indicated prevention. Their effectiveness mainly involves reduction of risk factors, which is highly desirable and translates to reduction of problematic behaviours.

We hope that these patterns will allow for positive steps towards improving the effectiveness and efficiency of education and psycho-prevention in school environment. At the same time, we provide arguments that prevention measures in schools – despite their imperfections and the need for improvement – are effective. Therefore, it is recommended to support and develop them instead of abandoning them.

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Appendices

Psychometric properties of the applied tools

The following Tables contain additional information pertaining to analysis of the results of own studies. The data are divided into sections relating to areas of analysis or chapters of the book.

Table 81. Variables included in the measured protective factors – information about the number of items and reliability (coefficient omega)

Name of the variable	Number of items	Reliability	Description of the factor
School environment	3	0,729	School environment comprises multiple factors, namely: the school's organisational structure, interpersonal relations (between pupils, between teachers and pupils, between teachers and parents), teaching methods, forms of discipline and education used, sense of safety, participation in important decisions, etc. (Ostaszewski, 2019). As a result, it measures the pupil's well-being when interacting with the school environment and people who are a part of it.
Peer support	6	0,848	Belonging to a peer group is necessary to meet one's developmental needs. In their lives, people universally strive to establish and maintain at least the minimum number of long-term, important interpersonal relations (Leary, 2001). Peer support means having a sense of acceptance, openness in a relationship and interest on the part of peers, aimed at getting to know the individual (Leary, 2001; Jaskulska, Poleszak, 2015).
Support of educators	6	0,918	Support on the part of educators involves experiencing emotional warmth, care and a sense of bond. It is characterised by the educator providing encouragement, advice and reliable information, showing care, appreciation and hearing pupils out, but also controlling negative behaviours.

Supportive attitude of teachers	9	0,840	Supportive attitude of teachers means their involvement in the field of learning and creating conditions that allow the pupil to experience acceptance, respect, regard for their personal dignity, support throughout the learning process, as well as fair evaluation, with clearly set expectations and boundaries, along with learning to be responsible.
Parental control	5	0,837	Parental control means heartfelt concern for and interest in various aspects of the child's life. It involves checking how and with whom the child spends their time after school and free time, enquiring about the peer network and monitoring what the child spends their money on.
Common activities with parents	9	0,822	Common activities with parents measure the frequency of spending time together with the child in various ways. Spending time actively, for example by doing sports together, playing board games, pursuing interests and hobbies or doing house chores will build close family relations. Another important aspect of this time is conversation – about school-related issues, other matters concerning the child as well as on home-related subjects. Such behaviours show coherence of the family system and existence of close, supporting bonds (Jessor, 2014).
Attitude towards learning and school obligations	4	0,841	Attitude towards learning and school obligations means the pupils' beliefs about the importance and necessity of what they learn at school, as well as their ability to use the knowledge they gain in the future.
Belief that risky behaviours are not permitted	13	0,928	The belief that risky behaviours are not permitted means the pupils' feelings and opinion about whether they are allowed to engage in particular risky behaviours, such as: using different types of psychoactive substances, premature sexual activity, gambling, aggressive and violent behaviours. It reflects the pupils' personal beliefs about problematic versus pro-health behaviours.

Cognitive curiosity	19	0,745	Cognitive curiosity (the need for cognition; NFC) refers to "an individual's (permanent) tendency to engage in and enjoy intellectual and mental effort" (Cacioppo & Petty, 1982, p. 116). Individuals with a high level of this trait are eager to undertake tasks that require thinking and problem-solving. It does not change their attitude towards other, effortless tasks. Such individuals have more experience with seeking knowledge, analysing problems and therefore also have larger vocabularies and more general knowledge (Matusz, Gąsiorowska, Traczyk, 2011).
Engagement in extracurricular activity	15	0,712	Extracurricular activity includes: time dedicated to preparing for school activities, time spent developing one's interests in groups, clubs, sections, as well as individually, volunteering, scouting or participating in meetings of religious groups. R. Jessor and M. S. Turbin (2014) include such activities in pro-social actions, which are approved by the environment and involve not only working for other people's benefit, but also for the one's own development.
Social and emotional intelligence	34	0,974	Social and emotional intelligence is a set of skills, attitudes and knowledge that serve as the basis for pro-health behaviour in children and youth. They involve skilful emotional management, achieving personal and community goals, quality relations with other people, the ability to build and maintain such relations and make responsible decisions. Such skills are necessary to correctly fulfil a number of social roles and perform developmental tasks (Elias, 2003; Park et al., 2017).

Source: Own elaboration

Table 82. Variables included in the measured risk factors – information about the number of items and reliability (coefficient omega)

Name of the variable	Number of items	Reliability	Description of the factor
Examples of risky behaviours among peers	12	0.924	Peers' engagement in problematic behaviours (including psychoactive substance use, violence) observed by the pupils is a risk factor that considerably increases the likelihood of their engagement in analogous behaviours. Negative examples among peers belong to the group of factors describing the social and school environment (Jessor, 2017).
Approval of peers' risky behaviours	13	0.921	It refers to the pupils' assessment of their peers' problematic behaviours. This assessment is expressed as approval of, indifference towards or criticism of risky actions taken by peers. At the same time, it is an index of the pupils' commitment to conventional, pro-health norms versus rejection of those norms in favour of their peers' negative influence (Jessor, 2016).
Family model of risky behaviours	8	0.886	This factor, similarly to the negative examples among peers, describes the social context in which pupils operate. It concerns the frequency with which pupils observe their family members using violence or psychoactive substances. This factor is extremely important when it comes to explaining pupils' behaviour, which is supported by a number of studies (Jessor, 2017).
Access to psychoactive substances	8	0.927	As an element of the social context in which the pupils operate, this factor reflects the young people's belief about ease of access to psychoactive substances despite norms and regulations prohibiting their purchase and consumption. This factors contributes to the pupils' belief about the possibility to engage in risky behaviours and relativity of social norms (Jessor, 2014).

