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THEORETICAL MODELS OF RESILIENCE AND RESILIENCE MEASUREMENT TOOLS IN CHILDREN AND YOUNG PEOPLE

Abstract

The definitional problems related to the concept of resilience show that it may be understood in a variety of ways (Masten, 2001; Richardson, 2002; Masten, Obradović, 2006; Kolar, 2011). Primarily, it is described as successful adaptation and successful development despite external risks. Researchers argue that individuals may be referred to as resilient only if they faced real external threats to their development (e.g. mental illness in the family, their low social and economic standing, violence) and yet were able to cope and develop properly (Luthar, 1999; Masten, 2001; Borucka, Ostaszewski, 2008; Kolar, 2011). The phenomenon of resilience may also be defined as a dynamic process whereby an interaction between risk and protection factors occurs, both on an individual and social level. In this case the researchers focus on mechanisms that modify risk factors. Yet another approach aims to define a set of personal traits that may be referred to as ego-resiliency (Block, 1980; Constantine et al., 1999). Every approach to the phenomenon of resilience offers its own theoretical models and measurement tools.

This paper focuses on resilience in developmental age. It aims to present selected resilience measurement scales and component skills in children and young people. The selected measurement tools are following: Kidscreen (Polish adaptation*:* Mazur, Małkowska-Szkutnik, Dzielska, Tabak, 2008), The Healthy Kids Survey (HKS, 1999), DECA (LeBuffe, Naglieri, 1998), DESSA (LeBuffe, Naglieri, Shapiro, 2006), and Resilience Scale SPP 18 (Ogińska-Bulik, Juczyński, 2011).

Key words: developmental age, resilience, measurement

The current state of knowledge in the field

"Resilience is a broad conceptual umbrella, covering many concepts related to positive patterns of adaptation in the context of adversity. The conceptual family of resilience encompasses a class of phenomena where the adaptation of a system has been threatened by experiences of disrupting or destroying the successful operations of the system" (Masten, Obradović, 2006, p. 14).

Definitional considerations

An important basis for a better understanding of individual resilience resources has been provided by longitudinal studies on children growing up in difficult circumstances and on factors that reduce risk in the process of children's development. These studies include: the longitudinal study carried out on the Hawaiian island of Kauai, USA (Werner, 2000), the study on Children at Risk in Mannheim, Germany (Laucht et al., 2000), and the study on vulnerability in Bielefeld, Germany (Andre/Loesel, 1997, 1998 by: Wustmann, 2004). The results of these studies have reshaped our current understanding of children's capacity to overcome adversity and deal with developmental risks. Researchers have started to consider not only potential confounders, but also those factors that are conducive to good health. Thus, a change in the approach to *mental health* has occurred, shifting the perspective from pathogenic to a salutogenic one. Attention has been paid not only to resilience deficits and deficiencies, but also to resources and competencies that help overcome strains and stresses as well as obstacles. In addition to risk factors, particular attention has been paid to protective factors (Antonovsky, 1995; Werner, 2000; Tugade, Fredrikson, Feldman Barrett, 2004).

A historical perspective on the concept of resilience and its development over time allows one to notice earlier studies dealing with essentially the same phenomenon, namely a phenomenon of good health in spite of being exposed to prolonged and severe stress. Researchers tried to explain it by means of personality constructs, such as resistance or hardiness proposed by Kobasa (1979) and a sense of coherence (SOC) proposed by Antonovsky (1979) (Zwolinski, 2011).

Resilience is considered to be an important feature of personality, conducive to good health and a "key to it" and, as such, may also be regarded as a "meta-source" of special regulatory power, influencing the activation of other resources needed in the process of coping with life events (Ogińska-Bulik, Juczyński, 2011).

The analysis of the ways in which resilience has been conceptualized and operationalised in the field of human development allows one to present four major branches of research on children and adolescents.

