



Resiliency Scales – tool adaptation and a preliminary analysis of psychometric properties¹

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Abstract: The presented study aimed to adapt the Resiliency Scales – A Profile of Personal Strengths in a group of 357 students (178 adolescents with mild intellectual disability and 179 students within intellectual norm) and to conduct a preliminary analysis of its psychometric properties. In accordance with the theoretical background of the completed analyses – resilience theory – the respondents taking part in the study have experienced various challenges during their life. The Resiliency Scales – A Profile of Personal Strengths intends to measure such personality traits of an individual that enable them to better overcome difficulties and adversity (Prince-Embury, 2006). The first stage of the psychometric verification was to study descriptive statistics and distribution. The next stage was reliability analysis and confirmation procedure for factor analysis. The last phase of the adaptation was to standardize the results and prepare norms. As a result of the performed analyses, it can be concluded that Resiliency Scales – A Profile of Personal Strengths is characterized by satisfactory psychometric properties.

Keywords: adolescence, instrument adaptation, mild intellectual disability, psychological resilience

Introduction

The concept of resilience has a key meaning for therapeutical practice, preventive care, and social rehabilitation. However, it should be preceded by a reliable and accurate diagnosis of personality correlates that correspond to the concept of resilience. These constructs must be identified for an individual who is to become the recipient of the strategies. Over the years, both theorists and researches have strived to develop tools which will enable measurement of personality features that contribute to coping with adversities in the environment and socially challenging situations (Urban, 2012, p. 154). The Resiliency Scales: A Profile of Personal Strengths by Sandra Prince-Embury might be an example of such a tool.

1. Resiliency – the theoretical aspect

The concept of resilience has been present in social and medical sciences for over 50 years (Talaga, Sikorska, Jawor, 2018). It appeared in response to researchers' interest in proper development of children and adolescents who grow up in unfavourable life conditions (Sikorska, 2017). The word *resilience* comes from Latin *resilire*, and it means returning to the beginnings, regaining balance, bouncing back.

Psychological resilience determines a range of behaviours and attitudes of an individual. It might constitute a significant factor in goal achievement (Ryś, Trzęsowska-Greszta, 2018). Moreover, it is considered to have a buffering and preventive effect in difficult situations experienced by an individual (Franczok- Kuczmowska, 2022). Emmy Werner has conducted pioneering research on the phenomenon of resilience. This was longitudinal research in which the

¹ Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Wojc.pdf

author analysed life conditions of pregnant women and subsequently (after giving birth) she analysed functioning of their children (Kwiatkowski, 2016). The research was carried out on the Hawaiian island of Kauai and involved 698 children born in 1955 (about 1/3 of them grew up in difficult conditions). Along with a team of specialists (paediatricians, psychiatrists, psychologists, and social workers), Werner observed their life for 32 years (after: Borucka, Ostaszewski, 2008). As a result of this study, it was possible to distinguish specific protective factors which fostered children's positive adaptation despite exposure to significant risk factors, such as: poverty, conflicts, unfavourable family climate, parental mental disorders, and parents' low level of education (Werner, 1994).

Knowing about Werner's pioneering research we can conclude that the concept of resilience stems from observation of children and adolescents who grow up in adverse conditions. This is why definitions of resilience proposed over the years referred mainly to periods of life such as: childhood, adolescence, and early adulthood. Additionally, they put emphasis on proper functioning of children and adolescents, appropriate achievement of developmental tasks and competence despite facing adversity of different kinds (Luthar, Cicchetti, Becker, 2000). In accordance with this approach, resilience can be defined after Werner both as the individual's ability to cope with stress and an above-average (for their age and life circumstances) level of psychological strength of a person (O'Donnell, Schwab-Stone, Mueyee, 2002).

