

Certain predictors of coping with stress in adolescents

BACKGROUND

The purpose of the study was to search for variables that show a relationship with coping with stress as well as to search for the possibility of predicting a stress coping mechanism in the studied adolescents. Two questions were formulated in the study: Are mental resilience and communication with peers significant predictors of coping with stress in the studied group? To what extent will the analysed predictors explain individual strategies to cope with stress?

PARTICIPANTS AND PROCEDURE

The study involved three tools: the Resilience Measurement Scale (RMS-18), the Coping Inventory for Stressful Situations Questionnaire (CISS), and the Scale of Communication of Adolescents with Peers (SCAP). The study was carried out on a randomly selected group of 546 adolescents. Due to the pandemic conditions prevailing at that time, the online form of data collection was used. Study tools along with the record were placed on the LimeSurvey

platform, and then posted via Facebook on groups for adolescents, not only in secondary schools. Each subject could withdraw at any time without any negative consequences. The collected questionnaires are part of a larger empirical project.

RESULTS

The study results showed that open communication with peers as well as general resilience and the resilience factor optimistic attitude and energy had a positive relationship.

CONCLUSIONS

The general conclusion from the study is that mental resilience and openness in peer relationships are conducive to undertaking strategies of coping with stress in the studied adolescents.

KEY WORDS

adolescents; coping with stress; communication with peers

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BACKGROUND

With the growing social stress caused by the COVID-19 pandemic and with the ever-increasing burden placed on adolescents, e.g., by school expectations, the study results concerning mental resilience and communicating with peers may turn out to be useful in coping with stress among adolescents. Studies were planned not only to collect the results illustrating the interdependencies between the selected variables, but also to indicate the application of the obtained results as well.

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COMMUNICATION WITH PEERS

The intensification of peer relationships is important in the context of growing up, in which a discrepancy between the world of parents and peers can be noted (Napora, 2019). Emotional contacts with relatives are limited to the benefit of developing social contacts (Jędrzejko & Walancik, 2019). The feeling of being accepted by friends has a much wider influence on social functioning of adolescents than the influence of their parents. This results from the fact that adolescents get much closer to their peers and want to exchange and interact with them (Pawelec & Łukasiewicz, 2012). They seek the sense of belonging and community and, at the same time, need the individuality of their own group (Obuchowska, 2002). The acceptance and closeness of peers is of high importance in these processes, and adolescents may often give a lot to have it. When facing failures in this area, adolescents do not want to or are unable to reveal their problems and worries to their loved ones (Herbert, 2004). Contact with peers is for adolescents a social resource and is considered as available help in difficult and crisis situations (Grygiel & Humenny, 2015) as well as being the main source of social support (Stach-Hejusz, 2011). Communication is a means of satisfying mental needs of an individual (Napora, 2017; Oleszkowicz & Senejko, 2013), most of all such as success, belonging, acceptance and recognition, and role playing (Sęk, 2001). It is easier for adolescents to solve the problems of growing up with their friends than parents. Dependence of peers is a consequence of their willingness to obtain autonomy and freedom from their parents (Harris, 2000). It contributes to shaping the ability to receive and transfer experiences (Ryś, 2012). Relationships with peers teach an adolescent to be sensitive to the needs of others, and provide knowledge about them which results in a better understanding of oneself and others.

Communication is one of the most important development factors of an individual during their adolescence, as it is a form of mutual interaction. It is considered a process of information exchange by using symbols that take part in the communication

system. It is also important when the adolescent separates from the family (Barnes & Olson, 1985; Mendecka, 2003) and when the influence of the peer group increases. Openness in communication is the foundation of good relationships with others and bonds that enable understanding of others as well as being understood by others (Napora & Pękala, 2014). Adolescents think of communication with peers as a source of solving their problems and spend much more time with other adolescents than with their parents (Smahel et al., 2012). They are involved in sharing their feelings, beliefs, and ideas (Tomé et al., 2012), thus building intimacy in peer relationships. Previous studies on communication of adolescents with peers have proven that openness has a positive correlation with life satisfaction and it is a mediator in the relationship between self-esteem and life satisfaction. On the other hand, difficulties in communicating with peers had a negative correlation with the studied satisfaction with life (Szcześniak et al., 2022). According to Tomé and colleagues (2012), adolescents who maintain positive relationships with their peers using open communication report better mental well-being and present healthy behaviours. There is also evidence that open communication with peers is a protective factor against increasing feeling of negative well-being (Schneider & Younger, 1996).