Development in the field – theory and research

1. The first and pioneering branch of research dates back to the 1970s. It focusses on the psychopathology of children and adolescents and seeks causes of major mental disorders in children and adolescents (Garmezy, 1971; Murphy, 1974; Rutter, 1979). This branch of research draws attention to children that develop well despite their negative genetic endowment or hostile environment. First reports of this kind have shed light on children resilient to injury and with extraordinary qualities (Masten, 2001). Thus, the question have arisen about the correlates and determinants for a successful adaptation. The researchers have also described a number of internal assets of children and young people and protective factors conducive to coping in spite of adversity, living in difficult conditions or experiencing a trauma.

The researchers assume that an individual can be referred to as resilient if their normal development has been put at risk (e.g. because of the mental illness of their parent, low social and economic status of their family or domestic violence) and yet they have been able to cope with the situation and develop successfully.

The researchers have also found out that numerous risk factors tend to coincide in children's life. In addition to potential risks and threats, internal assets have also been highlighted and it has been established that the higher is their level, the better results children and adolescents achieve in terms of positive adaptation (Luthar, 1999; Masten, 2001; Borucka, Ostaszewski, 2008; Kolar, 2011). This branch of research also studies the criteria according to which the process of adaptation can be described as successful or satisfactory. One such criterion helps to assess the process of completing developmental tasks as it indicates whether children develop in compliance with cultural expectations typical of their age or whether they learn competencies they are expected to acquire. Yet another perspective on the criteria for successful adaptation highlights the non-occurrence of psychopathological behavior as well as low levels of distress. The outcome of successful adaptation would thus manifest itself as mental health, social competence and the ability to take action (Olsson et al., 2003, as cited [In:] Kolar, 2011).

2. The second branch of research offers a slightly different understanding of resilience, thus describing it as a dynamic process, whereby an interaction between risk factors and both external and internal protective factors takes place. This branch of research pays particular attention to mechanisms that may influence and modify risk factors. The analysis of its results demonstrates that resilience is contextual and prone to change, which in turn provides an argument against reducing this phenomenon to merely a repeated way in which individuals respond to risk factors (Masten, 2001; Olsson et al., 2003; Coleman, Hagell, 2007; as cited [In:] Kolar, 2011).

Research on resilience as a process treats it as an ability that develops over time as a result of interaction between an individual and their environment. The analysed aspects of this interaction include children's temperament levels and intelligence quotient, mother-child relationship, the quality of parenting and home environment, symptoms of depressive disorders in the family, socio-economic status, traumatic family events and family support (England et al., 1993, as cited [In:] Kolar, 2011). Projects carried out according to these criteria are primarily concerned with response to enduring stressors.

3. The third branch of research puts emphasis on the application of knowledge in the field of resilience. Prevention, intervention and creating a protective system are thus regarded as activities that play a particularly important role in instilling resilience in children and adolescents living in conditions detrimental to their normal development. Projects carried out by these researchers have shown that external and internal assets can make a significant contribution to the development of resilience (Liebenberg, Unger, 2009; as cited [In:] Kolar, 2011). Research according to these guidelines has been conducted in Poland, too, by Joanna Mazur from the Institute of Mother and Child and the team of researchers under guidance of Krzysztof Ostaszewski from the Institute of Psychiatry and Neurology in Warsaw.

4. Developed at the conference on Resilience in Children in 2006, the fourth branch of research stems from the other three and primarily aims to integrate all the fields of research on resilience in children through multilevel analyses as well as interdisciplinary and cross-generic approach. This approach calls for co-operation and exchange between various fields of research, including genetics, neuroscience and behavioral biology. The fourth branch of research on resilience gives hope for a better and more thorough understanding of processes and multilevel relations involved in resilience (Masten, 2006; Kolar, 2011).

Figure 1 summarizes theoretical assumptions in various resilience research.