A review of the literature on the subject allows us to conclude that apart of the approach described above, the term *resilience* can be understood more broadly. In this case, it is defined as a dynamic process which shows a person's relatively good adaptation despite adversity, hazards, or traumatic obstacles. This process involves the interaction of protective factors and risk factors. It is also worth paying attention to understanding resilience in terms of a certain development process. Resilience is then meant to serve children and adolescents to gain competences, despite adversity, of using both internal and external resources to achieve positive adaptation (Borucka, Ostaszewski, 2008). We can, therefore, say that the term resilience covers different groups of phenomena, and the most common ones are:

- “Functioning at a significantly better level than could be supposed considering risk factors,
- maintaining high level of functioning despite stressful experiences,
- regaining a normal level of functioning after traumatic experiences” (Mudrecka, 2013, p. 51-52).

Notably, a part of researchers uses the term resilience in reference to personality traits – *ego-resiliency*. This term was used for the first time by Jack Block and Jeanne H. Block at the beginning of 1980. It referred to “a set of features which reflect daring in dealing with stress or problems, as well as strength of character and flexibility in adapting to different life circumstances” (Borucka, Ostaszewski, 2008, p. 2). In this view, *ego resiliency* is an individual trait that can exist without the presence of difficult life events (ibidem). It is characterized by resourcefulness, flexibility, and endurance in reaction to changes that take place in the environment (Luthar et al. 2000).

2. A psychometric analysis of Resiliency Scales – a Profile of Personal Strengths

The Resiliency Scales – A Profile Personal Strengths is a tool developed by Sandra Prince-Embury. It allows to identify these personal traits which enable adolescents more effective coping in the face of different adverse situations (Prince-Embury, 2006). Personal dimensions that have been included in the scale refer to the concept of ego-resilience as proposed by Jeanie and Jack Block. Ego-resilience includes resourcefulness, strength of character and resilience in the person's functioning, which is reflected in their reactions to certain events in the environment (Urban, 2012). The tool includes three scales (Opora, 2016, p. 254):

- a. Sense of Mastery Scale, which includes the following dimensions:
 - optimism,
 - self-efficacy,
 - adaptation skills,

- b. Sense of Relatedness Scale, which includes:
 - trust,
 - access to support,
 - social comfort,
 - tolerance of difference
- c. Emotional Reactivity Scale, with dimensions:
 - sensitivity,
 - recovery,
 - impairment in emotional reactivity.

The Sense of Mastery Scale consists of 20 statements. The respondents give their answers on a five-point scale: 0 – “never”, 1 – “rarely”, 2 – “sometimes”, 3 – “often”, 4 – “nearly always” (Opora, 2016). The scale includes both the individual’s belief that he or she can effectively and efficiently influence the environment, as well as the belief in the effectiveness of one’s own actions in the face of an emerging difficulty or obstacle. Low results on this scale along with high results on other scales might indicate the individual’s increased self-esteem and protective escape (Urban, 2012, p. 155-156).

The Sense of Relatedness Scale includes 24 statements. The respondents give answers on a five-point scale: 0 – “never”, 1 – “rarely”, 2 – “sometimes”, 3 – “often”, 4 – “nearly always” (Opora, 2016). The scale makes it possible to examine a person’s experiences in relations with other people, which is expressed through the comfort of trust in others, as well as access to support. These aspects are important in overcoming adversities. One of the dimensions in the scale – trust – is related to expectation of positive actions from people that the person interacts with or forms social systems with. Access to support, in turn, depends on trust. Social comfort is related to a person’s temper. We can describe it as “the warmth of being with others”. The last dimension listed above, tolerance of difference, refers to recognizing the right of other people to have and publicly express their own opinions (Urban, 2012, p. 156- 157).