MENTAL RESILIENCE

The concept of resilience is focused on explaining the phenomenon of healthy functioning of an individual facing unfavourable living conditions or experiencing adversity and traumatic events (Rutter, 1987). Resilience is defined as the ability to deal effectively with external and internal stressors. The conceptualisation of resilience in the developmental perspective is considered as a process (Armstrong et al., 2005) based on the ability to deal with developmental problems characteristic of the development stage of an individual that occur as a result of the individual's transactions with their surrounding. It is also defined as a self-regulation mechanism that protects against negative effects of experienced events, both traumatic and related to everyday life (Ogińska-Bulik & Juczyński, 2011). The authors define resilience as a psychological construct to which they assign a number of features (Heszen & Sęk, 2007). According to these authors, resilience is not an innate personality trait, but it is a set of competences used to effectively deal with problems. Resilience refers to the process of dynamic and positive adaptation in the face of adversities. Resilience is activated when experiencing an immediate threat or a traumatic event, while retaining the ability to maintain competence allowing an individual to deal with it (Ogińska-Bulik & Juczyński, 2011). Persons characterised by high

resilience show higher levels of optimism and inner peace, have higher life energy, curiosity, flexibility, and self-confidence.

Mental resilience is correlated with efficiency, positive behaviour, well-being, and aspirations. In the field of education, studies carried out amongst students of English and Dutch schools have shown that resilience is positively associated with the results of examinations and tests at every level of education, as well as with graduating from the school according to the curriculum (Strycharczyk & Clough, 2012), and with the success of the secondary school final examination (Ogińska-Bulik & Zadworna-Cieślak, 2015). Previous studies have proven that the resilience of adolescents is positively associated with self-esteem and better mental health (Oshio et al., 2002). Researchers have proven that individuals with higher resilience, as compared to those with lower resilience, were characterised by a higher level of intelligence and lower rates of psychopathology symptoms (Robins et al., 1996). A high level of resilience is a factor that protects adolescents against behaviour that is harmful to their health (Ogińska-Bulik, 2010). Therefore, it can be expected that resilience will be essential in applying styles of coping with stress.

COPING WITH STRESS

Today's definitions of stress underline that stress occurs in circumstances connected with the threat of loss or the actual loss of resources essential for the survival of an individual embedded in a family, or a social organization (cf. Napora, 2014). Three situations of stress occurrence are usually cited in the literature. They are: threat of losing resources; the actual loss of resources, or an investment of a significant part of an individual's resources that fails to bring the expected profit (Hobfoll, 2006). Therefore, it can be said that stress is an unpleasant element of our daily life (Bargiel, 1997). On the other hand, coping with stress means cognitive and behavioural attempts of an individual to cope with external and/or internal requirements that can be assessed as exceeding current possibilities and resources of that individual (Lazarus & Folkman, 1984). It is a human activity focused on changing the stressful transaction (Juczyński & Ogińska-Bulik, 2009). Coping with stress is also perceived as conscious efforts to control it. The difficulty of coping with stress can be associated with the style that refers to general personality disposition manifested in the course of coping with events that threaten an individual. It does not depend on the type of situation, as it is an attribute of the subject and depends on such variables as sex, age, intelligence, achievements, level of self-esteem, psychophysical state of the individual, and timorousness (Wrześniewski, 1996).

At present, paradoxically, when significant changes in the social functioning of adolescents occur, the role of resources such as communication with peers or mental resilience does not decrease but increases and requires broader studies. Previous studies have been aimed at finding key protective factors that, at the same time, are individual features as well as factors related to the quality of interpersonal relationships and being features of the social environment. Experiencing a difficult situation may lead some individuals to various negative consequences that are not observed in others (cf. Wałęcka-Matyja & Napora, 2022).

PURPOSE, STUDY PROBLEMS AND HYPOTHESES

The study was aimed at defining predictors of coping with stress among adolescents while considering some predictors from within the area of a given person, which included mental resilience, resilience dimensions, and communication with peers.

In the study paradigm that describes the functioning of adolescents in stressful conditions, it is noted that the effectiveness of coping with difficult situations depends, amongst other factors, on mental resilience and quality of relationships with peers. The results to date have shown that greater resilience in terms of dimensions is associated with a more effective mechanism of coping with stress. The following study questions were formulated: 1) Are mental resilience and communication with peers significant predictors of coping with stress in the studied adolescents? 2) To what extent do the analysed variables explain the styles of coping with stress? Based on these questions, two hypotheses were formulated: 1) Mental resilience and open peer relationships are significant predictors of coping with stress in adolescents. 2) The analysed personality variables largely explain the variability in styles of coping with stress in the studied adolescents.

PARTICIPANTS AND PROCEDURE

PARTICIPANTS

Subjects were 546 adolescents, including 219 boys (40%), and 327 girls (60%). The differences in numbers were statistically significant $\chi^2(1) = 21.36, p < .001$. The study group was various in terms of the number of siblings and was $M = 1.60, SD = 2.01$ (maximum eight siblings). More subjects had one sibling ($n = 257; 47\%$), while only children constituted 16% ($n = 87$). The differences in the number of this variable were statistically significant, $\chi^2(8) = 964.81, p < .001$. The analysis for the age variable showed that the number of respondents aged 14-16 was 204 (37%),

and those aged 17-19 was 342 (63%). The differences in the number of this variable were statistically significant, $\chi^2(1) = 34.88, p < .001$. The most numerous group was that of secondary school students ($n = 191; 35\%$), while the fewest students were in primary school ($n = 21; 4\%$). Almost half of the subjects lived in the countryside ($n = 239; 44\%$), the fewest in a medium-sized town ($n = 32; 6\%$). The differences in the number of this variable were statistically significant, $\chi^2(4) = 273.91, p < .001$. Subjects were various in terms of the structure of their family of origin. Subjects originated from complete families ($n = 456; 84\%$), and from single parent families ($n = 90; 16\%$). The differences in the number of this variable were statistically significant, $\chi^2(1) = 245.34, p < .001$.