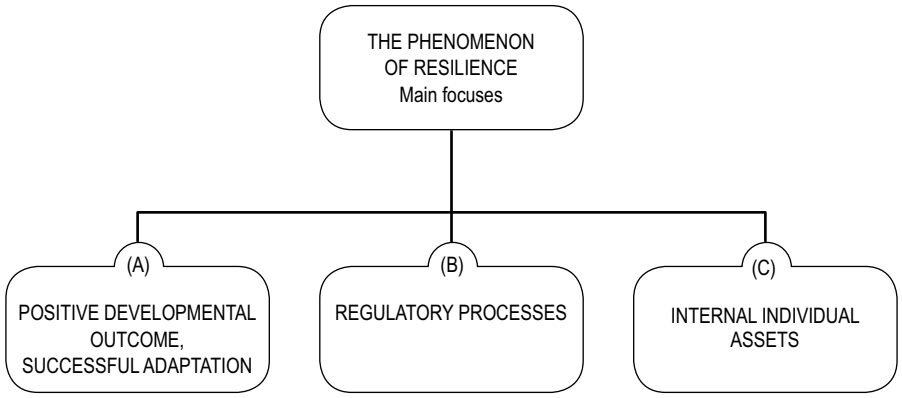

Figure 1. Theoretical models of resilience (on Masten, 2006; Kolar, 2011)

Research designs and examples of measurement tools

The respective objects of study allow one to identify two models of research on resilience in children:

The first model is a variable-focused one. The variables analyzed by this branch of research include: the socioeconomic status (SES) (McLoyd, 1998; Luthar, 1991, 2000), parenting quality (Malmberg, Flouri, 2011) parent-child relationship (McCubbin, 1993; Masten, 2001), measurable genetic polymorphism (Greenberg et al., 2007 in Kolar, 2011) and intellectual functioning (Masten, Obradović, 2006). The results for these variables have been achieved in the areas such as results at school, social and antisocial behavior, peer acceptance or psychopathological behavior (Luthar, 1991; Masten, 2001; Masten, Obradović, 2006).

The second approach is a person-focused one. At first, this branch of research provides individual case studies of children that have overcome a trauma or coped with adverse conditions (e.g. losing a parent in early childhood). Then it offers multiple case studies that allow one to identify recurring patterns in the development of children with similar life experiences (e.g. studies on adopted Romanian children living in orphanages prior to their adoption) (Masten, O'Connor, 1989; Ames, 1997). The person-focused approach adheres to the assumptions of classical longitudinal methodology, used in such studies as The Kauai Study by Werner and Smith as well as The Rochester Resilience Study by Cowen, Wyman et al. (Werner, Smith, 1992; Wyman et al., 1999).

The list of tools for measuring competency indicative of mental health in children and adolescents have been provided by Darlene Kordich Hall (2010). This list includes 38 different tools that help to measure competences connected with resilience. Hardiness level in children can be recognized by the Psychological Hardiness Scale (PHS) (Younkin, Betz, 1996) for adolescents and adults. Children's strengths can be in turn measured by the Strengths and Difficulties Questionnaire for children from 3 to 18 years of age (SDQ) (Goodman, 1997) or the Emotional and Behavioral Development Scale for children aged 5 to 16 (EBDS) (Riding, Rayner, Morris et al., 2002). Protective factors and risk factors in adolescents are, for example, measured using the Rochester Evaluation of Asset Development for Youth (READY) (Klein et al., 2006).

Research on resilience in children and adolescents takes advantage of tools such as observation scales, completed by parents, carers and teachers, including the DESSA, namely the Devereux Student Strengths Assessment (LeBuffe, Naglieri, Shapiro, 2006) or self-reporting methods designed for older students such as the Child, Youth Resilience Measure (CYRM)) for students aged from 12 to 23 (Ungar, Leibenberg, 2009).

Theoretical framework and measurement example

Resilience as a positive developmental outcome

„Resilience should to be seen as an acquired, gradually internalized set of attributes that enable a person to adapt to life's difficult circumstances" (Alvord, Grados, 2005, p. 244).

The first theoretical proposal is connected with variable-focused studies of resilience. Figure 3 shows some kind of main effects for an assets variable, risk-adversity variable, along with the bipolar predictor. It has been found out that not only risks and internal assets, but also bipolar predictors have also been highlighted. All these groups of factors influence results, which children and adolescents achieve in terms of positive adaptation. Desirable outcome in children includes external adaptation criteria (academic achievements) and internal adaptation criteria (psychological well-being, absence of psychopathology) (Luthar, 1999; Masten, 2001).