The Emotional Reactivity Scale consist of 20 statements. The respondents give answers on a five-point scale: 0 – “never”, 1 – “rarely”, 2 – “sometimes”, 3 – “often”, 4 – “nearly always”. The scale includes three dimensions, which are interrelated: sensitivity, recovery, and impairment in emotional reactivity (Opora,

2016). The scale is based on the assumption that “regulation is mediated by intra- and extra organic factors through which emotional arousal is redirected, controlled, modulated and modified, and thus the individual can adapt to a challenging situation” (Urban, 2012, p. 158). The dimension identified in the scale – sensitivity – refers to the speed and intensity of emotional reactions, as well as predisposition to evoke emotions. The ability to recover, on the other hand, refers to an individual’s ability to return quickly to normal functioning after a strong emotional reaction. The last dimension – impairment in emotional reactivity – is visible in deteriorated functioning because of emotional arousal. Conversely to Sense of mastery scale and the Relatedness scale, low scores obtained on the emotional reactivity scale signify resilience—the lack of a person’s reactions in response to weak stimuli. High scores, on the other hand, are a sign of oversensitivity (low threshold of sensitivity) (Urban, 2012, p. 156).

The Resiliency Scale – A Profile of Personal Strengths might be applied both in clinical practice and in research aimed at identifying personality traits that make up the phenomenon of resilience (Urban, 2012). The Cronbach alpha reliability coefficients for the Resiliency Scales – A Profile of Personal Strengths range between 0.92-0.94 (Prince-Embury, 2006). It should be noted the adaptation was based on the translation of the scale included in the book “*Ewolucja niedostosowania społecznego jako rezultat zmian w zakresie odporności psychicznej i zniekształceń poznawczych*” by Robert Opora (2016).

3. Psychometric properties of the questionnaire in own research

3.1. The method

The aim of the performed analyses was to present the process of adaptation of the Resiliency Scale – A Profile of Personal Strengths in a group of adolescents with a mild intellectual disability and among students with the intellectual norm. The first stage of analyses was to verify descriptive statistics and distribution. Then, a reliability analysis and confirmatory factor analysis procedure were performed. The last stage

was standardization of the results and preparation of the norms. Statistical analyses were performed with the use of IBM SPSS Statistics 25 and AMOS.

3.2. Respondents

A group of 357 adolescents took part in the study (178 students with a mild intellectual disability and 179 within the intellectual norm). Due to the diverse etiology of mild intellectual disability, people with multiple disabilities and those diagnosed with a genetic syndrome were excluded from the study. It should also be noted that, as the theoretical basis of this research was the concept of resilience, the analyzes included the results of respondents who had experienced various adversities during their lives. To be exact, situations considered adverse were among others: loss of contact with a significant person or their death, serious illness of one of the parents/caretakers or the student him- or herself, divorce or separation of parents/caregivers, disability, growing up in an environment with an increased risk of pathology. Prior to the onset of the study, a written consent to participate in the project was obtained (both from the respondents and from their parents/legal caregivers).

Students aged 12 to 19 took part in the research. To specify, the average age of the respondents from the group of adolescents with mild intellectual disabilities was 16 years. The average age among adolescents within the intellectual norm was 17 years. Students with a mild intellectual disability attended special school complexes (45.5%) and special education centres (54.5%). The adolescents within the intellectual norm attended primary schools (23.5%), general education secondary schools (48.6%) and secondary technical schools (27.9%). The respondents from both groups attended schools in the Malopolskie region.

To characterize the sample group more fully we should also add information about the professional situation of the parents/ caregivers of the students. In the group of adolescents with a mild intellectual disability, 57.9% of students declared that both parents were employed. In comparison, among teenagers within the intellectual norm, 74.9% adolescents declared that their parents were working. Moreover, in the group of respondents with a mild intellectual ability, 52.2% respondents were men. In the group of adolescents within the intellectual norm men made up 54.2%.

Table 1. Descriptive statistics with the Kolmogorov-Smirnov test for the Resiliency Scale divided into groups of adolescents within the intellectual norm and a mild intellectual disability.