TOOLS

Three questionnaires with high psychometric properties and a sociodemographic questionnaire were used in the conducted studies.

The Scale of Communication of Adolescents with Peers. The quality of relationships with peers was examined using the Scale of Communication of Adolescents with Peers (SCAP; Napora, 2019). The scale consists of 20 statements and two subscales. Each of them consists of 10 items. The first subscale measures openness in communication, whilst the second one measures difficulties in communication. Results are obtained for each subscale separately by summing the marked responses in ten situations assigned to a given subscale. Subjects may obtain from 10 to 50 points in each situation. The higher the openness in communicating with peers and the lower the result for communicating with difficulties, the higher the positive evaluation of relationships with peers (Napora, 2019). When measuring communication difficulties, the result obtained by a person is the more positive the lower the numerical result in this subscale. Cronbach's α coefficients for the statements in the subscales of the Openness and Difficulties are high and range from .89 to .93.

The Resilience Measurement Scale. To measure resilience in adolescents the Resilience Measurement Scale (SMS-18; Ogińska-Bulik & Juczyński, 2011) was used. The scale consists of 18 statements arranged into four factors, which are: optimistic attitude and energy, persistence and determination, sense of humour and openness to new experiences, personal competences and tolerance of negative affect. An individual assesses the statements assigned to the factors on a 5-point Likert scale from 0 (*definitely not*) to 4 (*definitely yes*). The enclosed instructions informed about the study purpose and the method of responding. The obtained general result indicates the intensity of resilience in the subject. The internal consistency coefficient, Cronbach's α , estimated for the entire scale was .89.

The Coping Inventory for Stressful Situations (CISS) developed by Endler and Parker (1990) in the Polish adaptation (Strelau et al., 2005) was used to collect data describing the styles of coping with stress. They distinguished the following classification of styles of coping with stress. The first one, task-oriented style, is to focus on the problem and take action to solve it, mainly involving cognitive processes. The second one, emotion-oriented style, is characterised by focusing on one's own emotional reactions, instead of looking for a solution to a problematic situation. A person presenting this style may be characterised by wishful thinking, and their attention is mainly focused on the desire to lower emotional tension. The third style, avoidance-oriented style, mainly involves rejecting and avoiding thoughts related to the problem, "escaping" from trouble, e.g. by taking substitute activities and by seeking social contacts.

The questionnaire contains 48 statements that refer to various behaviours in stressful situations. The subject's task is to determine, using the frequency scale from 1 to 5, how a given statement referred to them by marking the appropriate value. The subject may obtain a result ranging from 16 to 80 points. The sociodemographic questionnaire was used to collect information about the subjects, such as age, gender, siblings, place of residence, type of school, and family structure.

PROCEDURE

The empirical project was approved by the Scientific Research Ethics Committee of the Jan Długosz University in Częstochowa. The study was carried out in 2021. Due to the pandemic conditions prevailing at that time, the online form of data collection was used. Study tools along with the record were placed on the LimeSurvey platform, and then posted via Facebook on groups for adolescents, not only those in secondary schools. Each subject could withdraw at any time without any negative consequences. The collected questionnaires are part of a larger empirical project¹.

RESULTS

The results did not contain abnormal values, duplicate values, or missing values. The R programming language was used in the analysis of the results. Regression analysis was performed in the *car* package, and structural equation modelling in the *lavaan* package. The mean and standard deviation for the analysed variables were calculated (Table 1). To respond to the study questions, multivariate linear regression analysis was performed. Tables 2, 3, 4, 5, and 6 contain the obtained results from statistical analyses.

Table 1*Descriptive statistics for the analysed variables*

Variables	<i>M</i>	<i>SD</i>	Min	Max
Openness in communication	34.56	8.10	10.00	50.00
Difficulties in communication	23.63	6.02	9.00	41.00
Resilience – general result	45.00	12.94	7.00	66.00
Optimistic attitude and energy	12.10	3.98	5.00	20.00
Persistence and determination	12.58	4.10	3.00	20.00
Sense of humour and openness to new experiences	10.88	3.41	1.00	16.00
Personal competences and tolerance of negative affect	8.72	3.73	3.00	16.00
Task-oriented style of coping with stress	53.69	11.36	18.00	69.00
Emotion-oriented strategy of coping with stress	51.86	12.11	25.00	78.00
Avoidance-oriented style of coping with stress:	45.58	10.77	20.00	72.00
Engaging in alternative activities	20.98	6.59	8.00	37.00
Search for social contacts	15.60	5.00	5.00	25.00

*Certain predictors of coping with stress in adolescents***Table 2***Analysis of regression for variables independent of the results of stress coping in the task-oriented style (N = 546)*

Independent variable in the model	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
(Constant)	1.35	0.19	.00	7.11	< .001
Openness in communication	0.01	0.00	.11	2.92	.004
Difficulties in communication	0.00	0.00	.04	1.13	.259
Resilience – general result	0.15	0.01	.62	17.58	< .001
Optimistic attitude	0.17	0.05	.19	3.31	.001
Persistence and determination	0.38	0.04	.43	9.41	< .001
Sense of humour and openness	0.05	0.03	.06	1.32	.187
Personal competences and tolerance	0.04	0.04	.05	1.02	.308

Note. B – non-standardized regression coefficient; β – standardized regression coefficient.