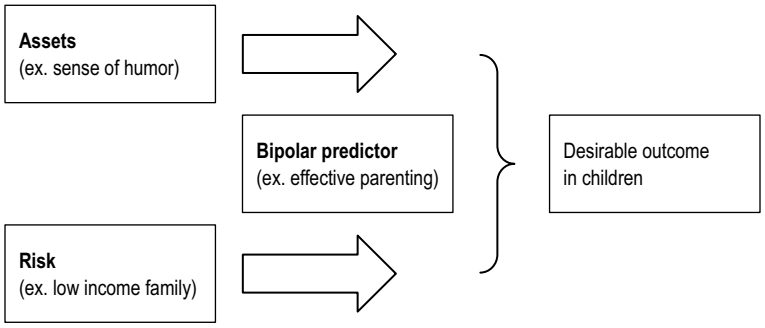

Figure 2. Resilience as outcome (on Masten, 2001)

The Kidscreen Questionnaire can be given as a measurement tool based on this theoretical framework.

The Kidscreen Project was implemented in 13 European countries including Poland, during the years 2003–2004, within the Fifth Framework Programme (research related to Health Related Quality of Life). Six questionnaires were developed for studying the health related quality of life in children and adolescents aged 8–18, including a full, intermediate and short version, each with an option for a child and for a parent or caregiver responding on behalf of the child. At the end of 2006 an international manual was published in English and 2008 in Polish (Polish adaptation by Mazur, Małkowska-Szkutnik, Dzielska and Tabak). On the basis of Polish data, the structure and psychometric properties of the Kidscreen-52 Questionnaire was described (child version), and a comparison was made between the answers to the questions put in the full scale by children

and parents. The quality of life is measured in a a full (52 items), intermediate (27 items) and short (10 items) version in 10 following fields.

Table 1. Kidscreen Questionnaire (after Mazur, Małkowska-Szkutnik, Dzielska and Tabak, 2008)

Questionnaire instruction: *Thinking about last week answer the questions:*

Individual development	Context of development
1. Physical health *Were you full of energy?*	6. Parent-child relation *Did your parents understand you?*
2. Mental health *Did you have a good time?*	7. Socio-economic status *Did you have enough money for your needs and pleasures?*
3. Emotional wellbeing *Did you feel lonely?*	8. Peers and social support *Did you spend time with your friends?*
4. Self-perception *Did you worry about your appearance?*	9. School *Were you satisfied with your school?*
5. Independence *Could you decide about your free time?*	10. Bullying *Did somebody ridicule you?*

The instrument assesses either the frequency of behavior/feelings or intensity of an attitude using a five-point Likert scale (1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always) The score for each dimension was transformed to a 0 to 100 point scale with higher scores indicate better HRQoL.

The Kidscreen instruments are available in child and adolescent as well as parent versions and have been translated and adapted for use in several languages. A score can be calculated and t-values and percentages will be available for each country stratified by age and gender.

The aims of the questionnaire is a diagnose of deterioration of a child's wellbeing as well as an identification of social and behavioural determinants of health. The practical purpose was to create a base for early intervention.

Resilience as a process

Research on resilience as a process treats it as an ability that develops over time as a result of interaction between an individual and his/her environment. The model developed by Constantine et al. demonstrates the way resilience in children is being shaped by certain external conditions. The following overview of children's resilience assets has been provided in The Healthy Kids Resilience Assessment (1999).

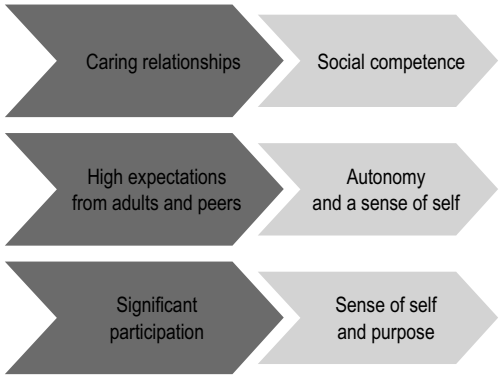

Figure 3. External and internal resources (as cited in Constantine et al., 1999)

These assets include social competence, defined as a capacity for effective communication, cooperation, empathy, responsibility and flexibility in social situations. An important role in this respect is played by caring and supportive relationships, that is, relationships with people who shape and foster the healthy development and well-being of a child. Thus, the quality of relationships within a family or an institution of early education proves to have a significant impact on the formation of children's social competence.