		<i>n</i>	<i>M</i>	<i>Me</i>	<i>SD</i>	<i>Sk.</i>	<i>Kurt.</i>	<i>Min.</i>	<i>Max.</i>	<i>D</i>	<i>P</i>
Adolescents with an intellectual disability	Sense of Mastery	178	52,03	52	13,58	-0,39	0,72	6	80	0,06	0,200
	Sense of Relatedness	178	64,33	66	15,11	-0,58	0,43	15	96	0,06	0,084
	Emotional Reactivity	178	38,73	36	15,99	0,21	-0,55	0	76	0,07	0,021
Adolescents within the intellectual norm	Sense of Mastery	179	54,82	57	14,59	-0,82	0,48	8	80	0,07	0,022
	Sense of Relatedness	179	68,96	72	15,40	-0,96	0,42	22	94	0,12	0,000
	Emotional Reactivity	179	34,74	34	14,14	0,19	-0,52	8	70	0,05	0,200
The whole group	Sense of Mastery	357	53,43	54	14,14	-0,60	0,46	6	80	0,06	0,008
	Sense of Relatedness	357	66,65	69	15,41	-0,74	0,26	15	96	0,09	<0,001
	Emotional Reactivity	357	36,73	35	15,20	0,25	-0,47	0	76	0,06	0,004

Source: Own elaboration

4. Results

The Resiliency Scale – A Profile of Personal Strengths by Prince-Embury consists of three basic scales: Sense of Mastery Scale, Sense of Relatedness Scale, and Emotional Reactivity (Prince-Embury, 2006). The aim of this analysis was to verify psychometric properties in a group of adolescents between 12 and 19 years of age, within the intellectual norm and with a mild intellectual disability. As the first step, descriptive statistics and distribution were verified. The detailed data are presented in Table 1 and Figures 1-3.

The result of the Kolmogorov-Smirnov test turned out to be statistically significant for most of the variables, which means that their distribution deviated significantly from the normal distribution. However, it should be noted that skewness does not exceed the conventional absolute value of 1, which means that the distribution asymmetric to only a slight extent.

4.1. A reliability Analysis of Resiliency Scales

A reliability analysis of particular subscales in the sample group was carried out with Cronbach's alpha method and it is: 0.91 for the Sense of Mastery scale, 0.91 for the Sense of Relatedness Scale and 0.79 for the Emotional Reactivity Scale. Based on these analyses we can conclude that all subscales can be considered reliable. However, it should be noted that the obtained results were lower than in the original tool, where the results were respectively: 0.95; 0.95 and 0.94, with $n = 200$ (Prince -Embury, 2006).

4.2. Confirmatory factor analysis of the Resiliency Scales

At the next stage, a confirmatory factor analysis was performed. The factors were selected according to the original structure of the tool (Prince- Embury, 2006). The model tested in CFA was presented in Figure 4. The level of model fit was very good and it amounted to $CFI = 0.96$, $RMSEA = 0.07$. These properties are comparable to the ones obtained with the original scale ($GFI = 0.92$, $RMSEA = 0.05$) (Prince- Embury, 2006).

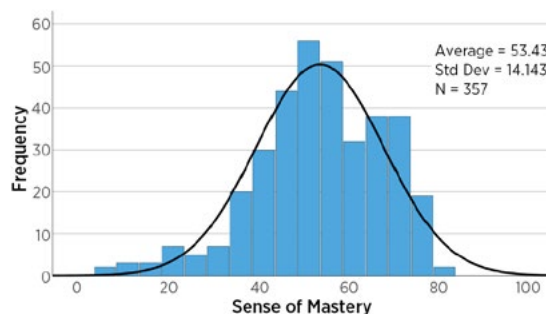


Figure 1. Distribution of results for the whole group in Sense of Mastery Scale in Resiliency Scales.