A moderate positive relationship between the task-oriented style of coping with stress (dependent variable) and openness in communication ($\beta = .11$, $p = .004$) was noted. A significant predictor was general resilience ($\beta = .62$, $p < .001$) and such dimensions as optimistic attitude and energy, for which the relationship with the dependent variable is positive and moderate ($\beta = .19$, $p = .001$), and persistence and determination, which is associated with an increase in the dependent variable ($\beta = .43$, $p < .001$). Other predictors are irrelevant in predicting the results of the task-oriented style of coping with stress (Table 2).

Regression analysis showed significant prediction of $F(6, 539) = 81.52$, $p < .001$. The obtained values of the R^2 coefficient showed that the model of the considered independent variables explained 48% (47% af-

ter adjustment) of the variability of results for coping with stress in the task-oriented style.

Moreover, it was analysed which set of variables allows one to predict coping with stress in the emotion-oriented style (Table 3). A moderate positive relationship between emotion-oriented style of coping with stress (dependent variable) and openness in communication ($\beta = .10$, $p = .025$) was noted. It seems interesting that a significant predictor turned out to be the factor of difficulties in communication ($\beta = .21$, $p < .001$). The increase in the results for persistence and determination was associated with an increase in the results of the dependent variable ($\beta = .11$, $p = .048$). On the other hand, a significant predictor turned out to be general resilience, which revealed a strong negative relationship ($\beta = -.41$, $p < .001$), as well as the

factors optimistic attitude and energy, whose relationship with the dependent variable is negative and moderate ($\beta = -.18, p = .010$), and personal competences and tolerance of negative affect, which had a strong negative relationship ($\beta = -.41, p < .001$). Other predictors are irrelevant in predicting the results of the emotion-oriented style of coping with stress.

Regression analysis showed significant prediction of $F(6, 539) = 32.56, p < .001$. The obtained values of the R^2 coefficient showed that the model of the considered independent variables explained 27% (26% after adjustment) of the variability of the results for coping with stress in the emotion-oriented style.

It was also considered whether the same analysed independent variables would prove significant for predicting stress coping in the avoidance-oriented style (dependent variable) in the study group. The results of the regression analysis were as follows (Table 4). A moderately strong relationship positive was established between coping with stress in the avoidance-oriented style and openness in com-

munication ($\beta = .27, p < .001$). Moreover, difficulties in communication turned out to be a positive and moderately strong ($\beta = .15, p = .001$) significant predictor for the dependent variable. Also, a moderately strong, positive, statistically significant relationship was found between the avoidance-oriented style of coping with stress and optimistic attitude and energy ($\beta = .15, p = .045$) as well as sense of humour and openness to new experiences ($\beta = .22, p < .001$). On the other hand, the relationship between personal competences and tolerance of negative affect with the dependent variable turned out to be negative and moderately strong ($\beta = -.16, p = .009$). Other predictors are irrelevant in predicting the results for coping with stress in the avoidance-oriented style.

Regression analysis showed significant prediction, $F(6, 539) = 13.17, p < .001$. The analysis of the R^2 coefficient showed that the model of the considered independent variables explained 13% (12% after adjustment) of the variability of the results for coping with stress in the avoidance-oriented style.

Table 3

Regression analysis for variables independent of the emotion-oriented style of coping with stress (N = 546)

Independent variable in the model	B	SE	β	t	p
(Constant)	3.13	0.24	.00	13.06	< .001
Openness in communication	0.01	0.00	.10	2.24	.025
Difficulties in communication	0.03	0.01	.21	4.87	< .001
Resilience – general result	-0.11	0.01	-.41	-10.02	< .001
Optimistic attitude	-0.17	0.06	-.18	-2.58	.010
Persistence and determination	0.10	0.05	.11	1.98	.048
Sense of humour and openness	0.02	0.04	.02	0.45	.653
Personal competences and tolerance	-0.33	0.05	-.41	-7.35	< .001

Note. B – non-standardized regression coefficient; β – standardized regression coefficient.