The next group of internal resources includes autonomy and a sense of self, defined as a sense of identity, internal power, self-efficacy and self-awareness. The external factors that influence the formation of this resource are high expectations from parents or peers. This means that if others believe that a child has the capacity to meet certain challenges, this can actually foster the development of his or her internal power and self-esteem.

The third group of internal resources comprises a sense of meaning and purpose, defined as an optimistic belief that one's life is coherent, purposeful and meaningful. A significant impact on the formation of this internal resource is made by significant and active participation, or participation in relevant, engaging and responsible activities. Stimulating factors in this respect are the chance to take responsibility and making one's own contribution to specific projects and initiatives (Constantine et al., 1999).

The theoretical model presented above combines two major areas that have been studied in various configurations in connection to resilience. It highlights the importance of external resources for the formation of resilience in children and provides a thorough description of the interdependence between internal and external resources vital for resilience.

The Healthy Kids Survey (HKS) is one of the few large-scale surveys to assess both risk and resilience. The HKS is a comprehensive student self-report tool connected with students' health. The survey's Resilience and

Youth Development Module (RYDM) is based on the premise that youth who experience high levels of environmental assets in three areas – high expectations from adults, caring relationships with adults, and opportunities for meaningful participation – will develop the resilience traits, the connection to school, and motivation to learn that lead to positive academic, social, and health outcomes (Constantine, Benard, Diaz, 1999).

In California an average of about 600,000 students take the Healthy Kids Survey and a part of the resilience and youth development module every year. The tool is mandated (since fall 2003) by the California Department of Education for compliance with No Child Left Behind and state Tobacco Use Prevention and Education (TUPE) grants.

Table 3 presents The Healthy Kids Survey in the elementary school version. External (environmental) resilience assets are divided into three groups of factors: school, home and peers. Internal resilience assets involve three factors: empathy, problem solving, goals and aspirations. There is one sample question presented for each field.

Table 3. Elementary school resilience and youth development module items by construct (after Hanson, Kim, 2007)

Environmental resilience assets, school assets	**Sample Item**
Caring relationships at school	Do the teachers and other grown-ups at school care about you?
High expectations at school	Do the teachers and other grown-ups at school believe that you can do a good job?
Meaningful participation at school	Do you do things to be helpful at school?
Environmental resilience assets, home assets	
Caring relationships at home	Does a parent or some other grown-up at home listen to you when you have something to say?
High expectations at home	Does a parent or some other grown-up at home want you to do your best?
Meaningful participation at home	Do you help out at home?
Environmental resilience assets, peer assets	
High expectations with peers	Do your best friends get into trouble?
Internal resilience assets	
Empathy	Do you try to understand how other people feel?
Problem-solving	Do you know where to go to get help with a problem?
Goals and aspirations	Do you have goals and plans for the future?

Possible responses include (1) no, never, (2) yes, some of the time, (3) yes, most of the time, (4) yes, all of the time.

The main aim of The Healthy Kids Survey is monitoring the school environment and student health risks. It was designed as an epidemiological surveillance tool to track aggregate levels of health risk and resilience.

The Healthy Kids Survey version for secondary school involves more constructs connected with internal resilience assests as: cooperation and communication, self-efficacy, self-awareness. Within Environmental resilience assets there is one additional construct namely community assets (with subscales caring relationship in community, high expectations in community, meaningful participation in community).

Both surveys (for elementary and secondary school) ought to answer the question how to measure resilient traits in children and young people and how to determine the role of the school environmental in promoting these traits (Constantine, Benard, Diaz, 1999; Hanson, Kim, 2007).

Resilience as an individual resource

"Resilience can be understood as an individual abillity crucial in coping and adaptation processes" (Ogińska-Bulik, Juczyński, 2011, p. 14).