Source: Own elaboration

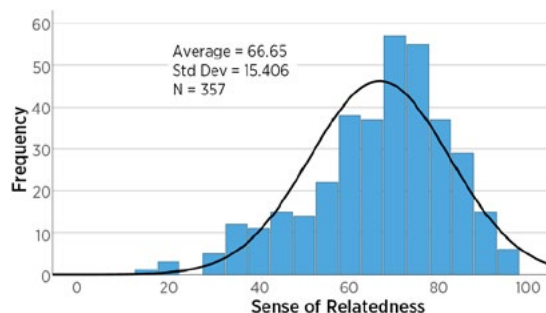


Figure 2. Distribution of results for the whole group in the Sense of Relatedness Scale in Resiliency Scales.

Source: Own elaboration

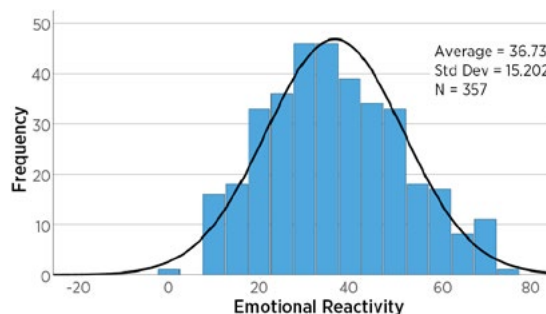


Figure 3. Distribution of results for the whole group in the Emotional Reactivity Scale in Resiliency Scales.

Source: Own elaboration.

The analyses above have shown that the tool is reliable and illustrates the studies construct at an adequate level in the sample group.

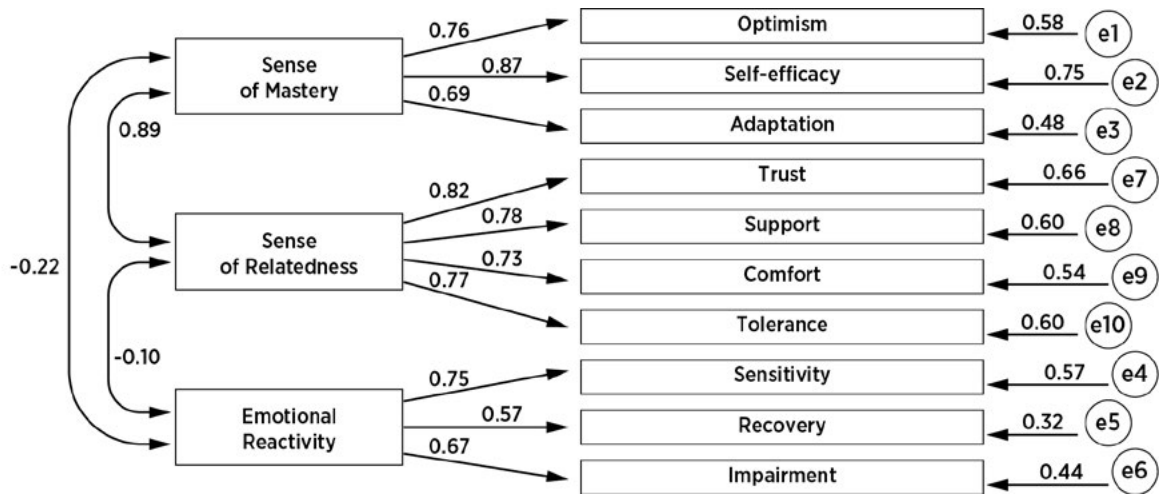


Figure 4. Confirmatory Factor Analysis model (n = 357) for the Resiliency Scales.

Source: Own elaboration.

Table 2. The norms for the Resiliency Scale for Adolescents within the intellectual norm and adolescents with a mild intellectual disability.