Table 4

Regression analysis for variables independent of the avoidance-oriented style of coping with stress (N = 546)

Independent variable in the model	B	SE	β	t	p
(Constant)	1.31	0.23	.00	5.65	< .001
Openness in communication	0.02	0.00	.27	5.54	< .001
Difficulties in communication	0.02	0.01	.15	3.27	.001
Resilience – general result	0.02	0.01	.10	2.33	.020
Optimistic attitude	0.13	0.06	.15	2.01	.045
Persistence and determination	-0.06	0.05	-.08	-1.27	.205
Sense of humour and openness	0.17	0.04	.22	4.05	< .001
Personal competences and tolerance	-0.11	0.05	-.16	-2.62	.009

Note. B – non-standardized regression coefficient; β – standardized regression coefficient.

The analyses carried out on adolescents showed that the dimensions of mental resilience and peer relationships are statistically significant in the regression equation. In the case of the avoidance-oriented style consisting in engaging in alternative activities, the analysis of individual predictors in the model showed the following results: the increase in results for open communication was associated with the increase in results for this form of coping with stress ($\beta = .12, p = .016$). The increase in results for difficulties in communication was associated with the increase in results for the form of engaging in alternative activities ($\beta = .17, p < .001$). Similarly, the increase in results of the variable “sense of humour and openness to new experiences” was associated with the increase in results for this form of coping with stress ($\beta = .17, p = .003$). The increase in results of the variable “personal competences and tolerance of negative affect” was associated with the decrease

in results for the analysed form of coping with stress ($\beta = -.14, p = .027$) (Table 5).

Regression analysis showed significant prediction, $F(6, 539) = 5.08, p < .001$. The analysis of the R^2 coefficient showed that the model of the considered independent variables explained only 5% (4% after adjustment) of the variability of the results for coping with stress in the style involving engaging in alternative activities (as the avoidance-oriented style).

However, in the case of the avoidance-oriented style in the form of searching for social contacts, the analysis of individual predictors in the model produced the results presented in Table 6. The increase in results for openness in communication was significantly associated with the increase in results for searching for social contacts ($\beta = .34, p < .001$). The increase in results for the analysed style searching for social contacts was significantly associated with the increase in results of two resilience factors: optimis-

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Table 5

Regression analysis for variables independent of the avoidance-oriented style of coping with stress: engaging in alternative activities (N = 546)

Independent variable in the model	B	SE	β	t	p
(Constant)	1.61	0.30	.00	5.44	< .001
Openness in communication	0.01	0.01	.12	2.41	.016
Difficulties in communication	0.02	0.01	.17	3.62	< .001
Resilience – general result	-0.01	0.01	-.04	-0.88	.379
Optimistic attitude	0.02	0.08	.02	0.24	.810
Persistence and determination	-0.08	0.06	-.08	-1.29	.198
Sense of humour and openness	0.16	0.05	.17	3.03	.003
Personal competences and tolerance	-0.12	0.06	-.14	-2.22	.027

Note. B – non-standardized regression coefficient; β – standardized regression coefficient.

Table 6

Regression analysis for variables independent of the results of the avoidance-oriented style of coping with stress: searching for social contacts (N = 546)

Independent variable in the model	B	SE	β	t	p
(Constant)	0.56	0.32	.00	1.76	.079
Openness in communication	0.04	0.01	.34	7.68	< .001
Difficulties in communication	0.01	0.01	.04	0.89	.374
Resilience – general result	0.08	0.01	.24	5.86	< .001
Optimistic attitude	0.34	0.09	.27	3.95	< .001
Persistence and determination	-0.04	0.07	-.03	-0.56	.576
Sense of humour and openness	0.18	0.06	.16	3.16	.002
Personal competences and tolerance	-0.12	0.06	-.12	-2.09	.037

Note. B – non-standardized regression coefficient; β – standardized regression coefficient.

tic attitude and energy ($\beta = .27, p < .001$) as well as sense of humour and openness to new experiences ($\beta = .16, p = .002$). On the other hand, the increase in results for personal competences and tolerance of negative affect was significantly associated with the decrease in results for searching for personal contacts ($\beta = -.12, p = .037$). Other predictors are irrelevant in predicting the results of coping with stress in the form of searching for social contacts.

Regression analysis showed significant prediction, $F(6, 539) = 31.52, p < .001$. The value of the R^2 coefficient shows that the regression model of the considered variables explained 26% (25% after adjustment) of the variability of the results for coping with stress in the style involving searching for social contacts (as avoidance). The five predictors reached a significant value in the model.

DISCUSSION

The aim of the study was to identify predictors of coping with stress among adolescents, considering certain predictors from the sphere of the individual, such as general resilience and dimensions of resilience, and communication with peers. Considering the specificity of the adolescence period, which is connected with significant changes occurring in all spheres of life, especially in the emotional and social life, it was found necessary to search for factors that strengthen or facilitate the ability to cope with stress.