The presented theoretical proposal is connected with person-focused studies of resilience. This approach attempts to grasp the configural patterns of adaptation like classification system for mental disorder and seeks to identify groups with good versus poor coping and adaptation abilities (Masten, 2001; Ogińska-Bulik, Juczyński, 2011; Kolar, 2011). Individual assets treated as protective factors have been researched in the ego-resiliency wave (the term was firstly proposed by Block in his non-published doctorthesis in 1950). Ego-resiliency means a general individual characteristics, abillity to modulate of ego control in order to maintain or strengthen homeostase in the system (Zwoliński, 2011). Within individual assets the following are listed: temperamental and cognitive factors, selfesteem, coping strategies, life approach, sense of meaning and purpose, factors important for social acceptation (Pilecka, Fryt, 2011).

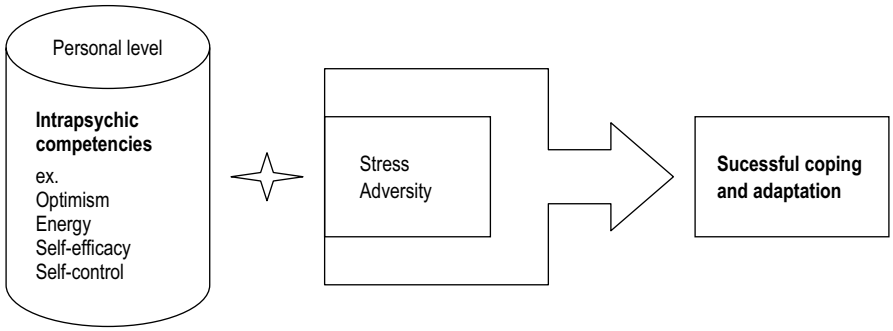

Figure 4. Model of individual assets

The first group of tools are observation scales completed by parents, carers and teachers, including the DECA, namely the Devereux Early Childhood Assessment (LeBuffe, Naglieri, 1998) or the DESSA, namely the Devereux Student Strengths Assessment (LeBuffe, Naglieri, Shapiro, 2006).

The DECA Assessment

The Devereux Early Childhood Assessment for Infants and Toddlers (LeBuffe, Naglieri, 1998) describes a child in standard version (37 items) or in the clinical version (62 items) in 4 dimentions as:

- Initiative

(ability to use independent thought and action to meet individual needs)

Self-control

- (ability to experience a range of feelings and express them in the social acceptable way)
- Attachment

(mutual, strong, long-lasting relationship between a child and significant adult)

- Problem behaviour

Two types of standard scores are provided for each child: percentiles and T-scores.

Children's results in protective factors (initiative, self-control and attachment) that fall one or more standard deviations above the mean are treated as "strengths" (T score – 60 or more. As "concerns" are classified children with results one or more standard deviations below the mean (T score – 40 or less). Children with results within one standard deviation (T score – 41–59) are called "typical."

In the DECA questionnaires parents and preschool teachers assess 5-year-old and younger children. The instrument was used very broadly in the HEAD START Project in the USA with a purpose to equalize school chance in children with disadvantaged life circumstances (Kordich Hall, 2010).

The questionnaire is involved in the DECA Program. The goals of this program are to identify young children's protective factors at home and school and to support parents and teachers to help each child strengthen his/her resilience. The third important purpose is to screen for children who may be exhibiting behavioral concerns before they develop behavioral disorders. Philosophy of the DECa Program underlines: "all children need resilience, not just children who are at-risk. Sometimes a tragedy, a natural disaster, a death in the family, a divorce, an illness, etc. comes up unexpectedly, which is when a child really needs to have strong protective factors and coping skills already in place" (LeBuffe, Naglieri, 1998, p. 14).

The DESSA Assessment

The Devereux Student Strengths Assessment (LeBuffe, Naglieri, Shapiro, 2006) diagnoses resilience in 8 sub-scales (72 items) by assessing socio-emotional key competencies in children in the age 5–14. The DESSa is a standardized, norm-referenced behaviour rating scale. The assessment can be completed by parents, teachers, school staff, social servies. For each of the items, the rater is asked to indicate on five-point-scale how often the child engaged in each activity over the past 4 weeks (teachers and both parents).

The skills connected with resilience resources are:

- self-awareness;
- social awareness;
- self-management;
- goal-directed behaviour;
- interpersonal skills;
- personal responsibility;
- decision making;
- and optimistic thinking.