Experience of violence	9	0.902	Violence is defined as aggressive behaviour inflicted by a person or group of people. The goal of this behaviour is to cause physical or psychological harm to another person, as well as to threaten or bully them or to force them to do a specific thing. This phenomenon is characterised by: intentionality, repetition and systematic occurrence of such behaviour (Dąbkowski, 2013).
Experience of cyberbullying	7	0.904	Cyberbullying means intentional acts of aggression, repeated for a certain amount of time and characterised by power imbalance, using mediated communication or different types of online tools (Pyżalski, 2012, 2014). Cyberbullying includes not only offending or ridiculing someone via messengers and on online forums, but also publishing degrading content or excluding someone from online communities (Kowalski, Limber, Agatson, 2008; Pyżalski, 2012).
Symptoms of mental crisis	29	0.964	Crisis is a reaction to "an obstacle that, at the time, is insurmountable using typical problem solving methods" (James, Gilliland, 2006, p. 25). This reaction can lead to disorganisation, with the affected person experiencing anxiety, shock and difficulties associated with a certain situation (Brammer, 1984). When observing a pupil's conduct, symptoms of mental crisis include a number of characteristics, behaviours and emotional reactions that demonstrate the severity of the experienced difficulties (Poleszak, Kata, 2022).
Low self-esteem	14	0.891	It means the pupils' assessment of and attitude towards selected individual traits as well as conditions in which they operate (e.g. the quality of peer relations, development perspectives). While stable and high self-esteem plays a crucial role in correct development and maturation, low self-esteem can generate a sense of rejection and dissatisfaction with oneself. Risky behaviours, in turn, can be a form of coping with these negative feelings (Jessor et al., 1995).

Unconstructive methods of coping with stress	10	0.747	Coping with stress means any cognitive and behavioural actions of a person that lead to handling internal and external factors described by that person as cumbersome and beyond their capacity (Lazarus, Folkman, 1984). As a consequence, unconstructive methods of coping with stress will not solve the problem itself, but will involve escapism or merely diffusing the emotional tension.
Skipping school without a justification	8	0.900	This factor concerns the frequency of pupils deciding to skip classes without a justification, whether alone, with the whole class or selected peers. This element of involvement in education and learning has a significant impact on the risk of engagement in problematic behaviours.
Peer exclusion	4	0.805	Exclusion is disruption of the process of building a sense of belonging in relations with an individual and a group. It leads to difficulties with establishing and maintaining at least the minimum number of long-term, important interpersonal relations, which impedes the pursuit of developmental tasks. It is reflected by a lack of or insufficient level of participation in mainstream life of the peer group or local community (Muras, 2005; Leary, 2001; Jaskulska, Poleszak, 2015).

Source: Own elaboration

Table 83. Variables included in the measured problematic behaviours – information about the number of items and reliability (coefficient omega)

Name of the variable	Number of items	Reliability	Description of the dimension
Overall risky behaviour index	16	0.918	Aggregate index of frequency of engagement in problematic behaviours by young people – a syndrome of risky behaviours (cf. Jessor, Turbin, 2014). Using a single index is justified by substantive reasons – similarity of function and significance of risky behaviours during adolescence (Gaś, 2006; Jessor, Turbin, 2014), as well as psychometric ones – a single dimension in factor analysis and accuracy confirmed by studies (Donovan, Jessor, Costa, 1988; Kapardis et al., 2021; Poleszak, Porzak, Kata, 2019).
Problematic internet use	7	0.902	Behaviours associated with the internet or online apps that can indicate their excessive use or even addiction. They include difficulties in controlling the behaviour and impulses, which can manifest through: neglecting other needs, lack of time control, inability to plan online activity, increased frequency of use in order to achieve satisfaction, conflicts with others resulting from excessive use and problems with fulfilling different social roles (Poprawa, 2011; Young, 1998).
Risky online behaviour	5	0.896	The index of frequency of engaging in potentially dangerous behaviours online, which involves disclosing information about oneself, e.g. by publishing photographs, sharing data with strangers, making acquaintance with people the pupil has not seen before (Pyżalski et al., 2018).

Source: Own elaboration

The ‘Tailor-made prevention’ project is a measure supporting schools and institutions in the area of education and psychoprevention. It concerns the implementation of school diagnosis and evaluation and the translation of research results into recommendations and content for the educational and preventive programme.

The objective of the project is also to pilot an online diagnostic platform containing tools for examining the demand for educational and preventive measures.

Profilaktyka na miarę

EDUKACJA 3.0
STOWARZYSZENIE

The report on research conducted by Grzegorz Kata, PhD and Wiesław Poleszak, PhD was a fascinating read. An incredibly valuable study based on empirical research, this publication can be a precious source of knowledge for teachers, educators or psychologists working in educational institutions. The obtained results verify certain intuitive assumptions, which have not been confirmed. Developing prevention measures based on the results of academic research considerably improves their quality and effectiveness. Such results can be found in the report by Grzegorz Kata and Wiesław Poleszak, who have decided to scrutinise the issue of prevention in Polish schools. Their studies uncover alarming trends in young people's behaviour as well as provide knowledge on factors that can counter these adverse developments. This publication deserves to be widely distributed among experts who work with children and youth to equip them with empirical basis for constructing prevention education measures.

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