The obtained results allowed us to express an opinion on the two study hypotheses. The first one, in which it was expected that resilience and open peer relationships would be important predictors of coping with stress among adolescents, has been confirmed. The obtained results showed that resilience in the analysed dimensions and open communication with peers are important premises for coping with stress. The results can be interpreted assuming that high resilience is conducive to coping with stress, especially in the task-oriented style, considering its two dimensions optimistic attitude and energy, as well as persistence and determination. The obtained results are consistent with the results of other researchers. A high level of resilience turned out to be a factor that protects adolescents from engaging in behaviours that are risky and harmful to their health (Ogińska-Bulik, 2010). The occurrence of a positive relationship of resilience, understood as the possibility to maintain the ability to overcome problems and own weaknesses, as well as adequate response despite the threat (Ogińska-Bulik & Juczyński, 2011), with coping with stress is consistent with the expectations.

To conclude, high resilience determines successful interpersonal relationships and emotional and social maturity considered necessary also for coping

with stress as it will determine the choices of coping styles in difficult situations. Resilience will help in coping with adversities (Newman, 2002) and will protect the individual against the development of maladjustment symptoms, or it will reduce their severity (Iskra & Klinkosz, 2013). Moreover, resilience is essential in the selection of coping styles in the event of stress. The effects are consistent with the opinion of researchers claiming that resilience stimulates an individual to look for new resources to cope with a difficult event (Izdebski & Supryniewicz, 2011). The results of this study confirm that resilient people are not immune to difficulties in some exceptional manner, but they have learned to deal with them effectively (Wagnild & Young, 1993).

Referring to the second hypothesis, in which it was expected that the analysed personality variables would largely explain the variability of coping with stress, the obtained results confirmed it to a certain extent. They showed that for adolescents the studied variable models are statistically significant and suggest that relationships with peers and dimensions of resilience allow for a significant explanation of variability in terms of coping with stress. The adjusted coefficients showed that the percentage of explained variance in the study group is high not in all cases of coping styles. In the event of the avoidance-oriented coping style, it is low and suggests that there are relatively many other variables co-determining the level of this style of coping with stress. Based on the selected variables, the most accurate prediction can be made for the task-oriented style of coping with stress, and the model of personality variables predicts 47% (after adjustment) of coping with stress in the discussed style. On the other hand, the developed model of variables allows for the poorest prediction of coping with stress in the form of engaging in alternative activities (4% after adjustment).

Data analyses, regardless of the variability of styles of coping with stress, showed that psychological resilience (certain dimensions) and relationships with peers based on openness in communication are significant protective factors for adolescents. The dimensions of resilience were stimulants, which means that their increase improves coping with stress. The results of the study have shown that the choice of coping styles by adolescents depends on the subjective characteristics of the individual. The effects are consistent with the results of other researchers who confirm that adolescents use a variety of coping styles (Pisula, 2003).

CONCLUSIONS

The carried out studies point to a significant role of resilience and communication with peers in the selection of styles of coping with stress, though the ob-

tained relationships can be considered no more than moderate. The following conclusions can be made from the obtained results:

1. Trends have been observed that have emerged in relation to the individual dimensions that make up resilience. The optimistic attitude and energy (positive correlation) factor shows the greatest number of associations with the styles of coping with stress, which is conducive to taking preventive styles for coping with stress.
2. The factor “personal competences and tolerance of negative affect” significantly reduces the tendency to maladaptive coping with stress (negative correlation) connected with COVID-19.
3. Amongst the factors contributing to coping with stress is openness in communicating with peers. Openness in creating social contacts and meeting friends can favour a social support network.
4. At the same time, an unexpected result turned out to be a significant positive relationship between the style of communicating with difficulties and the maladaptive forms of coping with stress, i.e. emotion-oriented and avoidance-oriented, in the form of engaging in alternative activities.

STUDY LIMITATIONS

It should be pointed out that the study group was dominated by girls and adolescents aged 14-16, which is not entirely consistent with the recommendations of the authors of the CISS tool used in the study. A minority of subjects originated from a single mother’s family. Therefore, in the future, research on diverse adolescent groups, characterised by a wider range of qualified variables, should be carried out. Future research may consider the impact of social factors related to the implementation of health programmes for adolescents.

SCOPE OF APPLICATION OF RESULTS

Research concerning the relationship of resilience and communication with peers is important from the point of view of shaping styles of coping with stress. The results are intended for teachers and educators interested in the issues of educational psychology and human development in the course of life, as well as for adolescents for whom the concept of resilience will be interesting. The results may, above all, be helpful in improving the fulfilment of the role of an adolescent; they will enable the personal transformation of an individual and facilitate growth as a result of experiencing adversities. Therefore, they can become helpful and interesting for teachers active in organisation of support for adolescents through contacts with the peer community.

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ENDNOTE

- 1 The project was performed in cooperation with the Department of Pedagogy and Psychology of the Silesian University in Opava (Czech Republic) in 2022.