Results show that the DESSA can differentiate between students with and without social, emotional and bahavioural problems. "The scales on the DESSA can be considered protective factors within a risk and resilience theoretical framework. High scores on DESSA scales were associated with significantly fewer behavioral problems for students at both high and average levels of risk" (Kordich Hall, 2010, p. 3). Both questionnaires (DECA and DESSA) are used not only for diagnostic purposes. They are involved in the protective and preventive programs. Results can be summarized for individual child and also for all children in the classroom. They have been developed as a part of a comprehensive program to foster the healthy social and emotional development of children.

The second group of measurement instruments are self reports. Young people answer the questions and describe their individual reactions and feelings.

Resilience Scale for Children and Youth-SPP 18

As an example Resilience Scale for Children and Youth-SPP 18 (Ogińska-Bulik, Juczyński, 2011) can be given. The test based on self-reporting methodology is designed for young people in the age of 12–18. The SPP 18 includes 18 items in 4 issues:

- Optimistic approach and energy;
- Perseverance and determination in action;
- Sense of humor and openness to new experiences;
- Personal competencies and tolerance of negative affect.

Table 2. Factors and sample items in the Resilience Scale for Children and Youth (Ogińska-Bulik, Juczyński, 2011)

Issue	Sample items
1. Optimistic approach and energy	*Despite adversities and difficulties I find life exciting*
2. Perseverance and determination in action	*I usually go straight to the purpose*
3. Sense of humor and openness to new experiences	*In everything I do I try to find positives*
4. Personal competencies and tolerance of negative affect	*I have enough energy to do what I have to do*

Possible answers are: 0 – definitely not, 1 – rather not, 2 – hard to tell, 3 – rather yes, 4 – definitely yes. Higher score means higher resilience. Sten scale describes score 1–4 as low resilience level, score 5–6 as average and 7–10 as high resilience level.

In the Polish research group (N = 332) there were found following results: a low resilience level – 31,3%, an average resilience level – 37,9% and high resilience level – 33,8%. (Ogińska-Bulik, Juczyński, 2011).

The authors propose using the scale for prediction of possible child's or teenager's reaction to critical life event, chronic disease in the family. The application of SPP 18 can have a positive influence on adaptation and help to monitor recovery processes.

Why it is important to identify resilience

Resilience is not an inborn personal quality and it develops over time. Early childhood plays a particularly important role in the development of resilience. Research on mental health shows that resilience is a dynamic quality that children develop in interaction with persons from their closest environment and through positive experience they derive as they solve problems and overcome difficulties. As regards positive attitude to both overcoming crises and obstacles and undertaking developmental tasks, the process of climbing from one educational level to the other, which in itself is conducive to further development, remains of critical importance in this respect (e.g. starting preschool or school education) (Benson, Leffert, Scales, Blyth, 1998; Froehlich-Gildhoff, Doerner, Roennau, 2007).

Developmental tasks that have been already completed form a basis for accomplishing further tasks. In the process, children acquire skills and competencies necessary for normal development. Effective coping implies further development and personal growth. Thus, children learn to treat changes and stressful situations as a challenge to meet (Wustmann, 2004; Petermann et al., 2004).

Enhancing resilience in children can be realized in the proactive approach, where children, parents and teachers are involved in many common actions (Alvord, Grados, 2005).

By recognizing the component competencies of what is known as life skills one can form a basis for introducing activities which stimulate the development of one's individual resources and which may also be used as programs that develop these competencies in preschool children. Such programs treat children as active achievers and co-creators of their own lives.

Thus, it can be defined as an attempt to instil resilience in children and adolescents through prevention, intervention and creating a protective system on the basis of the analysis of the current situation as well as current needs (as-is analysis). An important role in this respect may be played by institutions of preschool and early education which may help foster resilience resources in children. (Werner, Smith, 1992; Wyman et al., 1999). Empowering children and young people is the best way to give them some kind "key for health" (Froehlich-Gildhoff, Doerner, Roennau, 2007; Ogińska-Bulik, Juczyński, 2011).

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