Adolescents with a mild intellectual disability – RS			Adolescents within the intellectual norm – RS			Ten	Interpretation
Sense of Mastery	Sense of Relatedness	Emotional Reactivity	Sense of Mastery	Sense of Relatedness	Emotional Reactivity		
<6						16	Very low
7	<15					17	
8-9	17		8			18	
10	18		9	22		19	
11	19					20	
12-13						21	
14						22	
15						23	
16				29		24	
17-18			18			25	
19-20	28	0	19-20	32		26	
21	29	1	21	33-34		27	
22-23	30-31	2-3	22-23	35		28	
24-25	31-32	4-5	24	36-37		29	
26	33-34	6-7	25-26	38		30	
27	35	8-9	27	39	8	31	
28	36-37	10	28	40-41	9	32	
29	38-39	12	29-30	42-43	10-11	33	
30	40	13	31-32	44	12	34	
31-32	41	14	33	45-46	13-14	35	Low
33	42-43	15-17	34	47-48	15	36	
35	44-45	18	35-37	49	16-17	37	
36	46	19-20	38	50-51	18	38	
37	47-48	21	39	52	19	39	

Adolescents with a mild intellectual disability – RS			Adolescents within the intellectual norm – RS			Ten	Interpre- tation
Sense of Mastery	Sense of Relatedness	Emotional Reactivity	Sense of Mastery	Sense of Relatedness	Emotional Reactivity		
38-39	49	22-23	40	53	20-21	40	Average
40	50-51	24-25	41-42	54-55	22	41	
41	52	26	43	56	23-24	42	
42-43	53-54	27-28	44-45	57-58	25	43	
44	55-56	29	46	59-60	26	44	
45	57	31	47-48	61-62	27-28	45	
46-47	58-59	32-33	49	63	29	46	
48	60	64	50-51	64-65	30-31	47	
49	61-62	35-36	52	66	32	48	
50-51	63	37	53-54	67-68	33-34	49	
52	64-65	38	55	69	35	50	
53-54	66	39-41	56-57	70-71	36	51	
55	67-68	42	58	72	37-38	52	
56	69	43	59	73-74	39	53	
57-58	70-71	44-45	60-61	75	40-41	54	
59	72	46-47	62	76-77	42	55	
60	73-74	48-49	63-64	78	43	56	
61-62	75	50	65	79-80	44-45	57	
63	76	51-52	66-67	81-82	46	58	
64	78	53	68	83	47-48	59	
65-66	79-80	54	69-70	84-85	49	60	
67	81	56-57	71	86	50	61	
68-69	82-83	58	72-73	87-88	51	62	
70	84	59	74	89	53	63	
71	85	61	75	90-91	54-55	64	
72	86-87	62	76-77	92	56	65	
73-74	88-89	63-65	78	93-94	57-58	66	
75	90	66	79-80	>95	59	67	
76-77	91-92	67-68	>81		60	68	
78	93	69			61	69	
79	94	70			62	70	
>80	95-96	71-72			63-64	71	
	>97	73-76			65-66	72	
		>77			67	73	
					68-69	74	
					>70	75	

Source: Own elaboration

4.3. Standardization of Resiliency Scales

In order to standardize the tool for the population of adolescents within the intellectual norm and with a mild intellectual disability norm ($n = 357$), the raw scores of Resiliency Scales were converted to a ten scale. This is a standard normalization scale with the largest range from 0 to 100. This scale was chosen based on the standardization of the original tool. The normalization results of the Resiliency Scale are presented in Table 2.

Conclusions

As a result of the analyses, it can be concluded that the Resiliency Scale – A Profile of Personal Strengths, is a tool with satisfactory psychometric

properties. We can therefore assume that it allows for a reliable and accurate measurement of such personality traits among adolescents (both in a group of individuals with a mild intellectual disability and among adolescents within the intellectual norm) which enable effective coping with different life adversities. However, due to the size of both groups of young people participating in the study, it seems necessary to carry out further research on the tool. Conducting analyses in a suitably larger groups of adolescents would allow us to clearly determine whether the Resiliency Scale – A Profile of Personal Strengths, can be used by psychologists and educators to plan specific and effective preventive interventions addressed to specific groups of adolescents.

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