REFERENCES

- Armstrong, M. I., Birnie-Lefcovitch, S., & Unger, M. T. (2005). Pathways between social support, family well being, quality of parenting, and child resilience: What we know. *Journal of Child and Family Studies, 14*, 269–281. <https://doi.org/10.1007/s10826-005-5054-4>
- Bargiel, Z. (1997). *Stres – problem otwarty* [Stress – an open issue]. Publishing House of the Mikołaj Kopernik University.
- Barnes, H. L., & Olson, D. H. (1985). Parent-adolescent communication and the circumplex model. *Child Development, 56*, 438–447. <https://doi.org/10.2307/1129732>
- Endler, N. S., & Parker, J. D. (1990). Multidimensional assessment of coping: a critical evaluation. *Journal of Personality and Social Psychology, 58*, 844–854. <https://doi.org/10.1037/0022-3514.58.5.844>
- Grygiel, P., & Humenny, G. (2015). Efektywność nauczania a relacje rówieśnicze [Education effectiveness and peer relationships]. In R. Dolata, A. Hawrot, G. Humenny, A. Jasińska-Maciążek, M. Koniewski, P. Majkut, & A. Otręba-Szklarczyk (Eds.), *(Ko)warianty efektywności nauczania. Wyniki badania w klasach IV-VI* [(Co)variants of education effectiveness. Study results in class 4-6] (pp. 85–116). Instytut Badań Edukacyjnych.
- Harris, J. R. (2000). *Geny czy wychowanie?* [Genes or upbringing]. Jacek Santorski & Co.
- Herbert, M. (2004). *Rozwój społeczny ucznia* [Social development of a student]. Gdańskie Wydawnictwo Psychologiczne.
- Heszen, I., & Sęk, H. (2007). *Psychologia zdrowia* [Psychology of health]. PWN.
- Hobfoll, S. E. (2006). *Stres, kultura i społeczność: psychologia i filozofia stresu* [Stress, culture and society: The psychology and philosophy of stress]. Gdańskie Wydawnictwo Psychologiczne.

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- Iskra, J., & Klinkosz, W. (2013). Prężność a poczucie bezpieczeństwa młodzieży rozpoczynającej studia [Resilience and the sense of security of adolescents starting their studies]. In Z. Gaś (Ed.), *Młódzież zagubiona – młodzież poszukująca* [Lost adolescents – searching adolescents] (pp. 153–170). Publishing House of the Higher School of Economy and Innovation.
- Izdebski, P., & Supryniewicz, M. (2011). Rozwój pourazowy a prężność [Posttraumatic growth and resilience]. *Nauki o Edukacji. Rocznik Naukowy Kujawsko-Pomorski*, 5, 61–69.
- Jędrzejko, M., & Walancik, M. (2019). *Zagrożenia dorastania. Od rozwoju zaburzonego do zrównoważonego* [Dangers of growing up. From disturbed to balanced development]. Publishing House ASPRA.
- Juczyński, Z., & Ogińska-Bulik, N. (2009). *Narzędzia pomiaru stresu i radzenia sobie ze stresem* [Tools for measuring stress and coping with stress]. Pracownia Testów Psychologicznych PTP.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. Springer.
- Mendecka, G. (2003). *Środowisko rodzinne w percepcji osób aktywnych twórczo* [Family environment in the perception of creatively active persons]. Publishing House of the Pedagogical University in Czestochowa.
- Napora, E. (2017). Wsparcie społeczne dziadków i komunikowanie się z rówieśnikami predyktorami prężności u adolescentów z rodzin samotnych matek [Social support of grandparents and communication with peers as predictors of resilience in adolescents from single mother families]. *Roczniki Psychologiczne*, 20, 775–793. <https://doi.org/10.18290/rpsych.2017.20.4-3pl>
- Napora, E. (2019). *Relacje w rodzinie samotnej matki. Znaczenie wsparcia od dziadków dla komunikowania się z rówieśnikami u adolescentów* [Relationships in the single mother family. The importance of support from grandparents for communicating with peers in adolescents]. The Publishing House of the Jan Długosz University.
- Napora, E., & Pękala, B. (2014). Komunikacja z matką a siła związku córki z rówieśnikami tej samej płci [Communication with mother and the strength of a daughter's relationship with her peers of the same sex]. *Polskie Forum Psychologiczne*, 19, 479–494. <https://doi.org/10.14656/PFP20140404>
- Napora, W. (2014). Style radzenia sobie ze stresem i ocena poznawcza u artystów występujących publicznie [Styles of coping with stress and the cognitive assessment of artists giving public performances]. *Psychologia Wychowawcza*, 6, 119–127. <https://doi.org/10.5604/00332860.1140768>
- Newman, T. (2002). *Promoting resilience: a review of effective strategies for child care services*. Center for Evidence Based Social Sciences.
- Obuchowska, I. (2002). Adolescencja [Adolescence]. In B. Harwas-Napierała & J. Trempała (Eds.), *Psychologia rozwoju człowieka* [Human development psychology] (Vol. 2, pp. 163–201). PWN.
- Ogińska-Bulik, N. (2010). Szkoła jako środowisko kształtowania psychologicznych zasobów jednostki chroniących przed podejmowaniem zachowań ryzykownych – rola prężności [School as an environment for shaping psychological resources individuals protecting against undertaking risky behaviors – the role of resilience]. In D. Bilski (Ed.), *Szkoła jako środowisko edukacji zdrowotnej* [School as an environment for health education] (pp. 21–34). Wydawnictwo WSEZiNS.
- Ogińska-Bulik, N., & Juczyński, Z. (2011). Prężność u dzieci i młodzieży: charakterystyka i pomiar – polska skala SPP-18 [Resilience in children and adolescents: Characteristics and measurement – Polish scale SPP-18]. *Polskie Forum Psychologiczne*, 16, 7–28.
- Ogińska-Bulik, N., & Zadworna-Cieślak, M. (2015). Rola prężności psychicznej w radzeniu sobie ze stresem związanym z egzaminem maturalnym [The role of mental resilience in coping with stress connected with the matriculation examination]. *Przegląd Badań Edukacyjnych*, 2, 8–24. <https://doi.org/10.12775/PBE.2014.019>
- Oleszkowicz, A., & Senejko, A. (2013). *Psychologia dorastania. Zmiany rozwojowe w dobie globalizacji* [Psychology of adolescence. Development changes in the age of globalization]. PWN.
- Oshio, A., Nakaya, M., Kaneko, H., & Nagamine, S. (2002). Development and validation of an adolescent resilience scale. *Japanese Journal of Counseling Science*, 35, 57–65.
- Pawelec, M., & Łukasiewicz, J. (2012). Szantaż emocjonalny w relacjach rówieśniczych [Emotional manipulation in peer relationships]. *Roczniki Nauk o Rodzinie i Pracy Socjalnej*, 4, 299–312.
- Pisula, E. (2003). Środowiskowe i osobowościowe uwarunkowania radzenia sobie ze stresem przez dzieci i młodzież [Environmental and personality determinants of coping with stress by children and adolescents] In A. Jurkowski (Ed.), *Z zagadnień współczesnej psychologii wychowawczej* [The issues of contemporary educational psychology]. Instytut Psychologii PAN.
- Robins, R. W., John, O. P., Caspi, A., Moffitt, T. E., & Stouthamer-Loeber, M. (1996). Resilient, overcontrolled, and undercontrolled boys. Three replicable personality types. *Journal of Personality and Social Psychology*, 70, 157–171. <https://doi.org/10.1037/0022-3514.70.1.157>
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316–331. <https://doi.org/10.1111/j.1939-0025.1987.tb03541.x>

- Ryś, M. (2012). *Rodzina na rozdrożu w zmieniającym się świecie* [Family at cross roads in a changing world]. Paper presented at the 3rd International Scientific Conference, Lublin.
- Schneider, B. H., & Younger, A. J. (1996). Adolescent-parent attachment and adolescents' relations with their peers: a closer look. *Youth and Society*, 28, 95–108. <https://doi.org/10.1177/0044118X96028001004>
- Sęk, H. (2001). O wieloznacznych funkcjach wsparcia społecznego [Ambiguous functions of social support]. In L. Cierpiałkowska & H. Sęk (Eds.), *Psychologia kliniczna i psychologia zdrowia* [Clinical psychology and psychology of health] (pp. 13–33). Humaniora.
- Smahel, D., Brown, B. B., & Blinka, L. (2012). Associations between online friendship and Internet addiction among adolescents and emerging adults. *Developmental Psychology*, 48, 381–388. <https://doi.org/10.1037/a0027025>
- Stach-Hejusz, M. (2011). Postawa religijna a relacje interpersonalne katechizowanej młodzieży gimnazjalnej [Religious attitude and interpersonal relationships of catechized junior high school students]. *Śląskie Studia Historyczno-Teologiczne*, 44, 166–176.
- Strelau, J., Jaworowska, A., Wrześniewski, K., & Szczepaniak, P. (2005). *Kwestionariusz radzenia sobie w sytuacjach stresowych. Podręcznik*. [The Coping Inventory for Stressful Situations. Manual]. Pracownia Testów Psychologicznych PTP.
- Strycharczyk, D., & Clough, P. (2012). *Developing mental toughness, improving performance, wellbeing and positive behaviours in others*. Kogan Page.
- Szczeńiak, M., Bajkowska, I., Czaprowska, A., & Siłęńska, A. (2022). Adolescents' self-esteem and life satisfaction: Communication with peers as a mediator. *International Journal of Environmental Research and Public Health*, 19, 3777. <https://doi.org/10.3390/ijerph19073777>
- Tomé, G., Matos, M., Simões, C., Diniz, J. A., & Camacho, I. (2012). How can peer group influence the behaviour of adolescents: Explanatory model. *Global Journal of Health Science*, 4, 26–35. <https://doi.org/10.5539/gjhs.v4n2p26>
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1, 165–178.
- Walęcka-Matyja, K., & Napora, E. (2022). *Analiza psychologiczna rodzinnych i osobowych uwarunkowań osiągnięć szkolnych uczniów* [Psychological analysis of family and personal determinants of school achievements of students]. Publishing House of the University of Łódź (in print).
- Wrześniewski, K. (1996). Pomiar radzenia sobie ze stresem – wybrane zagadnienia [Measurement of coping with stress – selected issues]. *Promocja Zdrowia. Nauki Społeczne i Medycyna*, 8–9, 34–46.